



Official Catalogue

The 8th Edition

8

YEAR  
ANNIVERSARY



**WELCOME MESSAGES**

**EVENT INFORMATION**

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# TISIAS

## TORONTO INTERNATIONAL SOCIETY OF INNOVATION & ADVANCED SKILLS

Toronto International Society of Innovation & Advanced Skills (TISIAS) was established in 2013 to build a global hub in Toronto, Canada to provide a variety of services and opportunities for both local and overseas inventors, innovators, students and researchers to promote their inventions and products in the world market. TISIAS is globally active as the delegation of Canada participating in numerous international invention exhibitions, competitions and conferences organized by its partners around the world. TISIAS majorly promotes its Canadian and American members' inventions and products to world exhibitions and conferences as well as some other international members' creative ideas to success in commercialization and branding.



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CANADA**



International Invention Competition in Canada  
iCAN-TORONTO, CANADA

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**iCAN 8 2023**





International Invention Innovation Competition in Canada  
**iCAN-TORONTO, CANADA**

# **WELCOME TO iCAN 2023**

## **THE 8<sup>TH</sup> ANNUAL EDITION**

THE 8<sup>TH</sup> INTERNATIONAL INVENTION INNOVATION COMPETITION IN CANADA, iCAN 2023

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## MOONSUK CHANG / The Organizer of iCAN 2023



Greetings to all new and returning participants of iCAN 2023!

Welcome to Year 8. It is a great pleasure as always to welcome all inventors from around the world to join us and merge creative forces together. Each year that I organize iCAN, I always take away something new to learn, to realize and to feel about what it means to be the host of this event and most importantly, what would it mean for our participants to take part in this competition. Now that it's been many years since iCAN first launched in 2016, I repeatedly realize that creativity proved to have no limits or boundaries. After every iCAN edition, I observed that the level of creative skills and technologies shown by our participants continue to improve and develop year after year. I am glad to see this development because it is pure proof and evidence that the field of invention and innovation is still alive, healthy, and ongoing in our societies. I was happy to see that so many competitive inventions and products were featured in iCAN 2023. I believe that "being highly competitive" in any field of studies and research is one of the most significant and important factors to consider. Thus, I would like to express my thanks and appreciation to all participants for making iCAN 2023 a more competitive edition than it was ever before.

To meet the highly competitive standard that has been set by our participants, it was my responsibility with iCAN Team to also work at a higher level to produce a better version of iCAN year after year. Through timeless effort, our goal is always to provide the most professional service possible and coordinate as many participants from around the world, so that you can feel the most satisfying experience and gain the best outcome of participating in iCAN to be unmatched with other events.



As making iCAN to be a high-quality competition was our most important standard, it would not have been perfected without our supporting cast. I would like to thank our Organizing Committee Members, our Co-Chairs and VPs, Bob Huybrechts, Mike McFarthing and Howard Lim as well as our international delegations for being our driving forces since the beginning of our journey in 2016. Because of their support, iCAN is a stronger event today.



I sincerely applaud our participants of iCAN 2023. You are all talented, gifted, and competitive individuals who landed us a huge challenge to evaluate and assess your ideas. Our jury members gave you a challenge and brought out the best in you. But please know that you also brought out the best from us. We appreciate all of you in every way because we learnt a great deal about your innovation and what it means to work hard and give everything that we've got to set the tone for the best version of iCAN for you. As we enter our 8th year, expectations grow beyond imagination. We will continue to push through all challenges to protect our great platform as the main inventors' stage of Canada for you and for the future generation of young inventors to come.

Congratulations once again to all participants for the success you have captured in this year's iCAN 2023. I have a tremendous amount of respect for all inventors and students who must have put up with a lot of heart and sacrifices to achieve their goals. Let us remember that we are not here just because of talent or ability. We are all here because we had a dream and let nothing stand in our way. If anything tried to bring us down, we use it to make us stronger. iCAN will always sail through hard work and dedication with an undeniable purpose and a reason to believe that we can bring out the best international platform in Canada for worldwide inventors. We will always be prepared and be ready to set this special occasion and opportunity for you. It is my great honour to welcome you to iCAN 2023. "Because We Can"



**Moonsuk Chang**  
Chairman & Chief Exhibition Officer  
Toronto International Society of Innovation & Advanced Skills (TISIAS)



## BOB HUYBRECHTS / Co-Chairman of the Jury



Dear Inventors of iCAN 2023 “The 8<sup>th</sup> Annual Edition”,

They say, *‘Time moves slowly, but passes quickly and waits for no man’*. That’s why I can hardly believe that it is already a whole year ago I was preparing my contributions for last year’s iCAN. To all participants who are joining us for the iCAN 2023 Competition, I would like to offer my most heartfelt welcome!

Properly managing one’s time is also a known idiosyncrasy that relates to inventors, as they often lose focus while trying to perfectionize or improve their invention a tad too much. As I mentioned in my welcome video, in June Inventors Circle held a unique Awards Event, where we recognized and congratulated about 25 local inventors, handing out Certificates of Award and Medals. Many spectators and even a few kids were in the audience witnessing the ceremony...

However, the truly amazing feature of this event lies within the unique location: it took place inside the one-and-only, newly restored “Niagara Power Station” that, my friends, is the original building, where the first five Nikola Tesla AC generators were installed in 1905! Undoubtedly, this setting symbolizes the rapid adoption of one of the most revolutionary inventions in human history.



For us, the impressive, historic Power Station facility may well have been the most appropriate surroundings for a celebration of the Awards for Inventors! After generating electricity for more than 110 years (until 2018), the decision was made to preserve and restore this wonderful piece of history. In fact, just last year, the entire building has been turned into a beautiful museum, open to the public and is well worth visiting the next time you travel to Canada. ([www.niagaraparks.com](http://www.niagaraparks.com))

In closing, I want to thank Moonsuk Chang “The Organizer of iCAN” for his passion and determination for doing such a splendid job behind the scenes, because I think we’re all excited to find out how our inventions will fare on August 26! I always like to congratulate you for pursuing your ideas and developing your inventions, because we all know how challenging the inventing process really is... and after all, where would we be without inventions?



I bid you all Good Luck at the iCAN 2023 competition!

Warmest regards,

**Bob Huybrechts**  
Founder & President



**Innovation Initiative Co-operative Inc. “The Inventors Circle”**  
“The World’s First Inventor Co-operative”  
Co-Chairman of iCAN Jury Committee (2016 – present)



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## HOWARD A. LIM / Co-Chairman of the Jury



A special gratitude to iCAN for hosting the 2023 International Invention Innovation Competition in honor of its 8th anniversary!

On behalf of iCAN, I proudly applaud the organizers and team behind this! My deepest thanks to Moonsuk for going above and beyond, having this platform of such promising minds from different parts of the globe to compete, learn & showcase their creativity and ingenuity.

Serving you today as your speaker, judge and co-chair of iCAN, what an honor to congratulate and salute you all for your dedication, achievements, enthusiasm and commitment. You all are truly admirable!

iCAN is a driving force for innovators and entrepreneurs around the world seeking solutions that can improve lives, build resilient communities, and inspire progress, striving to create an innovative ecosystem where ideas are not only supported but also cultivated.

I'd like to leave you with a quote from Neil Armstrong, *"That's one small step from a man, a giant leap for mankind"*. With your creative thinking, daring research, and hard work, we can move far beyond what is currently imagined!

Sincerely,

**Howard A. Lim**

President HOW CREATIVE ([www.howcreative.com](http://www.howcreative.com))

Co-Chairman of iCAN Jury Committee & Keynote Speaker (2016 – present)



*"Inventors, Welcome to iCAN 2023!"*



## ALIREZA RASTEGAR / President of IFIA

On behalf of International Federation of Inventors' Associations (IFIA), I would like to truly applaud and congratulate the organizer and thank many supporters behind the successful opening of the 8<sup>th</sup> International Invention Innovation Competition in Canada, iCAN 2023 in Toronto, Canada.

iCAN is a prestigious event that showcases innovative inventions and ideas from around the world. It provides a platform for inventors, researchers, and entrepreneurs to present their creations and compete for recognition and awards. The competition aims to promote creativity, international collaboration, entrepreneurship, and commercialization in the field of innovation. It encourages participants to develop solutions to real-world problems and contribute to the advancement of various industries.

On the eve of the 55th anniversary of the IFIA, the International Federation of Inventors' Associations whose aim has been to promote the culture of invention and innovation for more than half-century highly supports the creation of an international platform where the world inventors get together, exchange innovative knowledge, and display the fruits of their mind.

IFIA invites all our members, inventors, innovators, and researchers to participate in iCAN. Participating in iCAN can be a significant opportunity for inventors and innovators to gain exposure, establish credibility, and attract potential investors or partners. It also allows them to learn from other participants, discover emerging trends and technologies, and stay updated with the latest developments in the innovation ecosystem. I hope all participants will enjoy this great event.

**Alireza Rastegar**

President

International Federation of Inventors' Associations (IFIA)



## MANLI HSIEH / President of WIIPA



Dear Inventors, Innovators and Young Students Around the World,

On behalf of World Invention Intellectual Property Associations (WIIPA), I would like to advance my deepest gratitude and appreciation to Toronto International Society of Innovation & Advanced Skills (TISIAS) for the great deal of effort they have devoted into organizing their annual event: **The 8th International Invention Innovation Competition in Canada, iCAN 2023 in Toronto, Canada.**

Throughout the last 7 years, it was evident to see that iCAN has truly made one of the biggest cultural impacts for the global community of inventors and innovators by merging many creative minds and souls from 95 countries around the world from 2016 to 2022. The iCAN Team's hard work and dedication for promoting inventors and entrepreneurs while facilitating the event social exchange, innovation marketing has truly been remarkable and effective.

WIIPA fully supports iCAN every year and we wish that all inventors, students, researchers, entrepreneurs, and enterprises can take their best shot at iCAN 2023 to grasp many future opportunities and capitalize all fruits of beneficial means that iCAN platform has to offer you.

**Manli Hsieh**

*President*

**World Invention Intellectual Property Associations (WIIPA)**



## MIKE McFARTHING / Vice-President of the Jury



Greeting from Toronto, Canada! I am Mike McFarthing, and your VP of the Award Jury. It is my profound privilege to welcome all finalists once again to the 2023 iCAN Awards. The growing number of inventor applicants from the 4 corners of the world is a true testament to the powers of creativity and inventing to connect the world. With so many wars and trouble today the need for inventing and collaboration for a brighter future has never been higher. I applauded you all in your effort and I congratulate you for participating in this vibrant and well respect Inventor Awards.

**Mike McFarthing**

*Director of Education*

**Innovation Initiative Co-operative Inc. "The Inventors Circle"**  
*iCAN Jury Vice-President & The Master of Ceremonies (2016 – present)*



## PROF. DR. ANDREI VICTOR SANDU / Vice-President of the Jury



It brings me a great pleasure to represent Romania in iCAN through the past many years that I've been working alongside our great partner TISIAS and Moonsuk Chang. The Romanian Inventors Forum and our inventors entering this competition have always felt like Canada is our second home and a perfect ground for innovation to bloom its potentials and further proceed to its next step: The Market! I truly wish that a diversity of participants taking part in this year's iCAN 2023 "The 8<sup>th</sup> Edition" can take the most out of the competition and reach various goals and achievements that they all desire.

Welcome to iCAN 2023 and I wish you all the best of luck!

**Andrei Victor SANDU**

*President of the Romanian Inventors Forum*

*Professor at Gheorghe Asachi Technical University of Iasi*



## SIR DR. YOSHIRO NAKAMATS / iCAN 2023 Committee Advisor



Ladies and gentlemen, and esteemed inventors,

iCAN 2023, this remarkable event brings together brilliant minds from across the globe, showcasing the ingenuity and innovative spirit that drive our world forward.

I extend my heartfelt gratitude to the organizers, sponsors, and all those who have contributed to making this exhibition a reality. Your dedication to the advancement of science and technology is commendable and inspiring.

Thank you and enjoy the exhibition!



**Sir Dr. Yoshiro NakaMats**  
*Chairman*

World Genius Convention (WGC), International Invention & Innovation Institute (IIII) – Japan

## DR. JJ VITTAL / iCAN 2023 Jury Member

Dear iCAN 2023 organizers, for the past several years you have consistently been at the forefront of driving innovation and advancing skills in the world. Your dedication to creating a platform for collaboration, learning, and growth has had a profound impact on individuals and organizations alike. Through your initiatives, you have been instrumental in nurturing a culture of innovation, inspiring aspiring professionals, and empowering them to reach new heights. Your commitment to fostering innovation and promoting advanced skills is truly commendable.



Dear participants and inspiring inventors, it is with immense pleasure that I extend my warmest congratulations to every one of you on your outstanding triumph at this competition. Your remarkable achievement is a testament to your exceptional talent, dedication, and innovative spirit. Winning this prestigious competition is no small feat. Your inventive ideas and groundbreaking creations have not only captivated the judging panel but have also set new benchmarks for innovation in your respective fields. Your contributions have undoubtedly pushed the boundaries of knowledge and have the potential to transform industries and improve the lives of people around the world. Your remarkable achievements have not only brought honor to yourselves but also to your families, institutions, and nations. Once again, my heartfelt congratulations to all of you for this exceptional conference to celebrate your accomplishments.

Warmest regards,



**Dr JJ Vittal**  
*Emeritus Professor*

Department of Chemistry, National University of Singapore



Department of Chemistry  
Faculty of Science

## DR. GIHAN FARAHAT / iCAN 2023 Jury Member



I would like to sincerely congratulate iCAN 2023 Organizers & Participants for a successful performance and further the achievements rewarded for your great ideas and valiant efforts! As a long-time member of the jury of this event, I am happy to continue a stronger collective activity with TISIAS and that the activities that we engage together will only become better as we continue to strive for the best effort and support each other at will. Congratulations!



**Dr. Gihan Farahat, Ph.D.**  
*Founder & Chairperson*

Egyptian Council of Creativity Innovation & Protection of Information (ECCIP)



## DR. DRAGAN JOVANOV / iCAN 2023 Jury Member



I would like to congratulate iCAN 2023 Organizing Committee & Team as well as the Participants & Inspiring Inventors! I am honoured to be a part of this world-class event and a heartfelt gratitude to the Organizing Chairman of iCAN 2023, Mr. Moonsuk Chang for inviting me in.

To change the world, we need to change our habits, thus setting an example for people to follow the right path, to choose those things that are valued and that account for dignity and the goodness of our souls. What you are doing in this amazing event iCAN, where you appreciate all the innovative project of innovators from all over the world is commendable & praiseworthy. Those innovators are our future and our trace. We as innovators and educators are the ones who need to show them the way so that they can follow with work, motivation, and a good heart. All participants are quality innovators, only some are in an advanced stage of research and some need time to be ready. Never, ever give up on your dreams.

Best regards,

**Dr. Dragan Jovanov**  
Global Representative  
Macedonian Association „Doza srečja,,



## AVDO HALILOVIC / Delegation of Bosnia and Herzegovina

Congratulations to the organizers and their exceptional team for hosting the 8th annual edition of iCAN 2023! As the representative of the Inventors Association of Bosnia and Herzegovina, we extend our heartfelt appreciation for their unwavering commitment to fostering creativity and innovation on a global scale. iCAN has evolved into an esteemed platform that unites inventors from diverse backgrounds, transcending borders and igniting a spark of ingenuity. The continuous growth and success of this premier event showcase its significance in nurturing groundbreaking ideas that shape the world.



We are inspired by the passion and dedication of all participants, whose brilliance enriches the global innovation landscape. Together, let us embrace this opportunity to collaborate, learn, and create a future where invention knows no limits. We applaud the organizers for creating this remarkable gathering, and we eagerly anticipate the remarkable discoveries that will emerge from iCAN 2023. May this edition be a testament to the power of collective imagination and a catalyst for transformative change.

Best wishes for a resounding success!

**Avdo Halilovic**  
Secretary General  
Inventors Association of Bosnia and Herzegovina



## ZOLTÁN NAGY / Delegation of Hungary



I would like to congratulate Mr. Moonsuk Chang, the Organizer of iCAN and the President of the Toronto International Society of Innovation and Advanced Skills (TISIAS) for holding the 8th anniversary of Canada's best event. iCAN was an excellent opportunity for us to represent Hungary and our fellow inventors. This is the fourth time we have participated in this noble and excellently organized event. Thank you for your valiant efforts to make iCAN possible. Congratulations!



Sincerely,

**Zoltán Nagy**  
President

Idea Club 13 Association (Hódmezővásárhely-Hungary)

## JEERASAK JITROTJANARAK & ROBERT ARMSTRONG Satit Chula Innovation Society (SCIS) / Multi-Delegation of Thailand



Warmest of greetings to all from Thailand. Mr. Jeerasak Jitrotjanarak, the director of SCIS, and myself Mr. Robert Armstrong, the deputy director of SCIS, would like to extend our heartiest congratulations to the iCAN organisers, along with their teams for organising yet another fantastic event this year. It is always a pleasure to collaborate with iCAN and we hope to continue this blossoming relationship between our two organisations.

To the participants and inspiring inventors, we congratulate you on your achievements and successes at this year's iCAN.

We are always deeply impressed by the great minds we encounter at events such as iCAN. We hope that you keep working towards your goals of innovation, for a better world and a brighter future.

**Jeerasak Jitrotjanarak & Robert Armstrong**  
*Director & Deputy Director*  
Satit Chula Innovation Society, Thailand



## VICTOR BAUTISTA DÍAZ / iCAN 2023 Jury & Committee Advisor

Dear members of the Jury, Organizing Committee, Mr. Moonsuk Chang and his relevant Team, delegations from near and far countries, researchers, and innovators, please, receive my welcome message and congratulations for being here, in this colossal event that is iCAN 2023.

Certainly, one more time, we are expecting to see a lot of important innovations, inventions and researches, made with effort (sometimes with media shortage), illusion, commitment, and a strong confidence in the future; a future that should be better, not only for all of us but for the entire planet. Here, we have a significant lot of work made by innovators and researchers, but also made by the professional Organizing Team and their skill people. I think it is a wonderful symbiosis that enhances each other. The modern world should take this Event as a cooperation model to follow.



Thank you very much and a beautiful success for all of you.

**Victor Bautista Díaz**  
*Chemist & Private Researcher*  
Buenos Aires, Argentina



## WAM ELVIS MBVIUGEH / iCAN 2023 Committee Advisor



Dear iCAN 2023 Participants, the Organizing Committee and Delegations, I wish the best of luck and great hopes for this amazing event held in Toronto, Canada. Although we are not together in person, my inventive spirit and soul are always with you. Even though I am faced with many difficulties and nationwide problems of our country with civil war, our good hearts and creative minds keep us going and our hopes are always high up in the sky. I wish my fire power invention burns away every evil practiced in these perilous times that will hinder the progress of creativity by our generation of people in Cameroon. While battling fear, we are working hard to continue collaborating with the good iCAN competition. Please accept my best wishes to my fellow inventors and researchers around the world.

**Wam Elvis Mbviuegh**  
*Inventor & iCAN 2023 Committee Member*  
Holly Center for Research and Practical Sciences (HCRPS COOP-BOD) – Cameroon



## PROF. AUREL MIHAIL TITU / iCAN 2023 Jury Member



"First of all, I would like to congratulate the organizers for making this new online edition, the 8th one. Behind this event there is a lot of hard work and sleepless nights. As a university professor and PhD supervisor, as an inventor and European expert in Intellectual Property, it is a great honour to participate and collaborate with great inventors from all over the world.

There is a special person that has a key role in the making of this edition, Mr. Moonsuk Chang, and his team of professionals who managed this great event. Thank you for nominalizing me to be part of the International Jury of iCAN 2023.

Kind thoughts go to the heads of delegations worldwide and those who lead the organizations of Intellectual Property Protection. I thank all of them for the unique collaboration and for the support they have offered me in my professional training in the field of Intellectual Property at the International level in the last 30 years.

Congratulations to all participants for the inventions presented at iCAN 2023!

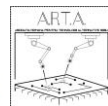
**Aurel Mihail TITU**

*Professor*

**"Lucian Blaga" University of Sibiu – ROMANIA**

*President*

**The Romanian Association for Alternative Technologies Sibiu - A.R.T.A. Sibiu**



## HOSSEIN VAEZI ASHTIANI / Delegation of I.R. IRAN

Dear Organizers, Participants, and Distinguished Guests,

On behalf of The First Institute of Researchers and Inventors in I.R. Iran (FIRI), I extend my warmest congratulations to the 8th International Invention Innovation Competition (iCAN) 2023 held in Toronto, Canada. This remarkable event has once again brought together inventive minds from around the world to showcase their groundbreaking innovations, and we are thrilled to witness the incredible progress and creativity demonstrated by all the participants.



In an era where innovation has become increasingly vital, events like iCAN serve as a catalyst for progress, inspiring participants to push the boundaries of what is possible. It is through initiatives like these that groundbreaking inventions and groundbreaking solutions are born, paving the way for a brighter and more sustainable future.

I congratulate all the participants of the 8th International Invention Innovation Competition (iCAN) 2023. Your inventions inspire us, your passion motivates us, and your impact will shape the world for generations to come. We eagerly look forward to witnessing the transformative impact of your groundbreaking innovations.

Best Regards,

**Hossein VAEZI ASHTIANI**

*President*

**The First Institute of Researchers and Inventors in I.R. IRAN**



## DR. SOKUNTHEARY SO / Delegation of Cambodia



Greeting from Cambodia! I am Dr. Sokuntheary SO, Honorary Head of Department of Architecture and Urbanism, Norton University, Cambodia. On behalf of Norton, Cambodia, I would like to congratulate on your 8th anniversary of the 2023 International Invention Innovation Competition in Canada iCAN, which organized by Toronto International Society of Innovation & Advanced Skills (TISIAS).

This year we are happy to bring 4 projects from Department of Architecture and Urbanism to join the competition in Canada iCAN 2023. I do hope these projects will make all judges appreciate and admire our students' works with new advantage technology for society. As the representative of Cambodia, I would like to congratulate the organizers for hosting this amazing event, and I looking forward to supporting the event as a Cambodian participant. Best wishes to all the competitors and for a successful iCAN 2023!

Sincerely yours,

**Dr. Sokuntheary SO**  
Professor  
Norton University, Cambodia



## EDYTA WOŁCZYK / Multi-Delegation of Poland

Dear iCAN 2023 Invention Show Participants,

Congratulations on your outstanding efforts and remarkable achievements at the 8th annual edition of iCAN 2023! Your dedication, ingenuity, and hard work have shone brightly, inspiring us all with your innovative creations and breakthrough ideas. In a constantly evolving world, your contributions remind us of the boundless possibilities that lie ahead. Your inventions not only showcase your exceptional talent but also hold the promise of shaping a better future for all. Your commitment to pushing boundaries, thinking beyond limits, and pursuing excellence is truly commendable.

I applaud your courage to dream big and your relentless pursuit of realizing those dreams. Your journey as inventors is a testament to the power of human creativity and determination. Remember, innovation knows no boundaries, and each step you take brings us closer to a more advanced and enlightened society. I would also like to extend my heartfelt appreciation to the organizers and the entire team behind iCAN 2023. Your dedication to fostering innovation and providing a platform for inventors to showcase their brilliance is truly praiseworthy. Your efforts have brought together remarkable minds and ignited a spark of inspiration that will continue to burn brightly in the hearts of countless individuals.

As we celebrate your achievements and the success of iCAN 2023, let us be reminded that innovation is a journey, and the path you've embarked upon is filled with endless possibilities. May your passion continue to guide you, and may your inventions pave the way for a brighter and more prosperous world.

Once again, congratulations on your incredible accomplishments, and thank you to the organizers and team for hosting this exceptional event. Together, we forge ahead into a future illuminated by the brilliance of human ingenuity.

With heartfelt congratulations and best wishes,

**Edyta Wołczyk**  
CEO  
IBS GLOBAL, Poland



## MA. CHAT DONNA V. OFILAS / iCAN 2023 Jury Member



On behalf of the Manila Young Inventors Association, we extend our heartfelt congratulations to all the brilliant participants of iCAN 2023!

Your unwavering determination, creativity, and passion for innovation have made this event truly remarkable. Each of your groundbreaking projects has showcased the limitless potential of minds in shaping a better world. We are immensely proud of your achievements and the positive impact you have made on society.

Our sincere appreciation goes out to the dedicated organizers and the entire team for hosting the 8th annual edition of iCAN 2023. Your tireless efforts in providing a platform for inventors to showcase their talents and fostering an environment of collaboration and growth have not gone unnoticed. Together, you have nurtured a community of innovators who will undoubtedly continue to change the world for the better.

As we celebrate your accomplishments, let us all be inspired to keep pushing the boundaries of innovation and making a difference in the world. Congratulations once again and may this be the start of an exciting journey towards a brighter and more inventive future.

With my best wishes,

**Ma. Chat Donna V. Ofilas**  
*Secretary-General*  
Manila Young Inventors Association (MYIA), Philippines



## PROF. AUGUSTIN SEMENESCU / iCAN 2023 Jury Member



Dear Chairman Mr. Moonsuk Chang,

I participated in the first iCAN event as an exhibitor and now as a key member of the iCAN International Jury and I note with pleasure that year after year iCAN has become stronger with more participants from almost the entire globe.

I confess that I had great emotions that a virtual event can be exciting and dynamic, but you managed to overcome all these fears. I greatly appreciated not only the help offered, but especially your proactivity, creativity, and involvement. I didn't feel for a second that you were organizers, on the contrary, I felt you as colleagues, partners, supporters as involved as we are in the development and success of this event. The promptness, responsibility and professionalism shown in the organization

of the iCAN Salon, since the first edition, obliges us and at the same time entitles us to recommend you, with confidence, as partners in the organization of professional Inventions and Innovations salons.

The success of iCAN Inventions and Innovations Salon is mostly related to Mr. Chang's leadership and how he consistently organized himself, I honestly tell all participants about this. On behalf of Rector Mihnea Cosmin COSTOIU, my staff, and my colleagues, I thank your team for all the help offered and for your professionalism. You are truly an inspiring figure with your organizational skills, and I wish you all the best to achieve even greater heights in your life!

Sincerely Yours,

**Augustin SEMENESCU**  
*Professor Habilitatus*  
University POLITEHNICA of Bucharest – Romania



## RADWAN CHOUAIB / Delegation of Lebanon

Dear iCAN 2023 Participants,

Congratulations on your exceptional achievements at the event organized by Toronto International Society of Innovation & Advanced Skills (TISIAS). Your dedication to innovation and advanced skills shines as a beacon of inspiration. Your engagement in invention and entrepreneurship is commendable, driving the boundaries of possibility.



In this dynamic landscape, your contributions carry immense significance. Your inventive spirit and entrepreneurial mindset showcased at iCAN 2023 fuel not only your personal growth but also the advancement of industries and economies. Remember, innovation is the cornerstone of progress.

Your participation in iCAN 2023 signifies your commitment to fostering meaningful change. As you continue your entrepreneurial journey, let the spirit of innovation guide you, propelling your ideas from conception to reality. Therefore, you are also welcome to participate in Beirut International Innovation Show (BIIS 2023) during October organized by the National Association for Science and Research (NASR).

Congratulations once again on your success and dedication. The future you're building through your inventive pursuits is truly inspiring.

Best regards,



**Radwan Chouaib**

*President, National Association for Science and Research (NASR)  
Director, IFIA Focal Point Middle East*



## MOHAMMED A. HUMRAN / Delegation of Yemen

In the name of God, the Most Merciful. I am Mohammad Ali Humran, President of the Union of Arab Academics, Yemen and the Arab Nation. In my name and on behalf of the members of the Executive Office of TUOAA, I extend my heartfelt congratulations and blessings to MR. MOONSUK CHANG / Chairman & Chief Exhibition Officer and all members of Toronto International Society of Innovation & Advanced Skills (TISIAS) who are dedicated to the efforts being made in developing research at iCAN 2023, as well as supporting scientific and assisting youth in the management of inventions, innovations and knowledge strategy in Canada and the world, and on this occasion and in the fourth year in a row, we are happy in the Union of Arab Academics to cooperate and strengthen the future partnership to serve inventors, scientists and researchers in Yemen, the Arab world, and the world.



We hope for more development of scientific research and applications in the future to reduce impacts on the environment. We focus efforts on innovations in sustainable development, investments in the seas and oceans and the development of the blue sector.

My best wishes to all,

**Mohammed A. Humran**

*President*

**The Union of Arab Academics (TUOAA)**



## DR. JUHYEONG KIL / iCAN 2023 Jury Member



Honored inventors, and to everyone present at the venue, I extend my sincere greetings. Today, we gather to usher in the commencement of the 8th iCAN Invention Competition, a place where humanity's boundless creativity and passion for innovation converge. Each invention present here symbolizes our collective faith and hope towards the future of humanity, propelling all of us a step further forward.

Inventors from around the world, despite the confines of limited resources and time, you've transcended boundaries with your innovative creations, leading our lives in a better direction. I express my gratitude and respect for such achievements. The power of invention lies not just in crafting something new, but in addressing prevailing challenges, advancing human progress, and making the world a better place. The change and value each invention brings might seem trivial individually, but collectively, they drive monumental shifts worldwide. The iCAN Invention Competition was initiated to celebrate and support this power of creativity and innovation and has now evolved into one of the world's premier platforms for inventions. Through this event, we'll experience sharing ideas and collaborating to amplify our collective impact. Your inventions have the potential to bring about significant change in the world. I genuinely cheer for the success of all participants!

In conclusion, it's an honor to be part of this splendid festival that reaffirms the limitless potential of humanity. I wholeheartedly congratulate the 8th iCAN Invention Competition and wish a brighter and more creative future for all the inventors. Thank you,

**Juhyeong Kil**  
Chairman



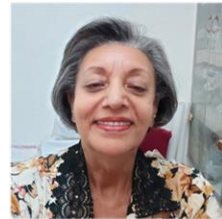
International Invention & Design Leader Awards (IIDLA)



**IIDLA**  
International Invention &  
Design Leader Awards

## DR. VICTORIA RAMZY HABIB / iCAN 2023 Honorary Jury Member

Your activity is the living image that represents the development, growth and progress of invention and innovation in its various aspects and fields. Your activity is characterized by honesty, trueness, and deep awareness, and you exert your efforts with sincerity and perseverance, and with tireless determination that does not know slackness or laziness. You deserve appreciation and respect, and we congratulate you with all our hearts on the success and harmony you have achieved, and on your wonderful and valuable achievements, and we wish you all continued progress and prosperity. We salute in you the spirit of cooperation, understanding, and good dealing with inventors, innovators, and those interested in invention and innovation. Accept our greetings, respect, wishing you all the best.



**Victoria Ramzy Habib**

Honorary iCAN Jury Member Since 2016 ~ Present



## DR. WAGDY RIZK GHALI / iCAN 2023 Honorary Jury Member



Your activity is the living image that represents the development, growth and progress of invention and innovation in its various aspects and fields. Your activity is characterized by honesty, trueness, and deep awareness, and you exert your efforts with sincerity and perseverance, and with tireless determination that does not know slackness or laziness. You deserve appreciation and respect, and we congratulate you with all our hearts on the success and harmony you have achieved, and on your wonderful and valuable achievements, and we wish you all continued progress and prosperity. We salute in you the spirit of cooperation, understanding, and good dealing with inventors, innovators, and those interested in invention and innovation. Accept our greetings, respect, wishing you all the best.

**Wagdy Rizk Ghali**

Honorary iCAN Jury Member Since 2016 ~ Present



## MAJID EL BOUAZZAoui / Delegation of Morocco



This is truly an impressive achievement that reflects your unwavering dedication and passion for the art of inventing and innovation. Your recognition as an award winner at iCAN 2023 highlights your exceptional efforts and contributions in your field of study and profession, and I have no doubt that you will make significant strides in furthering the next steps and missions for perfecting your research and innovation. To the Chairman Moonsuk Chang, your commitment to propelling our culture of innovation and science for the greater good is inspiring. Your presence among our esteemed group of Innovation Ambassadors will undoubtedly amplify your impact and provide valuable opportunities for collaboration and knowledge sharing. I have every confidence that you will continue to excel in your endeavors and contribute to transformative change and iCAN will always develop due to your continuous effort and exceptional passion. Once again, congratulations to everyone on your remarkable accomplishment, and I wish you the very best in your future endeavors. Keep up the excellent work and continue to inspire others with your passion and dedication for invention and innovation. The future of innovation looks brighter with all of you at the forefront.

Respectfully Yours,

**Majid EL BOUAZZAoui**  
President  
OFEED, Morocco



## N. N. W. DOLAWATTA / Delegation of Sri Lanka

iCAN is one of the world's best invention and innovation competitions. Sri Lanka Inventors Commission is closely working with the iCAN Organizing Team over the years. At this moment, Sri Lanka Inventors Commission wish to congratulate for the iCAN 2023 "The 8th Edition" and its notable winners nominated from around the world.

**N. N. W. Dolawatta**  
Director & CEO  
Sri Lanka Inventors Commission (SLIC)



## DR. CATHERINE DEMETRIADES / iCAN 2023 Committee Member



It is my greatest honor as committee member this year to Congratulate the Incredible iCAN Team, all Exceptional Participants and most of all our Hero Moonsuk Chang for uniting us all together in one big Inventors Family for without him we would be isolated individuals without recognition of our world changing soul purpose. I wish to congratulate my fellow inventors who went through their arduous journey to stand in the position of awarded efforts and vision. This is a pioneer program. This endeavor launches all its might against the real sum and substance of creation. The scale of success grasps at heights never before realized by any human being.

Once man has reached his own coveted plateau, he will see another ladder to even higher summits. Reality is, in all actuality, and eternity stretched before mankind with a greater purpose than mere survival at any cost. Service is the rent we pay for the space we take up on this earth and destiny is obligated by Universal Law to conceive to the demands of unwavering faith. Nothing shall stand in the way of our calling. Our future is too important to be held hostage by fear. On the Edge of Light, we will have something to stand on or we will learn to fly.

**Dr. Catherine Demetriades**  
CEO  
CXAI Technologies, Cyprus





## GENERAL INFORMATION

### TITLE OF EVENT

The 8th International Invention Innovation Competition in Canada, iCAN 2023

### MAIN DATE(S)

iCAN 2023 *"The Preliminaries"* (January 15 – July 15)

iCAN 2023 *"The Finals"* (August 26)

### ORGANIZED & BROUGHT TO YOU BY

Toronto International Society of Innovation & Advanced Skills (TISIAS) & INVENTOR SOUND®

### SUPPORTED BY

Innovation Initiative Co-operative Inc. "The Inventors Circle"

International Federation of Inventors' Associations (IFIA)

World Invention Intellectual Property Associations (WIIPA)

### PARTNERS, DELEGATIONS & CONTRIBUTORS

AA2RICH – Canada

Accent on Skills Consulting – Canada

American Society of Sciences and Arts Convergence (ASSAC) – USA

Angolan Association of Inventors and Innovators (A@ii)

Apostolic Vicariate of Calapan Parochial Schools, Diocesan Education Office

Arabian Invention and Innovation Company (AIIC)

Association for the Promotion of Polish Science, Technology And Innovation (SPPNTI)

Association of Polish Inventors and Rationalizers (SPWiR)

Association of Thai Innovation and Invention Promotion (ATIP)

Bright Inventors Association – France

CANADA"IN" Student Exchange Agency – Korea/Canada

CMA Choi Cheung Kok Secondary School (CMACCK) – Hong Kong

CXAI Technologies – Cyprus

Citizen Innovation – Singapore

Creativity Lab for Empowerment and Innovation – Palestine

Eurobusiness-Haller & Haller Pro Inventio Foundation – Poland

Education University of Hong Kong (EDUHK)

Egyptian Council of Creativity Innovation & Protection of Information (ECCIP)

First Institute of Canadian Inventors (FICI)

First Institute of Researchers and Inventors in I.R Iran (FIRI)

German Invention Association (KIT-DEV)

HOW Creative – USA

Holy Center for Research and Practical Sciences (HCRPS COOP-BOD) – Cameroon

Hong Kong Student Invention Patent Program (HKSSIP)

INVENTARIUM SCIENCE – SRD Security, Research & Development – Portugal

Idea Club Oy & Office Beat Oy – Finland

Indian Innovators Association (IIA)

Indonesian Invention and Innovation Promotion Association (INNOPA)

Innovative Business Solutions (IBS)

Instituto Nacional de Defensa de la Competencia y de la Protección de la Propiedad Intelectual (INDECOPI)

International American University (IAU) – USA

International Invention & Design Leader Awards (IIDLA) – Korea

International Invention & Innovation Institute (IIII) – Japan

Inventors Club of Georgia

Inventors College Organization (ICO) – Canada

Inventors' Association of Bosnia and Herzegovina (AIBIH)

Junior Achievement Moldova (JA-Moldova)

Korea University Invention Association (KUIA)

Latin America Society for Science and Technology (SOLACYT)

Lodz University of Technology – Poland

Lucian Blaga University of Sibiu – Romania

Macao Innovation and Invention Association (MIIA)

Macedonian Association „Doza sreka,„

Manila Young Inventors Association (MYIA) – Philippines

National Association for Science and Research (NASR) – Lebanon

National University of Singapore (NUS)

Norton University – Cambodia

Nova Vista Education Inc. – Waterloo, Canada

OFEED – Morocco

Organization for Creativity, Innovation and Invention Promotion (OCIIP) – Nigeria

Ötlet Club 13 Egyesület – Hungary  
 Patent Invention Magazine – Italy  
 Romanian Association for Alternative Technologies Sibiu (A.R.T.A. - SIBIU)  
 Romanian Inventors Forum (FIR)  
 Satit Chula Innovation Society (SCIS) – Thailand  
 Shun Tak Fraternal Association – Yung Yao College – Hong Kong  
 Siava, Ideas Accelerated – Canada  
 Smart Care Tech (SCT) – Africa  
 Sri Lanka Inventors Commission (SLIC)  
 Taiwan Invention Products Promotion Association (TIPPA)  
 Technofest Institute of Technology University (TITU) – Belgium  
 Tunisian Association for the Future of Sciences and Technology (ATAST)  
 Turkish Inventors Association (TÜMMIAD)  
 Uncle Bugs Inventor Academy & ViTrox Academy – Malaysia  
 Union of Arabian Academics (TUOAA) – Yemen  
 Universiti Sains Malaysia (USM)  
 University POLITEHNICA of Bucharest – Romania  
 Vietnam Fund for Supporting Technological Creation (VIFOTEC)  
 Visions in Green – Canada  
 World Genius Convention (WGC) – Japan  
 World Women Inventors & Entrepreneurs Association (WWIEA)  
 Yahya Kemal College (YKC) – Macedonia

## INTERNATIONAL JURY

<b>Bob Huybrechts</b> The Inventors' Circle (CANADA) / Co-Chairman	<b>Howard A. Lim</b> HOW Creative (USA) / Co-Chairman
<b>Mike McFarthing</b> The Inventors' Circle / Vice-Chairman of the Jury	<b>Andrei Victor Sandu</b> Romanian Inventors Forum / Vice-Chairman of the Jury
<b>Guy Langvardt</b> International American University (IAU) – USA	<b>Victor Bautista Díaz</b> Chemist & Researcher of Buenos Aires, Argentina
<b>Winfried Sturm</b> German Invention Association (KIT-DEV)	<b>Dragan Jovanov</b> Macedonian Association „Doza srećja,,
<b>Mi Young Han</b> World Women Inventors & Entrepreneurs Association (WWIEA)	<b>Otto Schmidt</b> Accent on Skills Consulting / Inventors College Organization
<b>Michał Szota</b> Association of Polish Inventors and Rationalizers (SPWiR)	<b>Adam Rylski</b> Lodz University of Technology – Poland
<b>Fernando Maldonado Lopes</b> INVENTARIUM SCIENCE – Portugal	<b>Zoltán Nagy</b> Idea Club 13 Association – Hungary
<b>Amedeo Pozzebon</b> The Inventors' Circle / Deo Innovations	<b>Raymond Lawson</b> The Inventors' Circle – Canada
<b>Masoud Shafaghi</b> Int'l Federation of Inventors' Associations (IFIA)	<b>Babak Khodaparast</b> The First Institute of Canadian Inventors (FICI)
<b>Danny Pak Keong Lai</b> Macao Innovation & Invention Association (MiiA)	<b>Bugs Tan</b> Uncle Bugs Inventor Academy & ViTrox Academy
<b>Victoria Ramzy Habib Attia</b> Invention Education Specialist	<b>Wagdy Rizk Ghali Rizk</b> Invention Education Specialist
<b>Lemon Hok Ming Kwan</b> The Education University of Hong Kong	<b>Leo D. W. Kim</b> CANADA*IN* Student Exchange Agency – Toronto, CA
<b>Aurel Mihail Titu</b> Lucian Blaga University of Sibiu	<b>Augustin Semenescu</b> University Politehnica of Bucharest
<b>Majid El Bouzazzaoui</b> OFEED – Morocco	<b>Radwan Chouaib</b> National Association for Science and Research (NASR)
<b>Juhyeong Kil</b> International Invention & Design Leader Awards (IIDLA)	<b>Jagadese J. Vittal</b> National University of Singapore (NUS)
<b>Gihan Farahat</b> Egyptian Council of Creativity Innovation Protection (ECCIP)	<b>Husein Hujic</b> Inventors' Association of Bosnia and Herzegovina
<b>Mohd Remy Rozainy Mohd Arif Zainol</b> Universiti Sains Malaysia (USM)	<b>Michael Esuong</b> Organizer of the Africa Invention and Innovation Expo
<b>Ma. Chat Donna V. Ofilas</b> Manila Young Inventors Association (MYIA)	<b>Lau Sai Chong</b> Hong Kong Student Invention Patent Program
<b>Mithona Luy</b> Norton University – Cambodia	<b>Angelita Elliott</b> Visions in Green – Canada

## ABOUT iCAN 2023 “THE 8<sup>TH</sup> ANNUAL EDITION”

**International Invention Innovation Competition in Canada, iCAN** is the world-recognized premier event of Canada for inventors which has shown continuous growth and improvement since its first edition in 2016 through 2022 with each year breaking the previous year's records for the total number of participants, countries and collaborating organizations. Last 7 editions of iCAN from 2016–2022 featured participants from **95 different countries around the world** including **North, Central & South Americas, Asia, Europe, Africa, the Middle East, and Oceania** which elevated and redefined iCAN to be the true global stage for merging worldwide creativity and innovation in Toronto, Canada.

**The 8th International Invention Innovation Competition in Canada, iCAN 2023** will be held online and it is our honour to once again invite you to join us and share your great ideas, make an impact, and be recognized and awarded for your excellence in executing outstanding creativity & innovation in the central multicultural mainstream of Canada. iCAN is a colossal confluence of many favourable programs: **invention competition, keynote speakers' presentations, The Finals Movie and the iCAN Awards.** Inventors, innovators, students, professors, researchers, scientists, designers, entrepreneurs, and anyone with spectacular ideas are eligible to apply to iCAN 2023 and participate in all event programs above and receive all benefits of participation.

## THE PRELIMINARIES

**iCAN 2023 “The Preliminaries”** was held open for a 6-month period from January 15 – July 15 where applicants registered to the competition by submitting their application forms by email. The Preliminaries served as the selection process for **Gold, Silver and Bronze Medal Award** Winners based on the jury's screen evaluation of the text/visual contents that the applicants have provided in their application forms to express their projects. Following the initial evaluation in the Preliminaries, the applicants proceeded to the optional Finals to further articulate their ideas through creative video presentations.

## THE FINALS

**iCAN 2023 “The Finals”** is the advanced phase of the Preliminaries as the final stage of the competition where the Finalists are required to present their projects' video presentations for the jury & organizing committee members' assessment for the opportunity to win the **iCAN 2023 “The Finals” Awards.**

The Finals is a privileged stage that is exclusively offered for those who have passed the competition Preliminaries stage of the event. All Finalists who decide to proceed to the Finals can enjoy the benefits of the programs offered below. This year's **iCAN 2023 “The Finals”** will be progressed virtually through content uploads of the following items online on August 26<sup>th</sup>:

### iCAN 2023 “THE FINALS” ONLINE PROGRAMS

August 26<sup>th</sup> @ 10:00AM (EST) – Toronto, Canada on [www.tisias.org/ican-finals2023](http://www.tisias.org/ican-finals2023)

CONTENT UPLOAD I	iCAN 2023 “The Finals” Award Winners Announcement
CONTENT UPLOAD II	iCAN 2023 Keynote Speaker's Lecture (by Howard A. Lim)
CONTENT UPLOAD III	iCAN 2023 “The Finals” Movie Showcase
CONTENT UPLOAD IV	iCAN 2023 Official Catalogue Online

## AWARDS

\* iCAN 2023 “The 8<sup>th</sup> Edition” features nomination of the following awards for the Finalists \*

### iCAN 2023 “The Finals”

THE GRAND PRIZE		THE SEMI-GRAND PRIZE	
TOP 10 BEST INVENTION AWARDS		TOP 20 BEST INVENTION AWARDS	
BEST YOUNG INVENTOR AWARDS		BEST WOMAN INVENTOR AWARDS	
BEST INVENTION VIDEO AWARDS		BEST INVENTION DESIGN AWARDS	
ORGANIZER'S CHOICE AWARDS		JURY'S CHOICE AWARDS	
CANADIAN SPECIAL AWARDS		INTERNATIONAL SPECIAL AWARDS	
ACHIEVEMENT AWARDS	AWARD OF EXCELLENCE	OTHER RECOGNITIONS	

### iCAN 2023 “The Preliminaries”

GOLD MEDAL AWARDS	SILVER MEDAL AWARDS	BRONZE MEDAL AWARDS
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# The 8th International Invention Innovation Competition in Canada, iCAN 2023

ORGANIZED & FEATURED BY LOCALLY & INTERNATIONALLY SUPPORTED BY



## INTERNATIONAL DELEGATIONS • PARTNERS • SUPPORTERS



# 50 PARTICIPATING COUNTRIES & REGIONS

The 8<sup>th</sup> International Invention Innovation Competition in Canada, iCAN 2023



- AFGHANISTAN
- ALGERIA
- ARGENTINA
- AZERBAIJAN
- BELGIUM
- BOSNIA & HERZEGOVINA
- BRUNEI
- BULGARIA
- CAMBODIA
- CAMEROON
- CANADA
- CHINA
- EGYPT
- GEORGIA
- HONG KONG
- HUNGARY
- INDONESIA
- IRAN
- JAPAN
- KOREA
- LEBANON
- MACAO
- MACEDONIA
- MALAYSIA
- MOLDOVA
- MOROCCO
- NETHERLANDS
- PERU
- PHILIPPINES
- POLAND
- QATAR
- ROMANIA
- RUSSIA
- SAUDI ARABIA
- SINGAPORE
- SPAIN
- SRI LANKA
- SUDAN
- SWEDEN
- SYRIA
- TAIWAN
- THAILAND
- TUNISIA
- TURKEY
- UKRAINE
- UNITED ARAB EMIRATES
- UNITED KINGDOM
- UNITED STATES
- UZBEKISTAN
- VIETNAM



## LIST OF EXHIBITS

*50 Countries in Participation for iCAN 2023 "The 8<sup>th</sup> Edition"*

NO.	COUNTRY	PAGE(S)
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2	ALGERIA	21
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47	U.K.	99
48	U.S.A.	99
49	UZBEKISTAN	100
50	VIETNAM	100-103

## AFGHANISTAN

AF-01	NAME(S)	Jawad Fayaz
ORGANIZATION		N/A
TITLE OF ENTRY		<b>Metal Multi Wheels Car</b>
<p>A car with eight metal and rubber-coated wheels and flexible springs would be efficient, comfortable, and eco-friendly. It can convert the energy generated by the shocks into usable energy. This car has several unique features. Firstly, it has multiple wheels, with options of six, eight or more. The metal wheels are covered with a layer of rubber, making them sturdy and puncture resistant. Secondly, the soft and flexible shock absorbers help to reduce the impact of road bumps on passengers. Moreover, the shock absorbers and suspension system convert some of the shocks into usable energy.</p>		

AF-02	NAME(S)	Jawad Fayaz
ORGANIZATION		N/A
TITLE OF ENTRY		<b>Room Solar Heater</b>
<p>It is a type of solar collector with two parts: an outdoor and indoor unit. The outdoor unit collects solar energy and uses it to heat water, which is then transferred to the indoor unit via a solar pump. The indoor unit consists of a radiator and a solar fan. The radiator absorbs heat from the hot water and the solar fan circulates the hot air from the radiator into the room. This solar collector has two parts: an outdoor unit that heats water with solar energy, and an indoor unit with a radiator and solar fan that circulates hot air into the room. In Cold days.</p>		

## ALGERIA

DZ-01	NAME(S)	EL MEHADI AMIN
ORGANIZATION		N/A
TITLE OF ENTRY		<b>Urine trace detector in diapers</b>
<p>This invention is a probe for diapers intended for the disabled, children, autistic patients, paraplegics, children with chronic diabetes, and the disabled elderly who are unable to urinate on their own (urination). The device is a bell connected to a p-volt battery linked to a urine electrolysis cell made of silicon material located in the heart of the diapers. When the urine reaches the cell, the buzzer to warn of the need to change diapers to avoid diaper rash.</p>		

DZ-02	NAME(S)	BENTERKI MOHAMED SADEK
ORGANIZATION		N/A
TITLE OF ENTRY		<b>Mécanisme de propulsion de véhicules à propulsion humaine par des leviers qui pivotent sur un axe horizontal et/ou deux axes verticaux parallèles et symétriques</b>
<p>The present invention relates to a vehicle propulsion mechanism comprising a frame and levers, clutches (freewheel) and gears which converts a reciprocating pushing motion into a circular motion which drives anything requiring motive power, with at least a user in a vertical position (standing) and/or a user in a horizontal position (sitting).</p>		

## ARGENTINA

AR-01	NAME(S)	Victor Bautista Díaz
ORGANIZATION		N/A
TITLE OF ENTRY		<b>Organic fertilizer containing oligosaccharins coming from brewer's spent grain (BSG)</b>
<p>Conversion of brewers spent grain (BSG) by a cheap and facile physico-chemical and biochemical methods in organic fertilizers containing oligosaccharides (oligosaccharins) as relevant constituents for the utilization on crops, so avoiding the indiscriminate discard of this waste on environment, fact that mainly occurs in peripheral countries.</p>		

## AZERBAIJAN

AZ-01	NAME(S)	Aydan Musayeva / Leyla Maharramova
ORGANIZATION		Landau School
TITLE OF ENTRY		<b>UNLEASHING THE FORCE OF NATURE: NOVEL ECO-FRIENDLY FLOCCULANT FOR PRETREATMENT TO ENHANCE SAND FILTRATION AND EFFICIENTLY REMOVAL OF HEAVY METALS FROM WASTEWATER</b>
<p>This project explores the potential of using pomegranate peels and chitosan as a natural flocculant for pre-treating wastewater to enhance sand filtration and remove heavy metals (Ni<sup>2+</sup>, Cu<sup>2+</sup>, and Zn<sup>2+</sup>) effectively. Active compounds like tannin are extracted and purified from the pomegranate peels, then chitosan and tannin are modified to create a novel flocculant. The synthesized flocculant is characterized, and its performance is evaluated through laboratory experiments, analyzing factors such as dosage, pH, and heavy metal concentration. The results of this project provide a safe, easy, eco-friendly, and cheap method of wastewater treatment.</p>		

## BELGIUM

<b>BE-01</b>	<b>NAME(S)</b>	<b>Dr. BEHZAD JAYBASHI / Dr Roya Hemmatpour / Prof. Mehrdad Fojlaley</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>Body Detox Device</b>
<p>Detoxification device is basically to increase energy (physically and mentally), vitality and stamina while cleansing the body of toxins, chemicals, radiation, pollution, artificial substances and other foreign substances that are trapped.</p>		

<b>BE-02</b>	<b>NAME(S)</b>	<b>Prof. Ahmad Barari Amirkola / Mohammadali Rajabi Torbehbar / Alireza Khalighi / Amirhossein Rajabi Torbehbar / Amir Khodadadi Parashkough / Mahmoud Daneshfar / Amirmohammad Khodadadi Parashkough / Ali Farzpourmachiani / Salar Basiri / Mehdi Farzpourmachiani / Simin Naghibi Masouleh / University of Ontario Institute of Technology</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>SMART FENCE</b>
<p>A system for improving sustainable development to maintain citizen's civil rights. Employing such methods and techniques, it is possible to operate and control a system for protecting lives of and increase the safety level for users and citizens from a control office. The control office may be located at any place and at any distance from the smart fence system.</p>		

<b>BE-03</b>	<b>NAME(S)</b>	<b>Prof. Hassan Zamanian / Vahid Cheraghi / Morteza Toorani / Ali Tavalaeian Abdullah Mashayekhamiri / Dr. Mehdi Farzpourmachiani / Iranian Research Organization for Science and Technology</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>Polymer floor covering and wall covering using waste of stone industries distinguished</b>
<p>Covering surfaces with a continuous polymer chain, along with recycled aggregate particles from stone mines, serves multiple purposes. Firstly, it helps minimize waste generated by these industries. Additionally, this technique enables the creation of various types of coatings that exhibit resistance to acidic and alkaline environments.</p>		

<b>BE-04</b>	<b>NAME(S)</b>	<b>Dr. Arash Momeni</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>Home physiotherapy device (magnet therapy)</b>
<p>The main source of water is mountain rivers that flow into rivers and eventually into the sea. Water is in contact with both land and groundwater as it passes through the sea. As water goes underground) Many rivers and streams pass underground (contact with the earth's magnetic field, transfer a magnetic charge to the water and make it magnetic.</p>		

<b>BE-05</b>	<b>NAME(S)</b>	<b>Dr. Abolfazl Moradi</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>Exir plus herbal tablet</b>
<p>This medicine was formulated and made according to the needs of society during the covid19 epidemic, and plants effective in raising the body's immune system and effective in strengthening blood circulation and strengthening the lungs have been used. This drug is used without any chemicals or drugs as a drug that boosts the body's immune system</p>		

<b>BE-06</b>	<b>NAME(S)</b>	<b>Dr. Hamideh Atefipour</b>
<b>ORGANIZATION</b>		TITU INTERNATIONAL UNIVERSITY
<b>TITLE OF ENTRY</b>		<b>Tiam Infertility Pack and Removal of Cysts and Fibroids</b>
<p>Elimination of infertility in women and men, Removal of Cysts and Fibroids, Removal of uterine and pelvic infections, Eliminate ovarian laziness and strong sperm production. It is made of several products.</p> <ol style="list-style-type: none"> <li>1. Mariana oil: It is made from a plant that is extracted from 7 types of oil and contains female hormones. This product is astringent and disinfectant.</li> <li>2. Arugula: menstruation: It destroys all the cysts in the uterus, ovaries, and breasts. It withdraws ovals into fragments and generates them into whole delegation, and it generates estrogen and testosterone and eggs.</li> <li>3. Makapower: It is made of 33 plants that increases the number of y-type sperms, male fertility, sperm mobility, relieve coldness, strengthen the forward sperm jerk and increase sexual power.</li> <li>4. Love story herbal capsule: strengthening the main organs of the body and strengthening the stomach, uterus and kidneys, a strong sexual stimulant for women and a cure for.</li> </ol>		



<b>BE-07</b>	<b>NAME(S)</b>	<b>Dr. Lida Hedari Moghadam</b>
<b>ORGANIZATION</b>	TITU INTERNATIONAL UNIVERSITY	
<b>TITLE OF ENTRY</b>	<b>Immune Pro Max Tablet</b>	
<p>This medicine is formulated and produced using effective plants to strengthen the immune system, improve blood circulation and strengthen the lungs. This drug is used as an immune system booster without any chemicals or drugs.</p>		

<b>BE-08</b>	<b>NAME(S)</b>	<b>Dr. Majid Rahimi / Dr. Behzad Jaybashi</b>
<b>ORGANIZATION</b>	TITU INTERNATIONAL UNIVERSITY	
<b>TITLE OF ENTRY</b>	<b>Anxiety and Stress Tablets</b>	
<p>Multiple factors contribute to the development of anxiety and stress in individuals, with the most significant ones including genetic background, high-stress environment, past traumas, brain chemistry, and environmental factors. Stress and panic have a catalyst that becomes active with a specific stimulus. By employing techniques in herbal processing and panic medications, which have played a role in the production of this product, we have been able to address the issue of anxiety and stress.</p>		

<b>BE-09</b>	<b>NAME(S)</b>	<b>Prof.Dr.Mehrdad Fojlaley / Dr Ehsan Mirzaeifard / Zohreh Jahanpanah / Mohammad Jafar Eslami Zaree / Behrouz Babaei Seziroud / Amir Hossein Aghamohammadi</b>
<b>ORGANIZATION</b>	TITU INTERNATIONAL UNIVERSITY	
<b>TITLE OF ENTRY</b>	<b>Anti freezing Device in garden and preventing temperature drift by infrared laser</b>	
<p>The solution for protecting the plants from frost is to trap the reflected sun's heat after it hits the surface of the earth. With laser radiation, this device creates a curtain to the height of the trees and maintains warm air between the tree and the earth as same as atmosphere.</p>		

## BOSNIA AND HERZEGOVINA

<b>BA-01</b>	<b>NAME(S)</b>	<b>Elma SELIMBASIC</b>
<b>ORGANIZATION</b>	Inventors Association of Bosnia and Herzegovina	
<b>TITLE OF ENTRY</b>	<b>REMOTE ANIMAL TREATMENT AND PROTECTION DEVICE</b>	
<p>The invention presented is a device designed for the remote treatment and protection of animals. Currently, veterinarians and wildlife experts often resort to using handheld blowers or air weapons to administer injections, posing risks to both humans and animals due to close-proximity and potential stampedes. This device, when mounted on a drone, transforms it into a remote monitoring and treatment tool. It consists of air or gas tanks, pipes, arrow storage tanks, and remote-triggered arrow mechanisms. The integrated processor enables wireless transmission and command reception, facilitating animal identification, targeted injection, and remote control. Utilizing advanced technologies such as 4G, satellite internet, and Wi-Fi, users can manage the device from any location, offering unlimited range. The lightweight, aerodynamic design ensures minimal air resistance during flight, enhancing its efficiency. This innovative device enables safe, precise, and remote treatment of animals, facilitating medication administration, tracking, and microchip attachment without causing harm or distress.</p>		

<b>BA-02</b>	<b>NAME(S)</b>	<b>Husnija KAPIC</b>
<b>ORGANIZATION</b>	Inventors Association of Bosnia and Herzegovina	
<b>TITLE OF ENTRY</b>	<b>MILL FOR RECYCLING OF FOAM MATERIALS' WASTES</b>	
<p>The mill for recycling foam materials' wastes is designed for the efficient recycling of foam and porous materials like Styrofoam, sponge, and polystyrene articles. Its primary innovative feature lies in its precise milling capability, which produces granulates of desired sizes that can be easily used in the production of various products such as plates, cubes, and bulbs. The technical novelty of the mill is attributed to the presence of an eccentric colander equipped with vertical and horizontal blockers. These blockers serve a dual function of crushing the milled material into programmed granulate sizes and packaging it in bags and boxes while preventing dust scattering. The inventor-producer offers customizable mill dimensions and different centrifuge speeds to meet specific requirements.</p>		

<b>BA-03</b>	<b>NAME(S)</b>	<b>Armin HUJIC</b>
<b>ORGANIZATION</b>	Inventors Association of Bosnia and Herzegovina	
<b>TITLE OF ENTRY</b>	<b>Self-adjusting water heating tank</b>	
<p>The proposed self-adjusting water heating tank features a circular flowing plate that moves back and forth along the tank, effectively leveling and maintaining the temperature at the desired degree. By utilizing Hall sensors to regulate the exchange of cold and heated water temperatures, the tank functions as if it has two boilers, ensuring a consistently constant water temperature. This innovative design offers several advantages, including improved heating efficiency, reduced electric power consumption, and a more compact tank size. Overall, this solution presents a promising approach to enhance water heating systems.</p>		

## BRUNEI

BN-01	NAME(S)	Prof. Dr. Ahmed Osumanu Haruna / Dr. Liza Nuriati Lim Kim Choo / Dr. Latifah Binti Omar / Dr. Adiza Alhassan Musah / Assoc. Prof. Dr. Rose Abdullah / Ng Ji Feng / Dr. Syahirah Binti Haji Shahlehi
ORGANIZATION		Universiti Islam Sultan Sharif Ali (UNISSA) and Universiti Putra Malaysia (UPM)
TITLE OF ENTRY		Nature Inspired Solutions for Healthy Soils and Healthy Food
<p>Our innovation is a promising approach for soil health restoration and high crop yield to increase farmers' income because the high sources of organic based nitrogen and carbon waste materials were reacted to produce organic amendments which are able to provide essential nutrients, neutralize soil acidity, detoxify aluminum and iron toxicity, and reduce leaching of nutrients to conserve the environment. Our innovation has been proven to increase the yields of rice (from four to five t ha<sup>-1</sup> to 10 to 12 t ha<sup>-1</sup>), pineapple (from 65.4 to 76.3 t ha<sup>-1</sup>), and papaya (from 30 to 62.4 t ha<sup>-1</sup>). This suggests that our innovation can increase crop yield, yield quality, and farmers' income.</p>		

BN-02	NAME(S)	Zulfah Syaquina Hj Muhamad / Fathinah Uzma binti Noorazmi / Siti Nur Ameerah Syahirah binti Hj Azis / Siti Nur Rabi'atul Adawiah binti Hj Abu Bakar / Nor Surilawana Sulaiman
ORGANIZATION		Universiti Islam Sultan Sharif Ali
TITLE OF ENTRY		"Ali Pow Pow": An Explosion Flavour of Baby Food Seasonings for Your Little Ones
<p>The halal industry has experienced significant growth, particularly in the food sector. Brunei, a majority Islamic population country, has potential in the halal global market. This invention highlights product innovations for infants aged 6-7 months and above, including sodium-free baby food seasonings and mirepoix-based alternatives. The limited number of Halal baby food products in Brunei serves as a unique selling point, catering to the Muslim concept of Halalan Thayyiban. Another motivation of this creation is to provide salt and sodium chloride substitute seasonings so that kids can still get the nourishment they need.</p>		

## BULGARIA

BG-01	NAME(S)	Vladislava Ivanova / Yordanka Trifonova / Olya Surleva / Gergana Ivanova / Victoria Penkova
ORGANIZATION		University of Chemical Technology and Metallurgy
TITLE OF ENTRY		SYNTHESIS AND CHARACTERIZATION OF TERNARY CHALCOGENIDE SYSTEMS
<p>The primary objective of this study is to investigate the physicochemical properties and explore the composition-property relationship in Ge-Te-In chalcogenide glasses. These glasses possess unique optical and electrical properties that find diverse industrial applications, including but not limited to phase change memory, waveguides, optical fibers, and sensors. Through melt quenching technique, we successfully synthesized Te-containing chalcogenide glasses. Experimental measurements determined density and investigated properties such as coordination number, compactness, molar volume, and free volume. The analysis of the experimental data provides valuable insights into the influence of indium content on the studied glasses' physicochemical properties.</p>		

## CAMBODIA

KH-01	NAME(S)	Mr. Chan Mithona / Ms. Poly Pheary / Mr. Leang Sengthai / Ms. Ratha Sophanith / Ms. Poly Pheanin
ORGANIZATION		Norton University
TITLE OF ENTRY		AUTO PLASTIC BOTTLE BANK
<p>The plastic bottle is very useful in everyday life and make life so much easier, but the environmental impact they produce is unsustainable. The large number of plastic bottles we send to landfills and oceans has become a burden on the environment. Plastic bottle has affected the environment such as climate change, ocean pollution, Greenhouse gas emissions, drain blockage, human health etc. Hence, our team created a project called Auto Plastic Bottle Bank that is easy for controlling and change cashback while the user inserts the plastic bottle into our system.</p>		

KH-02	NAME(S)	Mr. Sek Socheat / Mr. Oeun Panha / Mr. Hang Senghong / Mr. Sem Dararoth Panha / Mr. Tru Pouyy
ORGANIZATION		Norton University
TITLE OF ENTRY		E-COMMERCE SYSTEM: MULTI-VENDORS ONLINE
<p>E-commerce System: Multi-Vendors Online is a modern web application which is built using new technologies. It is mainly focused on e-commerce and online shopping. On the other hand, it allows users to browse so many types of products they want to purchase over the internet. For example, physical products, services, digital products, electronics, hardware, baby products, beauty products and a lot more. Through this e-commerce website, users can process orders, accept online payments, ship and so on. Moreover, we also provide users to be vendors. This means that they can be the owner of their shops and post about the products they want to sell to their consumers as well.</p>		

<b>KH-03</b>	<b>NAME(S)</b>	<b>Dr. So Sokuntheary / Mr. Chuop Sopheap / Mr. Tol Sokmean</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>Home of the Dead</b>	
<p>Stupa or conical pile is worshipped site or a crematory of deserving respect men such as departed ones. Today we see many stas in India that are very old and are very popular in India. Evolutions of architectural style of stupas in Cambodia, the architect who built the religious sites and stupas in ancient times were the scholars who knew deeply about concepts of Theravada Buddhism that were meaningful and profoundly admired. No matter how fast the technique, the stupa still exists. Not only that, stupas also play an important role in dedicating, preserving or commemorating gratitude etc. The concept of creating stupas have given people the idea that Our life does not last long for thousands of years, births and deaths are common. So, we should do more good deeds. What we can tolerate, we should tolerate each other. Sometimes we can determine the date of birth, but we cannot determine the date of death even the time and place. Death does not depend on caste, color, age, sex, place, religion, or nationality, it happens to normal living things. Born, old age, sickness and death are normal for people. the word death occurs to all beings.</p>		

<b>KH-04</b>	<b>NAME(S)</b>	<b>Mr. Ung Yean / Mr. Luy Mithona / Mr. Long David / Mr. Chheng Hak Chhorvorn</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>NU PAL HELP PAL</b>	
<p>Pals Help Pals mobile application is a potential app that connects mentors and individuals around the world so they can learn from one another with our amazing features. Users can become tutors to teach in their own classes or be one of the students to learn their desired subjects. Pals Help Pals provides real-time. In-App Chat that helps students and tutors interact more easily. Additionally, we encourage and help our users to learn more conveniently by creating a function for each user to share their cultures, resources, e-books, as well as university/school events or workshops around the world.</p>		

<b>KH-05</b>	<b>NAME(S)</b>	<b>Mr. Luy Mithona / Mr. Chao Seavthinh / Mr. Ly Menggoun</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>NU STUDENT MANAGEMENT</b>	
<p>For this project, we create it for our school to manage all of the students and it's convenient to check Students' information such as ID, Result, Department, and Examination. And another way their parents and check their attendance is by login into their accounts and finding the information.</p>		

<b>KH-06</b>	<b>NAME(S)</b>	<b>Mr. Luy Mithona / Mrs. Keo Lakhena / Ms. Huy Mouyheng / Ms. Map Leangheng</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>NU STUDENT PROFILE</b>	
<p>We are hoping to open more doors for Norton University students and alumni via "NU Student Profile". This website allows students to showcase their dedicated work, assignment, achievement, and fruit of labor during their journey in the built-in CV feature. Through the 2nd feature "Post Announcement" NU could post relatively new jobs and opportunities to ensure their students are up-to-date with the company that is interested in hiring our students. Moreover, offering students to become "service providers" allows them to increase their chances of exposing their skills and service to employers.</p>		

<b>KH-07</b>	<b>NAME(S)</b>	<b>Dr. So Sokuntheary / Mr. Chuop Sopheap / Mr. Ung Chisreng / Mr. Ly Sunleng / Mr. Vong Chakravuth</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>NU THE BOOKS SHELVES OF NEW TECHNOLOGY</b>	
<p>NU books shelves are an automated system with tablet displays built in with bookshelves for searching any books. The system on the tablet will lights up at the bookstall (or book installed place) when searching information or name of the book or hint of any books.</p>		

<b>KH-08</b>	<b>NAME(S)</b>	<b>Dr. So Sokuntheary / Mr. Chuop Sopheap / Mr. Vong Chakravuth / Mr. Ly Chandavin / Ms. Horn Seavmey</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>PHNOM PENH SMART BUS STOP</b>	
<p>Phnom Penh smart bus stop info board is designed to provide an extra level of convenience for multi-generational and users with disabilities. With new technology equipment that haven't existed in Cambodia, the user will completely avoid complication use, time and budget saving to be contributed on clean street and environment. Especially, disable user will easy to use and feel completely the same as regular user.</p>		

<b>KH-09</b>	<b>NAME(S)</b>	<b>Dr. So Sokuntheary / Mr. Chuop Sopheap / Mr. Mao Sothea / Mr. Chhuon Virak / Mr. Lim Thiden</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>SMART ELECTRIC MINI BUS</b>	
Due to the growth of national and international tourists, especially Cambodia citizen need to travel to study, go to workplace from one area to another and travel in the city is all their needed. For a convenience in our city, we have an idea for using Smart Electric Mini-Bus.		

<b>KH-10</b>	<b>NAME(S)</b>	<b>Mr. Chan Mithona / Ms. Poly Pheary / Mr. Hach Phanong / Ms. Srun Muoykieng / Mr. Oeun Thea</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>Smart Hydroponic System</b>	
Hydroponics is the practice of growing plants using only water, nutrients, and a growing medium. The idea behind hydroponics is to remove as many barriers as possible between a plant's roots and the water, oxygen and nutrients it needs to grow (and thrive). Some of the hydroponics is a small garden for homemade and the owner control by manually. Hence, our team designed a project called Smart Hydroponic System to provide the ability to easily grow and sustain the plants and it will be working as automatically.		

<b>KH-11</b>	<b>NAME(S)</b>	<b>Mr. Chan Mithona / Mr. Sambath Vibol / Mr. Yet Chanseyha / Ms. Poly Pheary</b>
<b>ORGANIZATION</b>	Norton University	
<b>TITLE OF ENTRY</b>	<b>SMART PAYMENT SYSTEM FOR HIGHWAYS IN CAMBODIA</b>	
Cambodia is progressing on many infrastructures including highway roads, buildings, technology, and industrial or modern medical equipment. Due to Cambodia being in an upgrading period, the highway road is charged to Cambodian people when they cross the road. The price for charging is depending on the type of car and the charging system will be used by the traditional system by using people in the control center for controlling and managing on the gate. Hence, we would like to create a project called Smart Payment System for Highway in Cambodia without the need people for controlling on the gate.		

## CAMEROON

<b>CM-01</b>	<b>NAME(S)</b>	<b>DEKOU MOUAFU SOREIL KELLY</b>
<b>ORGANIZATION</b>	ACSILOD	
<b>TITLE OF ENTRY</b>	<b>A charcoal incubator</b>	
built a charcoal incubator. A simple and less expensive incubator to quickly hatch fertilized eggs and facilitate the work of breeders. Many breeders do not always have enough money to afford an electric incubator or a kerosene incubator		

<b>CM-02</b>	<b>NAME(S)</b>	<b>WAM ELVIS MBVIUGEH</b>
<b>ORGANIZATION</b>	HOLY CENTER FOR RESEARCH AND PRACTICAL SCIENCES	
<b>TITLE OF ENTRY</b>	<b>PLASTIC WASTE RECYCLING PLANT</b>	
"Waste plastic recycling plant" is a concept and formula in the technological world; aimed at transforming waste plastic and metals into useful products and used as an apparatus for fast cooking and to facilitate the cracking of stones for masonry works. This creation will greatly help for the protection of the environment; for other generations and for substantial agriculture and to improve on soil fertility against „famine“. The Author laid down some principles which richly increased the performance of the machine.		

<b>CM-03</b>	<b>NAME(S)</b>	<b>TCHAKOUTE COLBERT</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Intelligent device for automatic switch-off of cooking appliances in the event of prolonged absence of the user from the cooking zone</b>	
The present invention relates to an intelligent device for switching off a cooking appliance whenever the user is absent from the cooking area or in front of the cooking appliance for an extended period of time. In order to avoid certain risks associated with forgetting to turn off the appliance (burns or charring of the food or its dish, production of smoke or additional fumes in a dwelling).		

## CANADA

<b>CA-01</b>	<b>NAME(S)</b>	<b>Glen W J Hammond</b>
<b>ORGANIZATION</b>	Innovation Initiative Co-operative Inc. "The Inventors Circle"	
<b>TITLE OF ENTRY</b>	<b>Hotrock Griddle</b>	
This creative cooking device is an improvement to current griddles, indirect cooker and cooking rack devices known to the cooking industry and more specifically the outdoor cooking industry. More specifically it is a combination of all three while allowing for more versatile and creative ways of cooking food at barbecues and open campfires. It can also be used as a warming device to keep food warm and or a cooling rack. Commercial and industrial applications are another area of use for this device in the cooking industry.		

<b>CA-02</b>	<b>NAME(S)</b>	<b>Ke Xin Xu</b>
<b>ORGANIZATION</b>	University of Toronto Schools	
<b>TITLE OF ENTRY</b>	<b>Trash Compactor</b>	
<p>Introducing the innovative trash compactor, a retrofit solution for foot pedal trash cans. Designed to address the issue of low space utilization and excessive use of garbage bags for bulky household and office waste. The trash compactor features a 3.5 cm diameter hole in the center of the lid and a circular compression plate made of cardboard measuring 19 cm in diameter. The compression plate is equipped with magnets for easy attachment to the inside of the lid. Additionally, a 40 cm long circular wooden stick with hook and loop strips is used to press and lift the compression plate, allowing it to be securely attached when not in use. The wooden stick can also be conveniently attached to the side of the trash can. With the trash compactor, waste can be efficiently compressed, optimizing space utilization and promoting environmental sustainability.</p>		

<b>CA-03</b>	<b>NAME(S)</b>	<b>IMUTISM INC.</b>
<b>ORGANIZATION</b>	IMUTISM INC.	
<b>TITLE OF ENTRY</b>	<b>Software Application: Methods for providing a virtual environment for training children with Autism Spectron Disorder</b>	
<p>There is provided a method comprising: receiving, by a selection engine from a user device, data indicative of information associated with a target individual having an autism spectrum disorder (ASD), the data comprising an age of the target individual, and a health condition of the target individual; processing the data to select a digital module; and providing to the user device, access to the digital module.</p>		

<b>CA-04</b>	<b>NAME(S)</b>	<b>CALMICA INC.</b>
<b>ORGANIZATION</b>	CALMICA INC.	
<b>TITLE OF ENTRY</b>	<b>Application software for providing Virtual Reality content as a Pain Management Tool</b>	
<p>A method comprising: receiving, from a user device, a request to access one or more of a plurality of VR content items; authenticating the request; determining a selected VR content item from the plurality of VR content items; and providing content data corresponding to the selected VR content item.</p>		

<b>CA-05</b>	<b>NAME(S)</b>	<b>Shahab POUR MOHAMMAD MATOURI / Payman KHOORPOUR</b>
<b>ORGANIZATION</b>	VRONTECH INC.	
<b>TITLE OF ENTRY</b>	<b>Methods and Systems for providing Occupational Health and Safety (OHS) Virtual Reality training modules</b>	
<p>A method comprising: providing, by a virtual reality (VR) training engine, to a first device associated with a first user, a list of one or more VR training modules that are accessible on an online platform; Receiving, by the VR training engine from the first device, selection data indicative of a selection of a target VR training module from the one or more VR training modules; receiving, by the VR training engine from the first device, identification data indicative of an identification of a second user; assigning, by the VR training engine, based on the selection data and the identification data, the target VR training module to the second user; receiving, by the VR training engine from a second device associated with the second user, a request to access the target VR training module; and providing, by the VR training engine to a VR terminal, based on the request, VR training data corresponding to the target VR training module.</p>		

<b>CA-06</b>	<b>NAME(S)</b>	<b>Farshid KHODADADIAN ASHTIYANI / Saeed JAMALI</b>
<b>ORGANIZATION</b>	DEBICAN INC.	
<b>TITLE OF ENTRY</b>	<b>METHODS AND SYSTEMS FOR PROVIDING A VIRTUAL ENVIRONMENT FOR CHILDREN TO LEARN MONEY MANAGEMENT</b>	
<p>An application software consisting of a method that comprises a digital wallet, a bank account, a payment card, or a bank card. and receiving a set of deliverables based on the age of the user, task data associated with an assignable task, and receiving the other input, transferring the given reward from the second user account to the first user account, and providing an option for charity donation; receiving another input indicative of an interest of the first user to donate a given reward to a charity.</p>		

<b>CA-07</b>	<b>NAME(S)</b>	<b>Mohammad Hossein Ramani / Javad Sadri / Farid Jafarian</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>“ChillPower: A Renewable Electricity Generator Harnessing Ambient Cold”</b>	
<p>ChillPower is an innovative renewable power plant that leverages the cold environment to generate stable and cost-effective electricity. By utilizing advanced technique, it taps into ambient cold energy to produce sustainable power. With its compact design, ChillPower offers a space-efficient solution without compromising on power output. This ground-breaking invention aims to challenge traditional fossil fuel power plants by delivering reliable and competitively priced electricity. By capitalizing on the abundant cold resources, ChillPower paves the way for a greener and more sustainable energy future.</p>		

**CHINA**

<b>CN-01</b>	<b>NAME(S)</b>	<b>Liu Qingyi</b>
<b>ORGANIZATION</b>	TianJin Teda Experimental School	
<b>TITLE OF ENTRY</b>	<b>A carbon peaking and carbon neutrality system for campus science popularization based on Arduino</b>	
<p>Provide "carbon peaking and carbon neutrality" science popularization education for teenagers, emphasizing the integration of science popularization knowledge into campus activities, technology activities, and other popular content. Specifically, through the AI interaction form of artificial intelligence, students can receive "carbon peaking and carbon neutrality" science popularization knowledge in a relaxed and happy experience. By using a carbon calculator, we can understand the carbon emissions in our lives and guide teenagers to start with small things around us and choose a green and low-carbon lifestyle. Understanding "carbon peaking and carbon neutrality" and being a loyal practitioner and tireless fighter for the "carbon peaking and carbon neutrality" goals is a very meaningful thing. At the same time, it supports the QR code check-in function, which facilitates the statistics of student attendance and assists the school in managing student attendance. The project is based on touchscreen and Arduino development, with low cost and easy development, high universality, easy promotion, and enhancing the technological capabilities of teenagers.</p>		

<b>CN-02</b>	<b>NAME(S)</b>	<b>Kang, Jingze</b>
<b>ORGANIZATION</b>	Tianjin Wanquan Second Primary School	
<b>TITLE OF ENTRY</b>	<b>Campus IoT Composting Bin</b>	
<p>After the daily meal of the school, a large amount of kitchen waste will be generated. If this kitchen waste is transported for centralized disposal, it will require professional transportation vehicles, transportation equipment, fixed collection sites and professional treatment equipment. There is a possibility of increasing the cost and cycle of kitchen waste disposal. There is a possibility of improper disposal in the intermediate transfer process. How can the possibility of environmental pollution be solved faster and more effectively? Under the current conditions of mature fermentation technology and microbial technology, we can collect these kitchen waste, use professional equipment and processes in suitable places on campus, and convert kitchen waste into usable green and efficient organic fertilizers through aerobic fermentation and microbial action. The design of this device considers many aspects of the collection, fermentation, management and network control of kitchen waste, and brings new solutions for the treatment of kitchen waste on campus, the beautification of the campus environment, the harmless treatment of waste and the utilization of resources. The harmless treatment of organic kitchen waste can protect the soil and water sources. The organic fertilizer of the product can improve the ground force, reduce the use of chemical fertilizers and pesticides for trees and crops, and improve the organic quality of agricultural products.</p>		

<b>CN-03</b>	<b>NAME(S)</b>	<b>He Zixin</b>
<b>ORGANIZATION</b>	Tianjin Experimental Primary School	
<b>TITLE OF ENTRY</b>	<b>Bathtub Drowning Prevention Device</b>	
<p>Make a headband device similar to a shower cap. Once the headband device is soaked in water, it can send out a distress signal. The headband is installed in the immersion sensor, which will send a water signal when it is submerged in the water. After the water signal is sent out, it will be converted into a Bluetooth signal and sent out wireless signal. At the same time, the head band is also equipped with an acceleration sensor, which can sense whether the person falls, and if he falls, it will send an alarm message. Create a Bluetooth receiver device, the device receives the fall information and water immersion signals, at the same time open the bathtub drain valve, drive the bathtub under the water pipe pumping motor, the water in the bathtub quickly pumped away to prevent drowning. Bathing is a private activity, and accidents are not easily detected. It's even more dangerous for the elderly who can't move. I used my invention to increase the safety factor, hoping to avoid accidents and save more lives.</p>		

<b>CN-04</b>	<b>NAME(S)</b>	<b>Garvie Kawai Huang / Chi Un Ng / Hou Hei Lam / Un Man Wong / Kwan Brandon Arlatt / Pou Cheng Wong</b>
<b>ORGANIZATION</b>	Tsinghua University / Peking University	
<b>TITLE OF ENTRY</b>	<b>MICRO INSPECTION</b>	
<p>Micro Inspection, led by CEO/CTO Garvie Kawai Huang, is a company that focuses on providing professional electric motor fault detection and reporting services based on its independently developed core technology. The Micro Inspection system incorporates advanced technologies such as 5G low-latency communication, Internet of Things (IoT) big data analysis, artificial intelligence (AI) detection, and automation processes. Micro Inspection aims to provide commercialization transformation for different enterprise solutions, offering a "hardware + software + service" solution model, including solutions for industrial production chains, automotive power components, and more. Their focus on commercial communications, electronic industries, and new energy vehicles is expected to drive stable long-term revenue growth in the future.</p>		

## EGYPT

<b>EG-01</b>	<b>NAME(S)</b>	<b>Dr. Zaky Abd EILatif Zaky Abdellatif</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>An emergency landing runway for planes during landing &amp; failure the wheels. It works by means of an airbag with a sand basin</b>	
<p>It's used for aircraft landings. It has a suitable inclination to the top, similar to the start of a bridge rise, and this inclination helps to slow down the speed of a broken plane as its wheels descend. The runway also has a sizable basin filled with sand, whose width is greater than that of a large aircraft. The sandy basin's surface is covered in a significant number of air cushions, which operate to absorb the powerful shocks caused by the plane descending over it in the event of a malfunction or the wheels not falling</p>		

<b>EG-02</b>	<b>NAME(S)</b>	<b>Akram Haitham Mohamed Soliman</b>
<b>ORGANIZATION</b>	Exploration Center for Science and Technology Bani-Suef	
<b>TITLE OF ENTRY</b>	<b>Permanent Energy Multiplier</b>	
<p>Leakage of the resources of energy is a problem which has a great impact on several life fields like pollution. Many solutions were made for this challenge but still not efficient. The project is a generator which consists of three generators: one exploits solar energy; one exploits heat energy and the third one exploits gravity. The system can exploit permanent sources of energy to multiply its effect to save cost and time. The main factor for the work of the generator is to be dependent on a permanent source to multiply the effect.</p>		

<b>EG-03</b>	<b>NAME(S)</b>	<b>Rodina Mohmed Khaled Lotfi Hussin Fahmy</b>
<b>ORGANIZATION</b>	Ain Shams Secondary School for Girls	
<b>TITLE OF ENTRY</b>	<b>Someone Needs Help</b>	
<p>The psychopathic personality is an antisocial personality that performs violent and rioting acts to achieve psychological peace and reassurance so maybe most psychopathic characters feel comfortable after killing and do not leave any evidence or even DNA which shows that it is difficult to identify them. The psychopathic personality does not have feelings, so we find that they are very intelligent and enjoy lust for their victims and enjoy their suffering, and we find that their crimes walk in only one pattern and are not renewed in the pattern of killing a new victim. Everyone has the instinct of the psychopathic personality, but they have certain percentages, and everyone is different from each other as a result of individual differences between individuals, and also society helps in the emergence of psychopathic personality.</p>		

<b>EG-04</b>	<b>NAME(S)</b>	<b>Sama Mohamed Nooh / Shahd Mohamed Nooh</b>
<b>ORGANIZATION</b>	Sharkya STEM School	
<b>TITLE OF ENTRY</b>	<b>Little Mermaid:Improving Social Communication Level for Mildly Autistic Children Using Video Call-based Mobile Application Game</b>	
<p>The application aims to improve social communication skills for mildly autistic children ages 4-6. A survey filled out by 2,536 autistic individuals optimized the application's primary UI/UX. After implementation, an experiment was conducted with two groups: 300 participants who used the application for 12 weeks and a control group of 100 participants. The effectiveness of the application was tested using SCQ considering gender and demographic areas as independent factors. An unpaired t-test indicated a significant difference in social communication between the two groups with an interval of 2.80 to 3.02. However, there was no significant difference in social communication between participants from urban or rural regions, nor between male or female participants which concluded that the application is effective regardless of gender or socioeconomic background.</p>		

<b>EG-05</b>	<b>NAME(S)</b>	<b>Yassin Ali Salah El Deeb</b>
<b>ORGANIZATION</b>	Al-Qawmiya Al-Arabiya Official Preparatory School for Boys	
<b>TITLE OF ENTRY</b>	<b>I'm Here (IH'23)</b>	
<p>I'm Here project presents a smart bracelet that integrates internet of things and artificial intelligence technologies into an integrated health care and well-being system to help Alzheimer's patients live better lives. The water-resistant bracelet can locate the Alzheimer's patient if they are left unaccompanied and display their location on the mobile phone connected to the device. The bracelet also reminds patients of their treatment dates, provides a database to store important data, and sends alarms in case of an emergency. The project aligns with the sustainable development goals of good health and well-being and innovation, industry, and infrastructure.</p>		

<b>EG-06</b>	<b>NAME(S)</b>	<b>Essam Mohammed Abdelrazek Elkholy</b>
<b>ORGANIZATION</b>	Sharkya STEM School	
<b>TITLE OF ENTRY</b>	<b>Can pollution be turned into green profit?</b>	
<p>This project is designed to address three Sustainable Development Goals (SDGs): Climate change, the energy crisis, and waste materials. It was determined that rice straw was the best product to use as a source of energy. Following the project's implementation and numerous tests, the solution was discovered, which met the design specifications and verified the presumptions made, resulting in the production of biofuels like ethanol. Numerous other goods are produced by it, including packaging materials, animal feed, and soil fertilizer. The energy and climate issues Egypt and the rest of the world are facing can be effectively resolved by our research, since it produces clean fuel from the start.</p>		

<b>EG-07</b>	<b>NAME(S)</b>	<b>Mohamed Tarek Mohamed AbdElghaffar / Mohamed Sameh Mohamed Mohamed</b>
<b>ORGANIZATION</b>	Red Sea STEM School	
<b>TITLE OF ENTRY</b>	<b>Eye Reader</b>	
<p>A solution for paralysis patients who are unable to move or speak has been developed by using eye blinking as a binary code to control functions such as speaking and controlling smart home devices. An Arduino and IR sensor were used to detect eye blinks and translate them into actions. This allows patients to communicate and connect with their surroundings, improving their quality of life. The prototype was successfully tested after some initial failures.</p>		

<b>EG-08</b>	<b>NAME(S)</b>	<b>Mariam Ashraf Abdelrahman / Nada Hamdy Abdallah</b>
<b>ORGANIZATION</b>	Red Sea STEM High School	
<b>TITLE OF ENTRY</b>	<b>Food waste 2 solar panel</b>	
<p>Our project is addressing global challenges by tapping into an unexpected source - food waste - we've developed a transparent board that allows passing sunlight and converts harmful UV rays into visible light that converts to energy by solar cells. This means it can work all day and all night, even in the presence of clouds, making it a highly efficient and effective energy solution. It can be used as a wall for buildings, cars, and industries to produce their own energy, taking up less space and costing less than traditional solar cells. Best of all, you can customize the color of the board to suit your energy or natural light needs.</p>		

<b>EG-09</b>	<b>NAME(S)</b>	<b>Mohamed Khaled Fekry Mohamed Osman</b>
<b>ORGANIZATION</b>	STEM high school for boys, 6th October	
<b>TITLE OF ENTRY</b>	<b>Producing Energy from Shape Memory Alloys (Nitinol Engine)</b>	
<p>Energy is an essential part of everyone's daily life, and as a result, energy resources are being investigated to maximize their use. Renewable and non-renewable energy sources are the two distinct types of energy resources. Only 29% of renewable resources are used globally. As a result, non-renewable resources, which have various negative impacts and severely impact the environment, account for most of the energy use. There's a new way of generating electricity from SMA materials. This project is working on solving the problem of renewable energy rarity where the global needs a renewable source to decrease the use of harmful biofuel.</p>		

<b>EG-10</b>	<b>NAME(S)</b>	<b>Mena Melad Fanous Isaac</b>
<b>ORGANIZATION</b>	The Martyr /Abdel Moneim Riyad	
<b>TITLE OF ENTRY</b>	<b>Smart Socket</b>	
<p>Deaths due to electric shock from outlets are commonly heard of among people of all ages, from children to the elderly. This can happen when a person accidentally touches a live outlet with wet hands, leading to fatal electric shock in some cases. It is natural for children to have a curious nature exploring the world around them. When a child passes by an outlet, there is a risk they may touch it with a conductive material and die in an instant. The solution is not to kill the spirit of curiosity in children, nor to shut down electricity completely. Rather, we can simply make outlets with electric current sensors. When a child's wet hands approach the outlet, the current is cut off for a short time then restored. This is achieved using a sensor relay those controls cutting off the current using an electromechanical part. A microcontroller regulates the relay and receives signals from Bluetooth sensors. When contact is detected, it alerts a connected smartphone and activates an alarm to take appropriate action.</p>		

<b>EG-11</b>	<b>NAME(S)</b>	<b>Sally Mohamed Mostafa Ali Ahmed</b>
<b>ORGANIZATION</b>	Youssef Alsebaey high school for girls	
<b>TITLE OF ENTRY</b>	<b>Prevalence, causes, and impact of insomnia among adolescents in Egypt's high schools</b>	
<p>Adolescent insomnia is a widespread condition that has negative impacts on the mental and physical health of developing young adults. While adult insomnia treatment has been standardized, the treatment of pediatric insomnia varies greatly depending on the practitioner, and there are few large-scale studies available to establish recommended practices. However, there is great hope that as the fields of adolescent medicine and sleep medicine continue to flourish, larger cohort analyses will be conducted to determine the prevalence and underlying factors contributing to adolescent insomnia. This could lead to the development of standardized treatment recommendations and systematic efforts to make these available to all adolescents.</p>		



<b>EG-12</b>	<b>NAME(S)</b>	<b>Hany William Hefzallah Attia</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Stepper internal combustion engine</b>	
<p>A four-stroke internal combustion engine-stepper engine (natural breathing). It consists of 16 cylinders placed and arranged in a circle in a relatively small space. It can control the operation of a quarter, half, Three-quarters, or all of them. This results in controlling the internal power resulting from the engine, which leads to energy savings. The engine works in a new system, as each power stroke gives 1/8 revolution with a change of 45 degrees, and it is called a step. Therefore, obtaining a complete cycle requires 8 steps resulting from 8 power strokes. In this engine, the reciprocating movement of the pistons is not converted into a rotational movement by means of the crank shaft, but it is converted by sliding the piston arm itself on a circular wave frame. This zigzag circular frame controls the rotation and compression of the piston inside the cylinder to achieve the top and bottom dead center.</p>		

<b>EG-13</b>	<b>NAME(S)</b>	<b>Mohamed Yasser</b>
<b>ORGANIZATION</b>	Red Sea STEM School	
<b>TITLE OF ENTRY</b>	<b>Hydroponic system</b>	
<p>Abstract: Hydroponic farming offers a sustainable and efficient solution for crop cultivation without soil, using minimal water. Through advancements such as automation, tailored nutrient formulations, adjustable lighting systems, and specialized support structures, hydroponic systems can effectively grow a wide range of crops. Additionally, optimization of irrigation and trellis systems, integration of pollination techniques, and crop-specific pest and disease management strategies further enhance productivity. These improvements enable hydroponic systems to provide optimal growing conditions, maximize yields, and overcome limitations of traditional agriculture. With the potential to revolutionize food production, self-sustaining hydroponic farms offer a sustainable and environmentally friendly alternative for growing crops in diverse environments.</p>		

<b>EG-14</b>	<b>NAME(S)</b>	<b>Mahmoud Ahmed Abd Elwahab</b>
<b>ORGANIZATION</b>	Sharkya STEM School	
<b>TITLE OF ENTRY</b>	<b>Methane Re-reaction System</b>	
<p>This study focuses on methane, a greenhouse gas that has historically contributed significantly to climate change. The Sabatier reaction generates methane when a semi-renewable energy source is available. To protect the environment, this study aims to lessen the amount of carbon dioxide that is released into the atmosphere and from the combustion of methane. The Sabatier reaction is then restarted by utilizing its by-products and burning the methane created from the combustion of carbon dioxide CO<sub>2</sub> and water H<sub>2</sub>O. Its goal is also to use methane rather than let it escape into the atmosphere.</p>		

<b>EG-15</b>	<b>NAME(S)</b>	<b>Shahd Elgouhary</b>
<b>ORGANIZATION</b>	Mahlet Quis Secondary School	
<b>TITLE OF ENTRY</b>	<b>Air-to-Energy Converter</b>	
<p>For many years, methane has been ignored in the climate change conversation with cutting methane emissions the fastest opportunity we have to slow the rate of warming thermal energy instantly, even while decarbonizing energy systems. My idea here revolves around methanotrophic bacteria, as they can convert methane (CH<sub>4</sub>) into methanol (OH<sub>3</sub>CH) and have the ability also to convert methanol to formaldehyde / methanal (O<sub>2</sub>CH) and these bacteria can grow aerobic or aerobic. These bacteria will be grown inside a device equipped to incubate them. The inside of the device will be in the shape of hexagonal cell to increase the reaction surface area.</p>		

<b>EG-16</b>	<b>NAME(S)</b>	<b>Samar Mohamed Aatef Mohamed Mousa El-Sayad</b>
<b>ORGANIZATION</b>	Sharkya STEM School	
<b>TITLE OF ENTRY</b>	<b>Converting Carbon Emissions into Carbon Nanotubes and Producing Electricity</b>	
<p>The problem is climate change, the main cause of climate change is greenhouse gases, the main gas in greenhouse gases is carbon dioxide, the solution deals with carbon dioxide and also can be applied to carbon monoxide, the solution consists of three stages, the first stage is converting carbon emissions into solid carbon by exposing carbon emissions to EGaIn alloy and heat, the second stage is converting carbon into carbon nanotubes by a Chemical Vapor Deposition process, and the third stage is producing electricity from carbon nanotubes by interacting with an organic solvent like acetonitrile.</p>		

<b>EG-17</b>	<b>NAME(S)</b>	<b>Amro Sami Shalaan Al-Adham</b>
<b>ORGANIZATION</b>	High Institute of Engineering and Technology, Damietta, Egypt	
<b>TITLE OF ENTRY</b>	<b>Civil Engineering Thermometer (CET)</b>	
<p>The (C.E.T) is a new instrument in the civil engineering field, which takes readings for both fresh concrete temperature (ASTM C 1064) and the concrete consistency/slump (ASTM C143) together by the same sample in the same time, through number of some standard blows that necessary for penetration of the thermometer sensor by its complete length in the concrete sample, with purpose of reduction of the waiting time in the concrete placement process, hence, increased productivity.</p>		

<b>EG-18</b>	<b>NAME(S)</b>	<b>Amro Sami Shalaan Al-Adham</b>
<b>ORGANIZATION</b>	High Institute of Engineering and Technology, Damietta, Egypt	
<b>TITLE OF ENTRY</b>	<b>Soil Compaction Application (SCA)</b>	
<p>The (SCA) is a new application in the civil engineering field especially in the soil mechanics, which related to a dial gauge indicator (Fig.1) installed by a magnet in any compaction tool during the compaction process, to see the state of the soil surface in digits transferred from the gauge to your phone, this give a quick background on the possibility of success or failure of the soil before making such standard tests like (ASTM D1556), (ASTM D1196) and (ASTM E2835), etc.</p>		

## GEORGIA

<b>GE-01</b>	<b>NAME(S)</b>	<b>Giorgi Mikiashvili</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Innovative and multifunctional electric wheelchair</b>	
<p>The presented innovative chair is adapted for patients and disabled people, and it can be used to carry old people! This wheelchair can be used for five different purposes, such as: (1) Wheelchair, (2) Bed, (3) For a vertical position, (4) In the bathroom or for a shower, (5) It makes it easier to get in and out of bed from a sitting or standing position, so that none of the patient's muscles will be strained. The presented wheelchair works on an accumulator (or batteries) and is operated by remote control and a mobile application!</p>		

## HONG KONG

<b>HK-01</b>	<b>NAME(S)</b>	<b>Dr Leung Ka Man / Miss Wong Hiu To / Miss Chan Ka Man</b>
<b>ORGANIZATION</b>	The Education University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>Sitting Light Volleyball and Its Functional Sports Garment</b>	
<p>Globally, there are ~244,000 people with physical disabilities (PWPD) and 1,451,514 elders who are less physically active. Sitting light volleyball (SLVB) is a team sport specially developed to benefit the physical and psychological health of them. Research has identified deficiencies in existing sports apparel for SLVB, which leads to movement restrictions and abrasion. An ergonomic-based, personalized garment is typically designed for SLVB to enable an accessible and enjoyable sports experience for players. With velcro and removable pads, it enhances sitting balance, and lowers movement restrictions on the floor and wearing inconvenience, thereby encouraging PWPD and older adults to participate in SLVB.</p>		

<b>HK-02</b>	<b>NAME(S)</b>	<b>Dr Tsang Yiu Fai / Ms Cheng Yan Laam / Dr Siu Yee Ming / Ms Pang Hei Tung</b>
<b>ORGANIZATION</b>	The Education University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>Rapid Quantification of Microplastics Using Total Organic Carbon Analysis with Simple Sample Pretreatment</b>	
<p>Rapid and reliable detection and quantification of microplastics in different environmental samples is challenging for microplastic research and routine monitoring. However, total organic carbon (TOC) analyzer can be used to measure microplastic levels in different samples. Compared to the other commonly used techniques, the complexity of the microplastic characteristics and the sample's nature do not affect the accuracy of the TOC analysis. An all-in-one semi-automatic sample pretreatment device can efficiently and effectively extract microplastics from different environments. Besides, the users can control the pretreatment device remotely and monitor real-time experimental conditions of the pretreatment using the web-based mobile app.</p>		

<b>HK-03</b>	<b>NAME(S)</b>	<b>Dr Fu Hong / Dr Song Yanjie / Dr Zheng Yang / Dr Li Bin / Miss Qiu Minyu / Miss Hou Beibei / Mr He Ziyu</b>
<b>ORGANIZATION</b>	The Education University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>An Intelligent Ocular Misalignment Measurement System</b>	
<p>This fully automated machine to measure ocular misalignment has enormous potential to help solve the shortage of eye professionals and to provide an objective method with higher granular measurement.</p>		

<b>HK-04</b>	<b>NAME(S)</b>	<b>Prof Chow Cheuk Fai</b>
<b>ORGANIZATION</b>	The Education University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>Nano-Sensor System for Meat and Seafood Monitoring</b>	
<p>It is a new and convenient way of monitoring food safety. A series of chemo sensors can detect the chemical substance released from rotting food and a device that can monitor food quality. It can avoid food-borne illnesses and reduces waste through system monitoring.</p>		

<b>HK-05</b>	<b>NAME(S)</b>	<b>Dr Song Yanjie / Prof Yu Leung Ho Philip / Prof Lee Chi Kin John / Dr Fu Hong / Mr Wu Kaiyi / Mr Cao Jiaxin</b>
	<b>ORGANIZATION</b>	The Education University of Hong Kong
	<b>TITLE OF ENTRY</b>	<b>Learningverse - a 3D metaverse for online collaborative learning</b>
<p>A 3D metaverse provides custom virtual tools for online collaborative learning on training and educational purposes on a common computer with a webcam for acting as avatars to enhance the immersive and interactive environment for learners.</p>		

<b>HK-06</b>	<b>NAME(S)</b>	<b>Dr Steve Mung Wai-yin / Linked-Technologies Limited</b>
	<b>ORGANIZATION</b>	The Education University of Hong Kong
	<b>TITLE OF ENTRY</b>	<b>Fall Detection System for Smart City</b>
<p>Falling in a private area can lead to missed treatment, which can be fatal. A smart fall detection system is developed to detect people's status in private areas, such as accessible toilets, and prevent delayed treatment. This originated system includes the server and on-site fall detection hardware which are connected by the Narrowband Internet of Things (NB-IoT) technology. The hardware includes a microcontroller unit and two thermal sensors. The server can then calculate the data detected by the thermal sensor and send alert signals to the backend user for abnormal detection.</p>		

<b>HK-07</b>	<b>NAME(S)</b>	<b>Dr Louisa Chung Ming-yan / Dr. Peggy Or Pui-lai</b>
	<b>ORGANIZATION</b>	The Education University of Hong Kong
	<b>TITLE OF ENTRY</b>	<b>Game-basis Learning Materials for Children to Promote Healthy Eating and Be a Germ Fighter</b>
<p>Healthy eating and infection control are important habits. To motivate children to learn these areas effectively, three board games targeted at primary students were designed and developed for learning and practising. It aims to engage children to play collaboratively and transfer knowledge of healthy eating and infection control by repeated exposure.</p>		

<b>HK-08</b>	<b>NAME(S)</b>	<b>TREE BEAR Limited / Headset Limited</b>
	<b>ORGANIZATION</b>	The Education University of Hong Kong
	<b>TITLE OF ENTRY</b>	<b>Revolutionizing Early Childhood Education with Vision AI-led Games for Active Learning and Balanced Technology Usage</b>
<p>This invention introduces an innovative approach to early childhood education by designing Vision AI-led games that revolutionize human-mobile interaction and address concerns regarding excessive screen time. Leveraging advanced computer vision algorithms, we create interactive games that engage young children through gesture recognition, eyes detection and object tracking. By incorporating Vision AI technology, the invention enhances the learning experience, encourages physical movement, physical human interaction and limits screen time. Through immersive and educational gameplay, children develop cognitive skills while reducing their reliance on traditional screen-based activities. This invention pioneers a novel solution to balance technology usage while promoting active learning and healthy development in early childhood education.</p>		

<b>HK-09</b>	<b>NAME(S)</b>	<b>Bingang Xu / Yuanyuan Gao / Meiqi Li / Yitong Wang</b>
	<b>ORGANIZATION</b>	The Hong Kong Polytechnic University
	<b>TITLE OF ENTRY</b>	<b>Sustainable Self-powered Functional Textiles</b>
<p>Sustainable self-powered textiles with excellent electrical properties, breathability and softness are produced as an integrated 3D pattern structure that matches the style of human motion by using sewing technology, comprising traditional textiles as the base fabric, and functional textile materials as the negative and positive materials. The mechanical energy of human motion can be converted into green, clean and renewable electric energy by the 3D pattern structure of the self-powered textiles. It can easily generate 500 V instantaneous voltage and 20 <math>\mu</math>A instantaneous current with 500mW/m<sup>2</sup> under normal walking conditions which can be used to drive low-power electronic products.</p>		

<b>HK-10</b>	<b>NAME(S)</b>	<b>Zhenglong Li / Vincent Tam / Lawrence Yeung</b>
	<b>ORGANIZATION</b>	The University of Hong Kong
	<b>TITLE OF ENTRY</b>	<b>Multi-RiPO: A Multimodal Risk-Manageable Portfolio Optimization Platform for Automated Algorithmic Trading</b>
<p>Portfolio Management (PM) optimizes the weight of assets in a portfolio for maximizing returns and diversifying risks. However, most deep learning-based PM models do not monitor market sentiment and explicitly manage investment risks in real-time trading, which may lead to huge losses, especially in volatile financial markets. To address those issues, a risk-manageable PM platform integrated with Reinforcement Learning (RL) is proposed for supporting intelligent algorithmic trading. By fusing the latest multimodal financial data, the RL-based trading agent learns to be a fund manager to maximize returns while the risk controller manages downside risks within an acceptable range in real-time.</p>		

<b>HK-11</b>	<b>NAME(S)</b>	<b>Zhiqin Chu / Yuan Lin / Jixiang Jing / Yong Hou / Xinhao Hu / Luyao Zhang</b>
<b>ORGANIZATION</b>	Advanced Biomedical Instrumentation Centre Limited	
<b>TITLE OF ENTRY</b>	<b>Photonic Chipscope for Monitoring of Live Cell Activities</b>	
<p>This inventive GaN chipscope provides a low-cost and ready-to-use sensing system for label-free cellular physiological activity detection. It comprises a monolithic gallium nitride (GaN) chip as a refractometer and a mini-differential interference contrast microscopy (DIC) component to realtime capture cellular/subcellular morphological features. The optoelectronic GaN chip integrates a light-emitting diode and a photodetector at a micro-scale, allowing for direct readout of local refractive index changes associated with cellular physiological activities. These unique properties make the GaN chipscope an ideal tool for real-time monitoring and quantifying cell activities in the biosensor field.</p>		
<b>HK-12</b>	<b>NAME(S)</b>	<b>SHOU Dahua / LAM Chak Wai / GU Yuheng</b>
<b>ORGANIZATION</b>	The Hong Kong Polytechnic University	
<b>TITLE OF ENTRY</b>	<b>iActive: Intelligent Active-Perspiration Activewear</b>	
<p>Beyond existing activewear, iActive is faster and more controllable in removal of sweat using nature-inspired technologies, including low-voltage-driven artificial "sweat glands" and a root-like branching liquid transport system that matches the body's sweat map. This intelligent activewear delivers all-day comfort, dryness, light weight, and breathability to improve performance and endurance.</p>		
<b>HK-13</b>	<b>NAME(S)</b>	<b>Prof. LAM Hon Wah</b>
<b>ORGANIZATION</b>	ZenxTag Technology Limited	
<b>TITLE OF ENTRY</b>	<b>Smart Food Label - Chemosensing testing material for the detection of biogenic amines in high-protein food</b>	
<p>Smart Food Label which can identify the freshness of high protein food. The core technology of the smart food label is Biogenic sensing technology. A unique ironbased molecular complex was designed and synthesized as a chemosensor for detecting biogenic amine which will be released from spoiled food. The chemosensor has a very deep green color. The chemosensor is injected into the smart food label. Upon contacting the vapor of biogenic amines, the label will react with biogenic amine gas that shows a distinctive red-orange color. Consequently, the user can know the freshness of food through the colour of the label.</p>		
<b>HK-14</b>	<b>NAME(S)</b>	<b>Wong Pik Wai / Wong Yin Kiu</b>
<b>ORGANIZATION</b>	St. Mary's Canossian College	
<b>TITLE OF ENTRY</b>	<b>Metaversal Historical Buildings</b>	
<p>We aim to solve the problems of historical buildings being dismantled and them having damage due to old age. For this, we have developed two main functions for our project. Firstly, an AI system which can detect cracks in pictures. After images are inputted into the system, the results will be annotated with red for cracks and green for non-crack areas. The second part is Meshroom, a 3D Modeling software that creates digital models of historical buildings. This software can generate models using pictures, ensuring that the models accurately capture the real appearances of the buildings.</p>		
<b>HK-15</b>	<b>NAME(S)</b>	<b>Lo Cheuk Sze Miriam / Sum Wai Ching Safina / Chu Hiu Ching Phoebe</b>
<b>ORGANIZATION</b>	St. Mary's Canossian College	
<b>TITLE OF ENTRY</b>	<b>Deli-gious</b>	
<p>Our lifestyle is characterized by a fast-paced routine. Many individuals find themselves struggling to finish their meals and tend to choose fast food. However, consuming too much fast food causes health issues, like obesity, high blood pressure, and heart disease. To tackle the problem at its roots, we invented Deli-gious, which is equipped with four functions. The Recipe function provides simple cooking methods for users while Finding Restaurant function will locate high-rated and healthy restaurants nearby. Calories tracking function records user's intake of calories. Meal Planning function plans the meals according to the users' previous eating habits and their plans.</p>		
<b>HK-16</b>	<b>NAME(S)</b>	<b>NASIR Amina</b>
<b>ORGANIZATION</b>	CMA Choi Cheung Kok Secondary School	
<b>TITLE OF ENTRY</b>	<b>Universal-Sketch</b>	
<p>The Universal-Sketch is a low-cost, multi-functional device that enables people of different physical abilities to engage in sketching and writing. Its flexible finger mount and use of replicable carbon sticks make it a universal and sustainable design solution that promotes inclusivity, equal learning opportunities, and creative development.</p>		
<b>HK-17</b>	<b>NAME(S)</b>	<b>AAMINA Farooq</b>
<b>ORGANIZATION</b>	CMA Choi Cheung Kok Secondary School	
<b>TITLE OF ENTRY</b>	<b>Drinks Cover</b>	
<p>The "Drinks Cover" is a flexible and durable cover that fits over most standard soda cans and bottles. It features a hook that allows for easy carrying and is designed to protect drinks from spills and dirt. The cover is reusable, making it an eco-friendly alternative to single-use drink containers. Affordable and practical, it is ideal for outdoor activities and promotes environmental responsibility.</p>		

<b>HK-18</b>	<b>NAME(S)</b>	<b>Marcus Hok Yin CHEUNG / TAM Man Shun</b>
<b>ORGANIZATION</b>	King's College	
<b>TITLE OF ENTRY</b>	<b>Home cooking method analyzer: AI App for Health Suggestions based on experimental data from self-designed polarimeter</b>	
Household cooking has been more common than ever during the Covid-19 pandemic. However, the public has little access to information about the effect of different household cooking methods on human health. Protein, as one of the major components of nutrition, can be easily turned into harmful or even carcinogenic material during our daily life cooking by racemization. Therefore, we conducted experiments about the rate of racemization of different cooking methods with a self-designed polarimeter. We also design an app to visualize the health effects of different cooking methods and provide cooking suggestions to the public.		

<b>HK-19</b>	<b>NAME(S)</b>	<b>WAN Wai Long / CHU Wai Pak / LIU PeiKun / YAU Yan Ngai</b>
<b>ORGANIZATION</b>	King's College	
<b>TITLE OF ENTRY</b>	<b>AgNPs and Natural dye-sensitized TiO<sub>2</sub>NPs-catalyzed photo-oxidation in food waste treatment and its potential application in H<sub>2</sub> production enhanced by Venturi effect</b>	
This study introduces a novel methodology for enhancing hydrogen production through the use of chlorophyll-sensitized titanium dioxide nanoparticles (TiO <sub>2</sub> NPs) in an alkaline glycerol-water mixture. As a promising technique for producing renewable hydrogen fuel under solar irradiation, photocatalytic hydrogen generation has garnered significant attention, with TiO <sub>2</sub> NPs being widely investigated as effective photocatalysts. The present research endeavors to improve the efficiency of hydrogen production through the sensitization of photocatalysts with a range of synthetic and natural dyes, including silver nanoparticles (AgNPs), anthocyanin, β-carotene, betalain, and chlorophyll. Our findings unveil that chlorophyll-sensitized TiO <sub>2</sub> NPs demonstrate the highest rate of improvement, increasing hydrogen production by 516.0%. Furthermore, the addition of sodium carbonate and glycerol to the reaction mixture increased hydrogen production by 24.9% and 89.4%, respectively. Additionally, a synergistic effect was observed when the Venturi effect was applied to chlorophyll-sensitized TiO <sub>2</sub> NPs in an alkaline medium, resulting in a 1475% increase in hydrogen production. The results of this research have significant implications for the development of efficient and sustainable hydrogen production technologies. Further investigations should explore the synergistic effects of these parameters.		

<b>HK-20</b>	<b>NAME(S)</b>	<b>Thuc Hue Ly / Liu Haijun</b>
<b>ORGANIZATION</b>	Department of Chemistry, City University of Hong Kong / City University of Hong Kong, Shenzhen Research Institute	
<b>TITLE OF ENTRY</b>	<b>Ice-transfer for 2D materials</b>	
The invention discloses a method for transferring ultra-clean two-dimensional (2D) materials from growth substrates onto a wide range of substrates including rigid and flexible substrates. During the transfer process, water (ice) is used to detach the 2D materials from the growth substrates and then establishes a firm coupling with the target substrate, enabling the successful transfer of 2D materials. Since the use of polymer, chemical etchant, or organic solvent is avoided, and water is the only medium used, the transferred 2D materials on target substrates are extremely clean.		

<b>HK-21</b>	<b>NAME(S)</b>	<b>Zhiqin CHU / Yau Chuen YIU / Tongtong ZHANG</b>
<b>ORGANIZATION</b>	Xon Vision Limited	
<b>TITLE OF ENTRY</b>	<b>Diamond-mediated optical anticounterfeiting solution</b>	
Traditional anticounterfeiting is at risk because advanced material analysis and fabrication techniques expose the underlying features and make them easily cloneable, while fragile is also a drawback of current practices. We resolve this issue with a diamond-mediated optical anticounterfeiting solution. We use diamond's fluorescent, Raman scattering, and Rayleigh scattering as the optical chirptext to store authentic content. With the advantages of difficulties in replicating the diamond and the diamond's extreme toughness in physical and chemical aspects, our invention can provide you with an unclonable optical anticounterfeiting solution with numerous information storage capacities.		

<b>HK-22</b>	<b>NAME(S)</b>	<b>LIU, KI MING / MAN, CHAK CHUNG / WU, CHI HUNG</b>
<b>ORGANIZATION</b>	Shun Tak Fraternal Association Yung Yau College	
<b>TITLE OF ENTRY</b>	<b>SkyGuard: A Comprehensive Sky Quality Meter for Monitoring and Analyzing Light Pollution</b>	
SkyGuard is an innovative sky quality meter (SQM) designed to combat light pollution. Using an Arduino board and photoresistor sensor module, it accurately measures night sky brightness (NSB). Equipped with additional modules, including a dust sensor, air quality monitor, and camera, it provides comprehensive atmospheric data. SkyGuard records data on a micro SD card for real-time analysis. This invention aids in understanding the environmental impact of light pollution, facilitating the preservation of natural darkness, protection of ecosystems, and promotion of human health. Valuable insights from SkyGuard empower policy-makers, researchers, and communities to adopt sustainable lighting practices for a brighter future.		

<b>HK-23</b>	<b>NAME(S)</b>	<b>DENG, WEICONG / MAN, CHAK CHUNG / CHEUNG, KONG FUNG</b>
<b>ORGANIZATION</b>	Shun Tak Fraternal Association Yung Yau College / Chong Gene Hang College	
<b>TITLE OF ENTRY</b>	<b>Nature's Power: Harnessing the Oil-fighting Abilities of Pomelo for Effective Cleaning</b>	
<p>This invention introduces an objective experimental method for testing the degreasing ability of cleaning agents and compares the effectiveness of various commercial products. The results reveal that Pomelo Detergent, a natural detergent derived from the peels of wasted or frozen fruits, exhibits superior cleaning performance by outperforming other traditional detergents in removing oil droplets. This environmentally friendly alternative not only minimizes waste and maximizes resource utilization but also avoids foam pollution typically associated with conventional detergents. The findings emphasize the potential of Pomelo as a sustainable and efficient choice for effective cleaning purposes.</p>		

<b>HK-24</b>	<b>NAME(S)</b>	<b>Yanmin Zhu / Yuxing Li / Jianqing Huang / Yunping Zhang / Edmund Y. Lam</b>
<b>ORGANIZATION</b>	University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>Intelligent polarization holographic probe for real-time microplastic identification</b>	
<p>Identifying and quantifying microplastics (MPs) play a crucial role in solving serious MPs pollution. This invention is proposed for the characterization of MPs in both aquatic and airborne environment. Advanced intelligent multi-modal polarization holographic imaging is realized in this system for the first time. This system can provide discriminative physical features, such as morphology, transparency, phase, birefringence, etc. In addition, machine learning methods are integrated for automatic image processing to achieve the intelligent, accurate and quick MP identification. The portable and compact device can be used both in aquatic and airborne environment and is a powerful tool for MP pollution monitoring.</p>		

<b>HK-25</b>	<b>NAME(S)</b>	<b>Shijing Luo / Wending Pan / Sarah K. W. Leong / Yifei Wang / Prof. Dennis Y.C. Leung</b>
<b>ORGANIZATION</b>	The University of Hong Kong, Harbin Institute of Technology (Shenzhen), Ambr Tech Limited.	
<b>TITLE OF ENTRY</b>	<b>High-performance Flexible Al/Mg-ion Hybrid Batteries with Super-easy Fabrication</b>	
<p>Ion batteries with common metals such as aluminum and magnesium are promising energy options due to their high theoretical voltage, high volumetric capacity, and abundance in nature. Here we invented an Al/Mg ion hybrid battery with Mg anode, AlCl<sub>3</sub> water-in-salt electrolyte, and graphite cathode. Excellent performance has been achieved with a high discharging plateau at 2.8 V and a high volumetric capacity of 1.4 Ah L<sup>-1</sup>. Its fabrication is super simple, and its electrolyte cost only ~2% of the conventional ones, which are appealing for industrial manufacturing.</p>		

<b>HK-26</b>	<b>NAME(S)</b>	<b>Jockey Club 'CoolPlay' Project</b>
<b>ORGANIZATION</b>	Yew Chung College of Early Childhood of Education (YCCECE)	
<b>TITLE OF ENTRY</b>	<b>JumpStarter</b>	
<p>The JumpStarter series from the Jockey Club 'CoolPlay' Project is a groundbreaking innovation in early childhood STEM education. Its unique 'three-in-one' design is a first in Hong Kong, seamlessly integrating learning across school and home environments. The series comprises 25 issues, each exploring a different everyday life theme, or 'Big Idea'. Each issue includes a children's picture book, a teacher's guide, and a parent's guide, with content and activities that are meaningfully connected, ensuring a unified and continuous STEM learning experience. This innovative approach extends learning beyond the classroom, fostering curiosity, exploration, and problem-solving skills in everyday life.</p>		

<b>HK-27</b>	<b>NAME(S)</b>	<b>LAM Wah Shing / CHAN Tsz Lung / CHEUNG Wing Hong Peter</b>
<b>ORGANIZATION</b>	City University of Hong Kong	
<b>TITLE OF ENTRY</b>	<b>Nurse Assistant Robot – Luna Cat</b>	
<p>LUNA - our innovative AIOT (Artificial Intelligence and Internet of Things) product designed to prevent falls and ensure the safety of patients. With advanced technology, LUNA provides Cantonese voice prompts to remind patients to stay in bed and wait for medical assistance when attempting to leave their bed. At the same time, the control panel at the nursing station is immediately alerted, allowing nurses to communicate with patients in real-time through voice calls, and promptly address their needs. This proactive approach significantly reduces the risk of falls and other accidents, ensuring the well-being of patients.</p>		

<b>HK-28</b>	<b>NAME(S)</b>	<b>Kong Tsoi Yung / Kwok Yu Lam / Yip Hau Yim / Zheng Yan Ki</b>
<b>ORGANIZATION</b>	Lai King Catholic Secondary School	
<b>TITLE OF ENTRY</b>	<b>Myopia lentes</b>	
<p>Outdoor sunlight has been shown to have a positive effect on reduce the likelihood of children becoming myopic and slowing the deterioration of vision in children with myopia, across multiple research studies. Myopia lentes aims to reduce the risk of increase in myopia for people especially children and teenagers. The glasses record outdoor light intensity, and the time lapsed and distance between the eyes and near objects. Based on the data, it produces feedback and give eye protection tips to users. Photochromic films are also applied to Myopia lentes to block ultraviolet light (UVA and UVB) with a competitive cost.</p>		

<b>HK-29</b>	<b>NAME(S)</b>	<b>TSE Jennifer / XUE Yuan Xi / YIM Wan Tung</b>
<b>ORGANIZATION</b>	Shun Tak Fraternal Association Yung Yao College	
<b>TITLE OF ENTRY</b>	<b>AI Money Vision</b>	
<p>AI is becoming increasingly important in our daily lives. 'AI Money Vision' is an AI-assisted tool that recognizes various banknotes and coins from different angles and displays real-time exchange rates and automatically converts them to equivalent Hong Kong dollar values. We are excited to deepen our understanding of AI applications through this research project and hope to create more inventions utilizing AI to improve human lives in the future.</p>		

<b>HK-30</b>	<b>NAME(S)</b>	<b>Yang Cao / Ho Cheung Shum</b>
<b>ORGANIZATION</b>	University of Hong Kong; Advanced Biomedical Instrumentation Centre Limited	
<b>TITLE OF ENTRY</b>	<b>Ultrasensitive Rapid Antigen Tests</b>	
<p>Our team developed a breakthrough technology that selectively enriches target antigens using phase separation systems, making lateral flow assays more effective. The technology can detect SARS-CoV-2 N protein at concentrations as low as 1ng/mL, 10 times more sensitive than commercial kits, and can detect inactivated clinical samples with a Ct value of 40.3. We also expanded the technology to more antigens like Influenza A/B N proteins. Our optimized assays have higher accuracy and can detect various diseases.</p>		

<b>HK-31</b>	<b>NAME(S)</b>	<b>Shing Fung Chow / Kam-Hung Low / Si Nga Wong</b>
<b>ORGANIZATION</b>	Advanced Biomedical Instrumentation Centre Limited	
<b>TITLE OF ENTRY</b>	<b>Novel Dexamethasone Cocrystal</b> (US Non-provisional patent application No. 18/307,992 and CN Non-provisional patent application No. 202310597221.0)	
<p>Dexamethasone (DEX) is an anti-inflammatory glucocorticoid which displays poor aqueous solubility, hampering its therapeutic efficacy. Cocrystal engineering has been harnessed to substantially improve the drug release of DEX in this invention through cocrystallizing with resorcinol (RES) and catechol (CAT), using mechanochemistry and controlled thermal activation. The 1:1 DEX-RES cocrystal can be further tailored as oral/nasal inhaled powders for prospective treatments of COVID-19/allergies, with potential synergistic effects exerted by RES. The cocrystal exhibited superior aerosol performance that rivals commercial products. Our invention paves the way for new possibilities in expanding the solid-state landscape of drug molecules, revolutionizing modern drug development process.</p>		

<b>HK-32</b>	<b>NAME(S)</b>	<b>Shing Fung Chow / Ho Wan Chan / Hok Wai Lee</b>
<b>ORGANIZATION</b>	Advanced Biomedical Instrumentation Centre Limited	
<b>TITLE OF ENTRY</b>	<b>An Integrated Continuous Manufacturing Platform for Fabricating Inhalable Nanoagglomerate Dry Powder as Next-Generation Respiratory Therapeutics</b> (US Provisional Patent Application No. 63/498,919)	
<p>Inhalable nanoparticle-based powders for respiratory conditions have faced challenges in particle size control and manufacturing reproducibility. To address these hurdles, we developed an innovative manufacturing platform for inhalable nanoagglomerate powders by combining flash nanoprecipitation and spray drying technologies. The platform allows for precise size tuning of primary nanoparticles and nanoagglomerate powders, ensuring optimal therapeutic outcome whilst offering excellent scalability and reproducibility. Using this breakthrough, we have successfully produced inhalable remdesivir and paclitaxel nanoagglomerate powders, demonstrating promising therapeutic potential against viral infections and lung cancer, respectively. Our invention sets the stage for accelerated development and clinical translation of advanced respiratory nanotherapeutics.</p>		

## HUNGARY

<b>HU-01</b>	<b>NAME(S)</b>	<b>Lajos Poczók (Budapest - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>3D-CALENDAR</b>	
<p>(Solid-State Elliptical Cylinder Display Device. The rotation of the Earth and the moon around the sun, display device, with months, days. Its purpose is to help you understand why there is winter and summer.</p>		

<b>HU-02</b>	<b>NAME(S)</b>	<b>János Ursinyi (Hajmáskér - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Long-shaft axial turbo integrated with the engine</b>	
<p>The shaft of the turbo passes through the engine or the cylinder head, it is built for that. On one side is the compressor wheel with the electric motor, on the other side is the axial turbine wheel. The bearings are adjustable and spaced apart, so it has a long life! Since the turbine is close to the exhaust valve, it works constantly, even at low power. It converts the surplus into electricity, if fast charging is needed, electric motor turns the compressor wheels. The axial turbine wheel is accelerated by the flue gas, but it also helps its removal, because it sucks on the cylinder, thus improving the efficiency. The cooling of the electric motor is solved, coil part is in contact with the block, the heat is removed from the rotor part by the compressor wheel.</p>		

<b>HU-03</b>	<b>NAME(S)</b>	<b>Ervin Hajdú (Hódmezővásárhely - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>"Minoan Mission" logical, strategic labyrinth board game</b>	
<p>Friends and a game full of adventures in a constantly changing labyrinth, find the Minotaur, fight it, and exit the board first winner.</p>		

<b>HU-04</b>	<b>NAME(S)</b>	<b>Lajos Vásárhelyi (Szigliget - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Multi-purpose heat generating equipment with heat storage</b>	
<p>A tube spiral built into a closed system boiler, in which liquid flows and heats it up, delivering the heat to the heating elements. Although this solution can also be used for hot air production and heating.</p>		

<b>HU-05</b>	<b>NAME(S)</b>	<b>Irén Szilávikné Buzás (Hódmezővásárhely - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Painted decorated and carved eggs</b>	
<p>English teacher and art teacher, egg painter-carver and painter. I was always creative at work, and I created a lot of visual teaching materials, posters and games to teach children English from a young age, and I even organized craft creative camps. Since my retirement, I DECORATE AND CARVE HEN, TURKEY, GOOSE AND OSTRICH EGGS for exhibition purposes approx. With 300 own designs (original and modern) and works. The other branch of art is PAINTING, which I like (all kinds of subjects: landscapes, portraits of people and animals, buildings, plants and objects. I work with various materials and techniques (oil paint, acrylic, powder pastel, tempera, graphite and charcoal).</p>		

<b>HU-06</b>	<b>NAME(S)</b>	<b>id. Sándorné Zsiros (Monor - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Handicrafts - tapestry, needle painting</b>	
<p>Gobelin: It is made with half cross stitches. Half and quarter meshes in order to develop the finest details. It is made with split embroidery thread. Needle-dyeing: It is done with split embroidery thread from 2 threads. Stitched closer to each other, we embroider "painted with a needle".</p>		

<b>HU-07</b>	<b>NAME(S)</b>	<b>Katalin N. Sebestyén (Monorierdő - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Unique themed and scientific works</b>	
<p>In my creations, I capture the events taking place in the infinite Universe. What makes my paintings special is that I provide them with a scientific explanatory text, so they are both educational and scientific at the same time.</p>		

<b>HU-08</b>	<b>NAME(S)</b>	<b>Dánielné Darázsi (Monor - Hungary)</b>
<b>ORGANIZATION</b>	Idea Club 13 Association (Ötlet Club 13 Egyesület)	
<b>TITLE OF ENTRY</b>	<b>Hand-embroidered creative postcards with yarn graphics technique</b>	
<p>The presented postcards were made using the String art technique. I work with cardboard (120-160g) and first choose a pattern. When I have the pattern, I place it on the cardstock and use a beading needle to poke holes in the paper every 1-2 mm (0.04-0.08 inches). After that, I start sewing with different stitch distances. I use 1mm thick Mettler Poly Sheen String. The seam should be tight, but make sure that the holes do not tear next to each other. After finishing the "sewing", I cover the back side of the stitches with another paper. Only the decoration remains with decorative stickers, beads and ribbons. I also make pictures and bookmarks using this technique.</p>		



## INDONESIA

ID-01	NAME(S)	Ni Putu Revalia Putri Santosa / Ni Kadek Cahya Dwica Septira / I Kadek Ergi Pramana Jaya / Ni Komang Triska Saraswati / Made Angga Candra Wardana / Gede Wikananda Baruna
ORGANIZATION	SMAN 2 SEMARAPURA	
TITLE OF ENTRY	<b>BIOPIS: THE UTILIZATION OF ARECA FRUIT PEEL WASTE (Areca Catechu L.) AND SAGO STARCH (Metroxylon Sago) AS MATERIALS FOR BIOFOAM</b>	
<p>The objectives of this study were (1) to determine the potential of areca fruit peel waste and sago starch; (2) to determine the effectiveness of areca fruit peel waste and sago starch. The best biofoam characteristics test results were 0% water absorption, 0.43 gr/cm<sup>3</sup> density, 75% biodegradability, 25.06 N/mm<sup>2</sup> tensile strength, and 30.11 N/mm<sup>2</sup> compressive strength. In conclusion, (1) areca fruit peel and sago starch have the potential as biofoam; (2) the best sample of this research is sample 4 (S-4), a combination of 10% NaOH, 65gr of areca fruit peel, 250gr of sago starch, and 3gr of magnesium stearate.</p>		

ID-02	NAME(S)	Agatha Sekar Widyaningrum / Akmal Ma'arif Al-Anshori / Damiano Anugerah Paskah / Himmawan Arsyad / Muhammad Arjuna Putra Sasongko / Rr. Tsaniya Faza Al-Machzum Azmi / Yohana Kinaryosih
ORGANIZATION	Polytechnic of Energy and Mineral Akamigas	
TITLE OF ENTRY	<b>Biorium: Conversion of Various Waste Cooking Oil for Optimized Biodiesel Production Through Esterification Method Using NaOH Catalyst at PEM Akamigas</b>	
<p>Due to the decrease in fossil fuel reserves, the increased need for sustainable and affordable alternative energy becomes more apparent than ever. Furthermore, the concern of motor vehicle emissions such as CO, HC, SO<sub>2</sub>, NO<sub>2</sub>, and other harmful particulates for both human health and the environment adds more to the need for clean green energy. The current trend of clean green energy is the conversion of waste cooking oil (WCO) to biodiesel. The use of waste cooking oil could minimize the high amount of pollution caused by used cooking oil also provide a sustainable, affordable, and clean energy alternative.</p>		

ID-03	NAME(S)	Ferdi Nazirun Sijabat / M. Aulia Alfarezi / Eliana / Banta Karollah / Parhan
ORGANIZATION	Sekolah Tinggi Ilmu Ekonomi Sabang (STIES) Banda Aceh	
TITLE OF ENTRY	<b>Community Based Resource Sharing Platform (Co-Sharp)</b>	
<p>Community-based resources sharing platform (Co-Sharp) is a social innovation that aims to promote and cultivate resource sharing activities among community members. By leveraging online platform, Co-sharp strives to optimize the utilization of idle resources in neighbourhood for solving problems overwhelmingly surrounded its member. This idea is intended to solve one of community pain points in affording to have needy resources such as tools that essential for their housewares repair and other community social activities. Community-Based Resources Sharing Platform (CTSP) requires broad and sincere participation among neighbourhood community to share the resources specifically those are non-depleted resources such as tools, ware, books, etc in order to help solving their fellow neighbourhood.</p>		

## IRAN

IR-01	NAME(S)	Dr. Akbar Tahiri Masouleh / Dr. Mohammadreza Radmehr / Dr. Maryam Sobhkhizsabet / Hamidreza Nezamivand Chegini
ORGANIZATION	The First Institute of Inventors and Researchers in I.R. IRAN	
TITLE OF ENTRY	<b>Gamma Radiometer Device For definitive treatment (96%) and at least 13 types of cancer before metastasis</b>	
<p>Optical beam to control the amount of impact (decrease or increase) to the required biological points. That is, does the bundle of light rays that move forward and forth due to the release of photon energy have an impact or not? They must have an impact, but a device must be built so that we can measure this amount of impact, although they are very small. Infected cells do not enter their surroundings, which means that this method can prevent the metastasis of invasive cells by drying the nucleus of the cells. However, radiation-induced invasive nuclear cells can be prepared for transport by macrophages (phagocytosis). In short, this new method, which is to inflict light radiation on labeled cells, can be dried and supplemented with photon therapy, replacing chemotherapy and serum therapy. In leukemia, which is the most common malignant cancer, the use of this new treatment method to suppress invading cells and dehydrate their cell nucleus and turn them into inactive and suspended cells in the blood and expose these neutralized malignant cells to macrophages and Then, transporting them to the relevant parts and organs for excretion from the body and can accelerate the process of accelerating the growth of white blood cells and the production of natural macrophages, this disease can be (%96) definitively treated.</p>		

<b>IR-02</b>	<b>NAME(S)</b>	<b>Behnam Amini / Saba Valizadeh Soltanahmadi</b>
<b>ORGANIZATION</b>	Iranian Center of Excellence in Health Management, School of Management and Medical Informatics, Tabriz University of Medical Sciences / Department of Chemistry, College of Liberal Arts, University of Mississippi / The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Safe Syringe against Needle Stick Injury</b>	
<p>Accidents caused by needle sticks are one of the most important issues in the field of health care and health care personnel. This phenomenon is usually caused by the blood that the job is facing and it is through blood. Various reviews show that current strategies often focus on greater accuracy in order to maintain health and standardize injection processes, while at the same time can be referred to with appropriate design for channel transfer. The present invention is to design a kind of development of faith syringes, the first purpose of designing this syringe is the risk of accidents caused by needles (needle stick) and the next purpose is to create the possibility of self-destruction and the syringe is disposable after injection. The noteworthy point in the design of this syringe, the important feature of the syringe designed in this invention is the presence of a special structure of the needle holder and the two-part piston in it, which, in addition to creating the possibility of burning the needle after injection, makes it disposable and also easier to use. It is safer than the syringe samples in it. It becomes a market.</p>		

<b>IR-03</b>	<b>NAME(S)</b>	<b>Eng. Mohammad Keyhani / Eng. Davoud Beheshtizadeh / Eng. Alisalar Keyhani</b>
<b>ORGANIZATION</b>	Iran Frame Co Research and Production Complex / The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Designing and Manufacturing of High-Strength Recycled Concrete Using Construction Debris and Waste from The Construction Industry (Green Concrete)</b>	
<p>Concretes, like any other materials and materials used in building construction, lose their resistance and are destroyed over time and under the influence of climate changes, and have many harmful and destructive effects on urban communities and the environment. In this invention, we use nano technology and special processing to Produce Recycled Concrete with high strength, which is friendly to the environment.</p>		

<b>IR-04</b>	<b>NAME(S)</b>	<b>Eng. Mohammad Keyhani / Eng Davood Jafari / Eng Davoud Beheshtizadeh / Mrs. Mohaddeseh Shabani Gabaioi</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Design and Production of Structures and Pre-fabricated High-Resistance Concrete Villas with a Thin Shell of High-Strength Concrete and Insulation (heat-cooling-moisture insulation)</b>	
<p>Invented prefabricated concrete structures are in several different types that are made in the factory and sent to the project site for installation. In this invention, the prefabricated structure is made in the form of a thin shell of high-strength concrete, and its connections are designed in the form of a puzzle. This structure is equipped with a solar cell system on the roof to supply its own electricity and will have wide applications as prefabricated concrete villas.</p>		

<b>IR-05</b>	<b>NAME(S)</b>	<b>Esmail Ayoman</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Safe initiation of shock tubes (Nonel) connected to mineral detonators based on nanotechnology</b>	
<p>Common surface detonator contains primary explosives such as lead azide. Primary explosive such as lead azide are highly sensitive and polluting the environment. To solve this problem, the strength and detonation velocity of secondary explosives can be reduced by reducing its density to the level of lead azide. For this purpose, a small amount of nanocomposite or microcomposite containing the combination of RDX and nanothermite or microthermite with a density around 0.45 g/cm<sup>3</sup> without primary explosive can be used. The sensitivity and toxicity of this nanocomposite or microcomposite is much lower than lead azide.</p>		

<b>IR-06</b>	<b>NAME(S)</b>	<b>Vahidreza Molladavoudi</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Automatic machine to wash, disinfect, dry, and investigate the possibility of affliction with bovine mastitis</b>	
<p>This invention is designed to perform all the stages of preparing the cow automatically before the milking process, and it can save time and water consumption. This device has 5 different functions such as measuring breast temperature, washing, cleaning, disinfecting the pacifiers, and drying the pacifiers. Measuring the temperature of teats through a thermometer, using brushes at different angles, and drying systems are the superior of this system over similar specimens.</p>		

<b>IR-07</b>	<b>NAME(S)</b>	<b>Alireza Hoseini</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Mobility aid Device for Children aged 1 to 5 years with Cerebral palsy (CP)</b>	
<p>The Mobility Device for Children with cerebral palsy (CP) in which the child's body placed, the device is designed in such way that the child's movement organs are covered and have the therapeutic properties of vibration and electric pulse to strengthen the muscles. It uses Artificial Intelligence and Machine learning algorithms to assist movements and sensors to analyze Muscle Signals. AI algorithms use this information to provide feedback and support the persons movement. This device can be connected to a smartphone and transmit the received information to it. Allows people to access and track the progress of child overtime and allows therapists to monitor progress and adjust treatment plans as needed.</p>		

<b>IR-08</b>	<b>NAME(S)</b>	<b>Mohammad Salahinezhad</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Heat Recovery Device Through the Controlled Conduction of Thermal Energy of Lamps in Building</b>	
<p>This device is such that by directing the heat energy produced in light bulbs, on the one hand, depending on the need, it provides a part of the heat energy of the home space, and on the other hand, by creating ventilation around each lamp, it improves the performance and The life of the lamp is increased.</p>		

<b>IR-09</b>	<b>NAME(S)</b>	<b>Pouria Rezakhakhadem / Sonia Zehtab</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Smart Assistant For Alzheimer's Patients</b>	
<p>Our invention assists patients with Alzheimer's in taking their medication on time, recognizing familiar faces and objects, and completing daily tasks. It is a smart assistant that communicates with elderly patients and helps to minimize the financial costs and irreversible risks associated with the disease.</p>		

<b>IR-10</b>	<b>NAME(S)</b>	<b>Mohammad Javad Safari</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Anti-reflux bed for babies</b>	
<p>This invention is a bed for babies that can automatically prevent reflux and stay upright after eating and show us and the doctor the information about the weight and food eaten. This invention can automatically adjust the angle to prevent the baby's reflux and stay upright after each meal and show information about the child's food and weight.</p>		

<b>IR-11</b>	<b>NAME(S)</b>	<b>Amirhossein Kolahchian</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Large pot washing robot with ability to change the size</b>	
<p>This invention is a device used for washing special and unique dishes. It use a new system for wasting. It brushes and body of device can change the size with use of origami patterns and it brushes can place in all parts of dishes. And it can wash and sanitize dishes with the use of UV ray lamp at the same time .it can be used in hospitals, OR, laboratory, houses and etc.</p>		

<b>IR-12</b>	<b>NAME(S)</b>	<b>Mahdi Rezaei</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Ultrasonic method and system for measuring blood pressure in the heart and brachial artery for health care and rapid diagnosis of cardiovascular disorders without the use of cuffs</b>	
<p>The ultrasonic method and system for measuring blood pressure in the heart and brachial artery are for health care and rapid diagnosis of cardiovascular disorders without the use of cuffs in terms of using the ultrasonic sensor for evaluation and measuring the blood pressure. Since cardiovascular disorders are common in a significant range of people and persistent control of it is necessary for health care, determining the blood pressure in traditional methods will be done only in the arm area and the systolic and diastolic pressures are mostly measured. Therefore, paying attention to them with applicable data on the vascular and heart can be examined with more detail by the health care specialist and by the individual and others. Based on this electrical module of ultrasound sensor in the electrical system, the measuring system of blood pressure in the heart and brachial artery are simultaneously for one person and they are according to the electronic processing of raw data of ultrasound sensor and mathematical calculations of the physical function of blood and organelles which are based on received raw data for the values of each index. The obtained calculated information, measuring the sound and measuring systole/diastole blood pressure and storing it in the medical calendar of the specialist and even its momentarily application in the medical environment, will help in the diagnosis of the situation and treatment path.</p>		

<b>IR-13</b>	<b>NAME(S)</b>	<b>Elahe Farmani</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Laboratory slide staining device using sample immersion</b>	
<p>A device for coloring laboratory slides by immersing samples, the device has an automatic and intelligent quality control system that does this according to the number of painted samples or the time elapsed since the previous quality control round. This device the form of a cylinder and includes two main parts: the coloring and quality control part and the mechanical part of this device, including the lower body, containers and a top spinner body. This device is used in the field of said types of staining and in all departments of the medical diagnosis laboratory that require multiple stages of staining with the mechanism of immersing the slides in the dye. It is also capable of programming for different types of dyes in other departments.</p>		

<b>IR-14</b>	<b>NAME(S)</b>	<b>Akbar Abbasi</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Generate electricity using water tanks</b>	
<p>The water tanks that lead to electricity production and the components of this invention include a concrete platform, indoor water pool, trapezoidal tanks, paddle inside the tank, motor boat propeller, gearbox, crank, and power generator. In this invention, 6 water tanks with a weight of 22 tons each are placed on the platform and by installing paddles in the tank, water drift and wave formation and rocking movement of the tank are created. To strengthen the movement of the water in the tank, a motorboat propeller was installed under the oars, and within 2 seconds, the water drift reached the second half of the tank and the rocking movement was completed. And with the coordinated and uniform implementation of this method, a constant back-and-forth movement has been created for the tanks, whose movement cycle is once every 4 seconds or 15 times per minute.</p>		

<b>IR-15</b>	<b>NAME(S)</b>	<b>Omid Khalilpour</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Concealed power reducing device and protection of electronic devices</b>	
<p>A portable part is placed separately between the outlet and the plug of electrical devices. In case of not using these devices, the current will be interrupted automatically and reduces electricity consumption. This physical part reduces electricity consumption and prevents energy waste through complete interruption. It is also capable of protecting electronic devices against electric current fluctuations.</p>		

<b>IR-16</b>	<b>NAME(S)</b>	<b>Sina Jannesar / Maedeh Pournasir Roudbaneh</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Selective Laser Melting (SLM) method-based porous orthopedic and dental implants</b>	
<p>The irregular porous implant made of the titanium grade 5 which has been produced by SLM (Selective Laser Melting) method. For maintaining the firmness of the implants, using a surface layer with a few millimeters of the thickness in the form of porous is considered in manufacturing of them. The open-porosity titanium foam bearing the properties of the bone's natural tissue with irregular structure and homogeneous distributing of the porosities. The porous foam bearing the defined parameters such as porosity percentage, size of the voids and the length and thickness of the Struts are modelled based on the usage of the implant. The porous implant is produced by the Selective Laser Melting from the medical grade titanium powders. The orthopedic or dental porous implant is manufactured in a uniform manner or with the separated porous parts.</p>		

<b>IR-17</b>	<b>NAME(S)</b>	<b>Hoda Hamzehloo / Behrouz Kavand</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>CYRUS next Generation Industrial Firewall with defense-in-depth capability for Layer2 and 3 Protocols</b>	
<p>CYRUS Industrial Firewall is regarded as the first industrial firewall with an integrated engine for Deep Packet Inspection (DPI) of industrial communication traffic for layer 2 and 3 protocols, industrial VPN, industrial IDS &amp; IPS (Intrusion detection systems (IDS), and intrusion prevention systems (IPS)) and vulnerability signatures. It has the possibility of deploying a firewall in various network models and architectures, including Passive Mode, Transparent Mode, and Routing Mode. Moreover, it performs the coverage of the largest number of industrial protocols without paying attention to their communication medium, whether it is a layer 2 network like serial or a layer 3 network like Ethernet, and comprehensively protects the whole cyberspace of the industrial environment.</p>		

<b>IR-18</b>	<b>NAME(S)</b>	<b>Elahe Abedini</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>The structure obtained from the bioreactor with fixed bed hydrogel for wound healing</b>	
<p>Because trauma is the leading cause of death in the country, the society faces a variety of injuries and damages resulting from accidents. One side of this spectrum is the physical problems and different injuries that happen to people who are hurt in accidents and traumas. Actually, trauma occurs when the skin and tissues underneath get hurt and damaged, often causing wounds formation. The main goal of treating wounds is to make them heal as quickly as possible. This means preventing infections and complications, as well as minimizing any negative effects on how the wound looks and functions once it has healed. The current ways of healing wounds are not enough and have some problems, so it is important to find a new treatment approach. The strong ability of cell-loaded scaffolds to help tissue grow back has encouraged us to use this method to treat wounds caused by injuries. In this project, we will create a special container called a bioreactor and use it to grow cells from fat. We will then place these cells into a gel-like material that can be injected into wounds to help them heal. This will allow us to create a device that can treat many different types of injuries.</p>		

<b>IR-19</b>	<b>NAME(S)</b>	<b>Saeed Lari</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Intelligent platform for designing and drawing construction plans based on data mining and artificial intelligence</b>	
<p>The intelligent platform for designing and drawing building plans has been created to help employers, contractors, and building engineers, and facilitate the process of designing and drawing building plans to be able to address the most important concerns of employers, contractors, and engineers by providing smart and modern construction plans under the title "Intelligent platform for designing and drawing construction plans based on data mining and artificial intelligence" with the ability to manage time, cost and considering the interests of employers and contractors and construction engineers. The purpose of providing this smart platform is to make optimal use of time, and produce maps that suit each person's interest, construction budget, type of building, waiting time, and suit each city. In this intelligent platform, employers, contractors, and engineers first select the desired city (number of floors, number of rooms, number of units, number of people), the direction of the land (north, south, east, west, two corners, three corners), building type (villa apartment, residential complex, tower), type of use (residential, commercial, administrative, therapeutic, educational), desired window dimensions, design style (modern, traditional), kitchen model (open, island, closed), land dimensions (length and width) and then the system intelligently provides construction plans based on the data received by employers, contractors, and engineers.</p>		

<b>IR-20</b>	<b>NAME(S)</b>	<b>Kiarash Zolfaghari</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Intelligent system and program for monitoring the baggage loading process of passengers at the airport</b>	
<p>In this system, a monitoring process based on scanning barcodes and QR code NXT is placed, which provides a step-by-step monitoring and inquiry process for passengers and the airport security team. One of the problems of the luggage transfer and loading system at the airport is damage to the luggage in the loading process, forgetting or failure in one of the loading steps, and mistakes in transferring the cargo to the desired plane. In this claimed invention, a monitoring system based on a QR code is used, which enables step-by-step monitoring and communication of the steps taken in the loading process (from passing through the X-ray to the final loading in the luggage compartment in the lower part of the plane) from Through a software system, it enables passengers and the airport monitoring system. At each stage, the NXT barcode is first scanned by the barcode reader and through 360-degree cameras such as Insta360 from all angles, the health of the luggage and the monitoring of the authenticity of the luggage should be done step by step.</p>		

<b>IR-21</b>	<b>NAME(S)</b>	<b>Saeid Abazari / Mohammad Javad Nourian Fard</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>A portable heating-cooling turbo fan coil device using fluid</b>	
<p>This invention is a Heating-Cooling Turbo Fancoil in which the defects of similar devices in the market have been correlated. By using the hot and cold elements (Heatsink), there is no need for an Engine room and Chiller, compared to Air conditioner, Fan coils even Split inverters. Therefore, it reduces power consumption and increases efficiency, reduces production costs and reduces occupied space. Finally in a smaller package it is weightless, portable and easy to install and use.</p>		

<b>IR-22</b>	<b>NAME(S)</b>	<b>Seyed Mohammad Ali Ebnetorab / Hamed Ahari / Seid Mahdi Jafari / Maryam Mizani</b>
<b>ORGANIZATION</b>	The First Institute of Inventors and Researchers in I.R. IRAN	
<b>TITLE OF ENTRY</b>	<b>Fabrication and design of polycaprolactone-based nanofibrous patch as a pH indicator to detect the spoilage of Beluga fish (Huso huso)</b>	
<p>A pH indicator patch is a color-changing device used to identify spoiled food by analyzing microbial byproducts. While most patches are hydrogels, electrospun nanofibers have a higher surface area-to-volume ratio, aiding in efficient encapsulation and release of active substances. This invention aimed to create an improved Electrospun patch using three extract loading methods to enhance pH sensitivity. The result was a pH-responsive colorimetric patch produced through co-spinning red cabbage anthocyanin extracts (RCE) with Gellan gum, PCL, and chitosan, boasting significant physicochemical attributes.</p>		

## JAPAN

JP-01	NAME(S)	MD. AZIZUL MOQSUD / AHYAN HISAN AZIZ / AFNAN AMMAR AZIZ
ORGANIZATION	Yamaguchi University, Keishin Middle school, Kotoshiba Elementary School	
TITLE OF ENTRY	<b>Bio-battery system for bioelectricity generation with kitchen garbage, soil and living plants</b>	
<p>A bio-battery system has been developed for bio-electricity generation from kitchen garbage, organic soil, and a living plant. One chamber plant microbial fuel cell has been constructed on a small scale. Natural bamboo charcoal is used as electrode materials. The copper wire was connected to the anode and cathode to make an external circuit and hence electricity can transfer from anode to cathode. It has been seen that bioelectricity can be generated from this bio-battery. The natural geo-bacteria decompose the substrates released by the roots and hence generate electricity. So, this biobattery system can be sustainable way to get green electricity from the living plants.</p>		

## KOREA

KR-01	NAME(S)	Ph.D. Youngkyun Choi / Ph.D. Byung Kee Choi
ORGANIZATION	CBK Choi Youngkyun Dental Clinic (Choi Byung Kee dental clinic)	
TITLE OF ENTRY	<b>CBK splint</b>	
<p>The CBK (cranial balancing key) splint is an individualized occlusal stabilizer optimized for each patient's tooth structure. It is equipped with a metal strip bite to hold the occlusion centrically and provides a 1.5mm-thick space in the occlusal-adjusted posterior teeth. The CBK splint is already being used clinically, and many dentists are utilizing it to address patients' occlusion issues and contribute to overall health improvement. Currently, the CBK splint is being commercialized and made available in the dental field, with specialized manufacturing companies producing and distributing it. Additionally, education and training programs are in place to educate dentists about the usage and benefits of the splint.</p>		

KR-02	NAME(S)	Hyunseo Cho
ORGANIZATION	Seoul Scholars International	
TITLE OF ENTRY	<b>Protective Effect of EGCG Against SH-Induced Cell Death in a Human Glial Cell Model of Alzheimer's Disease</b>	
<p>This study investigated the protective effect of epigallocatechin gallate (EGCG) from green tea against Scopolamine hydrobromide (SH)-induced cell death and intracellular ROS levels in a human glial cell lines model of Alzheimer's Disease. Our findings indicate that 50 <math>\mu</math>M SH effectively induced cell death in A172 human glial cells, providing a reliable model for mimicking Alzheimer's disease pathology. However, post-treatment with EGCG significantly increased cell viability and reduced intracellular ROS levels, indicating its neuroprotective potential. The ability of EGCG to modulate these crucial factors promises a therapeutic intervention for protecting glial cells and combating Alzheimer's progression.</p>		

KR-03	NAME(S)	KIMGIYOON
ORGANIZATION	Samil Technical High School	
TITLE OF ENTRY	<b>Automatic Posture Custom Motion Chair</b>	
<p>In the case of general chairs, the backrest is manually adjusted, and in the case of the invention, the backrest is automatically adjusted to fit the human body shape using a servo motor, and the height of the chair can be adjusted using a ball screw and a servo motor to match the length of the human leg. Depending on the person, the chair is automatically adjusted to maintain the right posture, so that the right body shape can be maintained.</p>		

## LEBANON

LB-01	NAME(S)	Ali Al Hadi Tlais
ORGANIZATION	National Association for Science and Research (NASR)	
TITLE OF ENTRY	<b>Vehicle Safety System</b>	
<p>Studies indicate, according to the Edgarsnyder.com website, that more than 23% of the annual fatal traffic accidents in the world occur due to the use of the phone while driving, and about 32% of them, according to the National Safety Council, due to driving the car at a speed exceeding the permissible speed. So, for the sake of public safety, and for the sake of saving people's lives, today I will present to you my invention "Vehicles Safety System" whose work is to reduce traffic accidents by preventing the driver from driving more than the permitted speed, and by preventing him from using the phone while driving. As this device built into the car monitors whether the driver uses the phone while driving, using artificial intelligence and computer vision.</p>		

<b>LB-02</b>	<b>NAME(S)</b>	<b>Hasan Harb / Rola Bazzi</b>
<b>ORGANIZATION</b>	Almostafa Robotics Club	
<b>TITLE OF ENTRY</b>	<b>Titrobot</b>	
<p>Titro-bot is a versatile monitored robotic system designed to enhance both acid-base titration experiments and pH control in chemical reactions. Titro-bot acts as an extension to a regular titration setup, providing automated and precise monitoring of pH and temperature. The robot is equipped with sensors that continuously measure the pH of the solution being titrated. By monitoring the pH, Titro-bot can detect the point of equivalence, where the reaction is neutral, typically indicated by a pH of 7. This enables the robot to accurately determine the endpoint of the titration, ensuring precise and reliable results.</p>		

<b>LB-03</b>	<b>NAME(S)</b>	<b>Raymond Karam / Raymond Khoury / Marcelino Berbary / Georges Sleilati / Daniel Chahine / Karl Bechara</b>
<b>ORGANIZATION</b>	Notre Dame de Jamhour School	
<b>TITLE OF ENTRY</b>	<b>The Alzheimer Robot</b>	
<p>Have you ever found yourself forced to leave one of your relatives diagnosed with Alzheimer alone to go to work while there isn't anyone to look after them? With our robot, you don't have to worry about this issue anymore. In fact, our robot is designed to help old people in need, particularly those diagnosed with Alzheimer's disease. It has many functionalities such as: An infrared tracking system; by placing an infrared emitter on the patient's calve and an infrared receiver on the robot, the latter is able to follow the patient; A camera with a built-in microphone connected to an application on the relatives' phone that allows them to communicate with the diagnosed person, but also see what is happening in the room from their phone; Medical sensors that can measure the patient's heart rate, SPO2 and temperature; A water pump and a pill dispenser that will provide the patient with his medication when needed by clicking a button on our application; A safe that opens only through our application in order to keep the patient's personal stuff safe by closing automatically after 5 seconds; A wireless connection with the phone that allows more features.</p>		

<b>LB-04</b>	<b>NAME(S)</b>	<b>Yara Bark / Marc Beaino / Gabriel Salem</b>
<b>ORGANIZATION</b>	Notre Dame de Jamhour School	
<b>TITLE OF ENTRY</b>	<b>The Green Building</b>	
<p>To eradicate the problem of garbage in streets and to facilitate the process of recycling and to provide a clean source of energy to all buildings, we propose a change in the infrastructure of cities as shown in the prototype. Our invention proposes automated underground garbage sorting and biogas production. The sensors will detect the nature of the thrown garbage and transmit the information to the microcontrollers that will analyze the data to open the right bin. The garbage will go underground to reach conveyor belts for each kind of garbage. Each conveyor belt has been equipped with a transmitter sensor module, an ultrasonic receiver that will communicate with a microcontroller to order the belt to return the already sorted waste to the appropriate treatment plant.</p>		

<b>LB-05</b>	<b>NAME(S)</b>	<b>Mohamad Baker Obeid</b>
<b>ORGANIZATION</b>	Bracket Technologies	
<b>TITLE OF ENTRY</b>	<b>Bracket Engagement Platform</b>	
<p>The Bracket Engagement Platform is a cutting-edge innovation that empowers organizations to drive meaningful engagement and interaction. Built on the revolutionary Bracket Technology, this platform offers a comprehensive suite of features, including chat, e-learning, forms, bookings, and e-commerce, all designed to enhance user engagement. With customizable templates, multi-authentication layers, and stringent security measures, the Bracket Engagement Platform ensures a seamless and secure experience. This game-changing solution has already garnered international recognition, winning gold medals in prestigious invention competitions like the Canada Invention Competition and the Geneva Invention Competition. Discover the future of engagement with Bracket Engagement Platform.</p>		

## MACAO

<b>MO-01</b>	<b>NAME(S)</b>	<b>Mok Hoi Fai / Lo Sio Sang</b>
<b>ORGANIZATION</b>	Macau Pui Ching Middle School	
<b>TITLE OF ENTRY</b>	<b>A color blindness analyzer based on color mixing principle</b>	
<p>Color vision is an important visual function of the human eyes. Without color vision, people cannot enjoy the colorful world. Abnormal vision will affect people's work and life. Patients with color vision deficiency are restricted in their occupations. At present, pseudoisochromatic plate test is the most used test in the clinical examination of color vision abnormalities. This tool is very convenient, but it cannot be measured quantitatively and is affected by the environment. In this study, a simple instrument for color blindness examination is designed based on the optical principle learned in middle school. In this project, the color deficiency is analyzed by the ratio of red and green light required to achieve standard light (yellow light) when these two beams of light are mixed, and the color deficiency is quantitatively analyzed by the amounts of red and green light.</p>		

<b>MO-02</b>	<b>NAME(S)</b>	<b>Pun Kei Wai / Ao Man Him / Man Chi Chong / Lam Chou Ngai / Lin Bai Tao</b>
<b>ORGANIZATION</b>	Pui Ching Middle School Macau	
<b>TITLE OF ENTRY</b>	<b>Are you dry ? ---- A controllable floor drain device to prevent virus intrusion</b>	
<p>Since the outbreak of COVID-19, public awareness of infectious diseases has gradually increased. Many people think that staying at home is completely safe from being infected. At present, it is very difficult for people to know what is going on inside the traps and in most cases it is too late to find out. After a data search, there are no products or devices on the market that can inform people at home to fill their traps with water in a timely manner. To prevent odour, bacteria and viruses from affecting our home environment, we get to the root of the problem. We then came up with the idea of using the Arduino to set up a device that reminds people to pour adequate water into the trap when necessary. Hopefully, our device can raise the public awareness of U-pipe, inhibit the possibility of virus spread, and reduce the chance of outbreaks of infectious diseases.</p>		

<b>MO-03</b>	<b>NAME(S)</b>	<b>KUOK MEI IAN / YICK SUET CHING</b>
<b>ORGANIZATION</b>	Macau Baptist College	
<b>TITLE OF ENTRY</b>	<b>A water-saving toilet system based on intelligent health analysis and environmental protection</b>	
<p>The idea of the product is to build on the convenience brought by traditional automatic flushing toilets and apply AI intelligent recognition technology to automatically determine the condition of excrement after the user uses the toilet, provide health analysis to the user, and raise personal awareness of health. To use the smart toilet, the user simply closes the toilet lid after use and the system will automatically control the UV lamp to disinfect the toilet. This avoids direct contact with the operation switch and improves hygiene. Additionally, the smart toilet can determine the type of excrement and control the amount of water used to achieve water-saving effects. When the system recognizes that the excrement is feces, it provides health analysis to the user based on the condition of the feces.</p>		

<b>MO-04</b>	<b>NAME(S)</b>	<b>HO KENG IN / HOI CHON WAI</b>
<b>ORGANIZATION</b>	Macau Baptist College	
<b>TITLE OF ENTRY</b>	<b>AI Smart Meter Management System Ver2.0</b>	
<p>Our system (AI Smart Meter Management System Ver2.0) can effectively increase the mobility of parking spaces by detecting overtime violations and issuing fines, or even locking cars automatically. After many discussions and data measurements, we finally decided to use the gyroscope to raise the flap in the middle of the car, so that the car cannot move. In this project, solid-state physics and mechanokinetics are used. The similarity of the project is that it can be used for online payment, license plate recognition, etc. The difference is that our system is added to the parking space, with automatic billing and auto-lock. A time limit is set to ensure the mobility of cars, auto-lock for overtime parking, AI night vision image recognition of license plates in the parking space and fines using the system, reducing the manpower and time required. From this, the solution to this problem is found: the ability to automatically record license plates and lock cars, eliminating the car owner's sense of luck; the ability to automatically lock the car after timeout, and the ability to automatically unlock the car after the owner pay the fine, greatly improving efficiency, mobility, convenience, and enforcement.</p>		

<b>MO-05</b>	<b>NAME(S)</b>	<b>IP KIT FONG / U TAT LAM / WEN HOU HONG / JIANG TINGHAN</b>
<b>ORGANIZATION</b>	Macau Hou Kong Middle School	
<b>TITLE OF ENTRY</b>	<b>An ointment that scabs a wound quickly the secret hidden between soil and flowers</b>	
<p>Based on the soft nature of the cream and there are two types of dosage forms: water-in-oil and oil-in-water, which can be used under consideration of the skin condition, water-in-oil can form a thicker and longer lasting oil film, oil-in-water can be applied like a drench with almost no sensation, and there is no pain when the injured person applies the medicine, and assisted by medicines, Panax ginseng total saponins are responsible for hemostasis and anti-inflammation, and Bryonia lactiflora crude polysaccharides are mainly responsible for wound healing and crusting, and Before the wound heals, the ointment will form a layer of oil film in the application place which can isolate the air and prevent the wound from infecting pus and inflammation, joboba oil can also increase the penetrability of the drug and increase the proportion of the drug that can be used in the right place, in the bio-experiment, our work shows obvious therapeutic and anti-inflammatory effects.(Biology labs are in the PowerPoint with various metrics such as PGE2 on immunity, BK bradykinin on vascularity and crusting, and SP on pain transmitters).</p>		

<b>MO-06</b>	<b>NAME(S)</b>	<b>PUN CHI KIN / HU KA WAI / LEONG POK HEI / WONG HO WA</b>
<b>ORGANIZATION</b>	Pui Ching Middle School, Macau	
<b>TITLE OF ENTRY</b>	<b>Development of Regular Macroporous Structure for Highly Efficient Hydrogen Evolution Reaction</b>	
<p>This group has upgraded the reaction kinetics, mass transfer efficiency and mass activity of alkaline Water splitting technology at the level of morphology engineering, and greatly improved the hydrogen evolution efficiency of alkaline Water splitting technology. In this work, our group embedded Ru nanoclusters into the three-dimensional ordered macroporous structure OMS Mo2C/NC metastructure with multiple heterogeneity, forming OMS-Mo2C/NC-Ru. The three-dimensional ordered macroporous structure endows our catalyst with better mass transfer ability and gas release conditions. The catalyst has an extremely low Overpotential of 15.5 mV, an ultra-small Tafel slope of 22.7 mV/dec and excellent electrocatalytic durability at 10 mA/cm<sup>2</sup>, which are superior to commercial Pt/C (Overpotential: 23.3 mV; Tafel slope: 28.1 mV/dec at 10mA/cm<sup>2</sup>). In addition, the mass activity of this catalyst is 17 times that of Pt/C. In conclusion, this catalyst has better electrocatalytic performance than commercial Pt/C, which creates objective conditions for promoting alkaline Water splitting technology.</p>		



<b>MO-07</b>	<b>NAME(S)</b>	<b>KANG HOU MENG / LIAO KA U / CHEN YUNLIN / LIN MINGXIN / CHAO SIN IEOK</b>
<b>ORGANIZATION</b>	Macau Hou Kong Middle School	
<b>TITLE OF ENTRY</b>	<b>Glycyrrhetic Acid Burn Ointment</b>	
<p>After finishing Glycyrrhetic acid and Asiaticoside, they are mixed in proportion to make an ointment, which is used to treat slight burns. Once burned, failure to get timely and effective rescue will lead to a series of problems. The degree of burn and injury are different. We have consulted a lot of data and found that Glycyrrhetic acid and Asiaticoside have therapeutic effects on burns, while Asiaticoside can also promote wound healing. So we decided to make Glycyrrhetic acid burn ointment. The idea is to explore the toxicity of Glycyrrhetic acid and Asiaticoside, determine the maximum concentration of the drug according to the MTT test, and determine the best effective concentration through the anti-inflammatory test. Innovation: 1. Using Glycyrrhetic acid to treat burns, and adding Asiaticoside to assist, 2. Toxicity and anti-inflammatory experiments were conducted on Glycyrrhetic acid and Asiaticoside to ensure the safety of the product, 3. Use aloe gel as the base of the ointment, 4. The ingredients are simple and self-made, and the proportion can be adjusted according to personal needs.</p>		

<b>MO-08</b>	<b>NAME(S)</b>	<b>IONG WENG U / CHEONG SIN IN / CHONG WENG TONG</b>
<b>ORGANIZATION</b>	Pui Ching Middle School Macau	
<b>TITLE OF ENTRY</b>	<b>Intelligent Registration System Based on LBPH Face Recognition and Speech Recognition</b>	
<p>Our innovative project utilizes LBPH face recognition and Google API speech recognition technology to detect the user's voice. The goal of this project is to design a more caring and personalized voice registration system that can help the elderly, visually impaired individuals, and disabled individuals to complete the registration process easily and overcome potential barriers. We hope that this project can increase the attention paid to these groups of people and improve their quality of life. We use LBPH face recognition technology to identify user's data, use Google API voice recognition technology and ptsx3 voice output technology to obtain user's information, use SQLite to build a registration database, and create an intelligent medical registration system.</p>		

<b>MO-09</b>	<b>NAME(S)</b>	<b>NG SI IENG / WANG U FEI / LU CHON IP / ZOU I LAM / CHANG KIN MAN</b>
<b>ORGANIZATION</b>	Macau Hou Kong Middle School	
<b>TITLE OF ENTRY</b>	<b>Multifunctional environmental friendly dog walking artifact</b>	
<p>The upper part of this work features a handle designed by ourselves, and there is a small hook hanging a dog rope on it, followed by a solar panel that provides light energy for Deng Guang's lighting in the lower part. The middle is a plastic conduit, and the bottom is a 3D printed box type. The middle of the conduit pulls the gear linkage device to control the dog walking artifact composed of the bottom device. A dog walking tool that can handle pets' bowel movements in a timely manner. The material is environmentally friendly, clean and hygienic, and it is extremely convenient to take out. It has wheels and a water spray device to clean pet excrement stains, as well as a multifunctional and environmentally friendly dog walking tool that can be directly thrown into the trash can without touching feces.</p>		

<b>MO-10</b>	<b>NAME(S)</b>	<b>NG SI IENG / WANG U FEI / LU CHON IP / ZHENG TONG LEONG / WONG TOK HEI</b>
<b>ORGANIZATION</b>	Macau Hou Kong Middle School	
<b>TITLE OF ENTRY</b>	<b>Relief of Throat Disorders, Sweet Aftertaste - A Preliminary Study on the Effects of Yu Gan Zi Chen Pi Oral Tablets on Throat Disorders</b>	
<p>Our teachers are prone to symptoms of sore throat or uncomfortable throat due to frequent speech. They often take anti-inflammatory drugs or throat moistening tablets to alleviate them, but both drugs and regular throat moistening tablets have side effects and a poor taste. Yuganzi is a common small fruit in our hometown. When our throat is not in good time, our parents ask us to chew a few Yuganzi, which is sweet and produces saliva, and the discomfort is quickly relieved; Chen Pi can promote phlegm, invigorate the spleen, and stimulate the appetite. It has a strong natural aroma and is an indispensable treasure in daily cooking. Therefore, we have the idea of using the extracts of Yuganzi and Chen Pi to make a safe and effective buccal tablet, hoping to bring good news to teachers.</p>		

<b>MO-11</b>	<b>NAME(S)</b>	<b>WEN CHI WAI / LOI PEK I / LI DALESUN</b>
<b>ORGANIZATION</b>	Macau Hou Kong Middle School	
<b>TITLE OF ENTRY</b>	<b>The Hand That Can "Drink Tea" - Which Has Great Charm Like the Grapefruit</b>	
<p>In our daily life, our hand's constant contact with the outside environment, whether it is washing, cooking, cleaning, or the cold air attack in autumn and winter, will make the skin of our hands dry, rough and produce fine lines, which will appear very old and even cause calluses and even chaps in the knuckles. Therefore, we want to develop a cream hand care product that can effectively moisturize, resist oxidation, lighten spots, and beautify and tighten skin. With the theme of environmental protection, this study combines the essential oil extracted from the pomelo peel as kitchen waste with the hand cream produced by active substances such as antioxidant, anti-microbial, and anti-aging, to form a pomelo essential oil hand cream with the effects of repairing and moisturizing, which can be naturally degraded &amp; harmless to the environment with low cost.</p>		

<b>MO-12</b>	<b>NAME(S)</b>	<b>KONG CHI KEI / HUANG TENG WA / TAM I MAN / PAO HOI KIN / YONG WILLIAM</b>
<b>ORGANIZATION</b>	<b>PUI CHING MIDDLE SCHOOL</b>	
<b>TITLE OF ENTRY</b>	<b>To be or not to be, that's the water thing</b>	
<p>It can be seen that the amount of compounds in the fish tank is closely related to the survival of the fish; hence we decided to find a way to get rid of these harmful impurities. After some data collection, we found the following common solutions: first of all, use the detector to detect the content of chemical substances in the water. If the content of a particular substance is found to exceed the standard, then start to change the water so that the water quality in the fish tank has been kept at the highest level and in good condition. Regarding the detector, we can use a photoionization detector to detect the concentration of ammonia, a water quality nitrite detector to detect the nitrite and use the MS09-nitrate sensor to detect the nitrate content in the water. In addition, water temperature and water flow are also important facets that influence the quality of water quality, so we decided to use a thermometer and a heating rod to control the water temperature. At the same time, we also need to pay attention to filtration power and flow in order to maintain good water quality.</p>		

<b>MO-13</b>	<b>NAME(S)</b>	<b>CHIANG HOI PAN</b>
<b>ORGANIZATION</b>	<b>Macau Baptist College</b>	
<b>TITLE OF ENTRY</b>	<b>Tunnel Air Purification Device</b>	
<p>Our works can be applied in semi-enclosed tunnels to effectively decompose the harmful gases emitted by cars in the tunnels, thereby reducing carbon emissions. After entering the purification device, the harmful gas will be washed by the water atomization device, and the suspended particles will be washed. Then, the photocatalyst reaction will be carried out, in which the harmful polluting gas will be purified and sterilized to minimize the content of toxic substances in the air. The purified gas will emit carbon dioxide, and quicklime is used to absorb carbon dioxide through the combination of quicklime and carbon dioxide, thus solving the carbon emission problem. The device is located at the top of the tunnel and is a structure embedded at the top of the tunnel. The exterior of the work model is a square structure, and its built-in purification device is an inverted <math>\pi</math>-type PVC tube structure. The PVC tube is the main purification device, which is responsible for decomposing air hazards. At the same time, the external cuboid structure is responsible for loading spare parts, the water circulation system, and the quicklime filter plate. Our innovations are: (i) purifying the air while reducing carbon emissions and achieving carbon neutralization; (ii) eco-friendly use of water resources cycle; iii) Efficient solution to tunnel pollution problems.</p>		

## MACEDONIA

<b>MK-01</b>	<b>NAME(S)</b>	<b>Dea Despotovska / Nina Lameva</b>
<b>ORGANIZATION</b>	<b>Yahya Kemal College</b>	
<b>TITLE OF ENTRY</b>	<b>SOLAR POWERED ENERGY EFFICIENT OXYHYDROGEN GENERATOR</b>	
<p>With this project we wanted to see if we could build an energy efficient hydrogen generator. They are many examples of HHO Generators that use electricity for the principal of electrolysis to produce hydrogen gas that can be used as a fuel. We wanted to use alternative source of energy that comes from natural elements that are available in large quantities such as wind water Sun Etc. One of the widely available Alternative Energy source is water. So, we combined solar energy and hydrogen generator to achieve more reliable and energy efficient alternative.</p>		

## MALAYSIA

<b>MY-01</b>	<b>NAME(S)</b>	<b>AHMAD RAMLI BIN MOHAMED ISMAIL</b>
<b>ORGANIZATION</b>	<b>INSTITUT LATIHAN PERINDUSTRIAN IPOH</b>	
<b>TITLE OF ENTRY</b>	<b>WALKABLE LADDER WITH ROTATABLE ACTUATOR</b>	
<p>THE PRESENT INVENTION DISCLOSES A WALKABLE LADDER. THE WALKABLE LADDER COMPRISES A FIRST STEP FRAME COMPRISING A FIRST SET OF CASTERS RESTING ON A FLOOR, A SECOND STEP FRAME COMPRISING A SECOND SET OF CASTERS, A ROTATABLE ACTUATOR ANGULARLY RESTING ON A STOP STEP OF THE SECOND STEP FRAME IN A FIRST POSITION COMPRISING A PLANAR MEMBER HAVING A PERIMETER DEFINED BY A FIRST OPPOSED SIDE, A SECOND OPPOSED SIDE, A FIRST OPPOSED END AND A SECOND OPPOSED END, A PAIR OF ENGAGING ARMS HAVING A DISTAL END COUPLED TO THE FIRST STEP FRAME AND A PROXIMAL END PIVOTABLY COUPLED TO THE ROTATABLE ACTUATOR ON A ROTATING OR TILTING AXIS, A PAIR OF LEGS COMPRISING A FLOOR- CONTACTING END FREELY SUSPENDED FROM THE ROTATABLE ACTUATOR, AND A VAMP FOR ENGAGING A FOOT OF A LADDER OPERATOR. THE ROTATABLE ACTUATOR, UPON RECEIVING A FORCE AT THE VAMP BY THE FOOT THEREOF, ROTATES OR TILTS ALONG THE SAID ROTATING OR TILTING AXIS BETWEEN THE FIRST POSITION AND A SECOND POSITION TO RELEASE AND REGAIN THE FLOORCONTACTING END WHICH FRICTIONIZES THE FLOOR TO INDUCE SIMULTANEOUS MOVEMENT OF THE FIRST SET OF CASTERS AND THE SECOND SET OF CASTERS ALONG THE SAID FLOOR.</p>		

<b>MY-02</b>	<b>NAME(S)</b>	<b>MUHD KHAIZER OMAR / MOHDZARIF ROHAN / MUHAMMAD NURFIRDAUS AMRAN / ABDUL HALIM ADNAN / MUHAMMAD LUQMANULHAKIM IDRIS THIBASHINI SELVAKUMAR / SITI AINA AMIRAH BINTI MOHAMAD AMER</b>
<b>ORGANIZATION</b>		UNIVERSITI PUTRA MALAYSIA
<b>TITLE OF ENTRY</b>		<b>SMART SCOOP</b>
<p>A weight scale for fertilizers refers to a device used to accurately measure the weight of fertilizer materials. This is important in agriculture, horticulture, and landscaping, where precise quantities of fertilizer are required to be added to soil in order to promote healthy plant growth. We adopted CDIO (Conceive, Development, Implement and Operate) to develop the prototype. The prototype able to accurately measures the fertilizer or materials for the plant and was easy to use and practical.</p>		

<b>MY-03</b>	<b>NAME(S)</b>	<b>PROF. TS. DR. WAN ABDUL RAHIM BIN WAN MOHD ISA / DR. AHMAD IQBAL HAKIM BIN SUHAIMI / DR. NURULHUDA BINTI NOORDIN / SITI SARAH BINTI HASSAN</b>
<b>ORGANIZATION</b>		Universiti Teknologi MARA
<b>TITLE OF ENTRY</b>		<b>A MOBILE GAME-BASED LEARNING APPLICATION ABOUT SEMAI PEOPLE (KENALI SEMAI)</b>
<p>Kenali Semai is a mobile game-based learning application aimed at preserving the Semai people's culture for indigenous tourism. It utilizes gamification elements, such as progress, digital storytelling, time pressure, and scoring to engage users in learning about the Semai culture in the Malay language. The application follows the Digital Educational Game Life Cycle (DEG) methodology, ensuring effective design, implementation, and feedback. User testing confirms its ease of use and informative content. Download Kenali Semai on Google Play Store:  <a href="https://play.google.com/store/apps/details?id=com.pogames.kenalisemai">https://play.google.com/store/apps/details?id=com.pogames.kenalisemai</a></p>		

<b>MY-04</b>	<b>NAME(S)</b>	<b>MOHD FARUHI BIN JOHARI / MUHAMMAD NAUFAL HAZIM BIN MUHAMMAD FADZLY / MUHAMMAD EZRRY HAIKAL BIN SABARUDDIN / NOOR ALEEYA SOFEA BINTI MOHD KHAIRUL AZAM / NUR AUNI YASMIN BINTI MOHD AZMAN</b>
<b>ORGANIZATION</b>		SEKOLAH MENENGAH TEKNIK ALOR SETAR (ALOR SETAR TECHNICAL SECONDARY SCHOOL)
<b>TITLE OF ENTRY</b>		<b>"SECURITY DOOR FOR FOOD BANK"</b>
<p>Security Door for Food Bank was created to improve the distribution of food bank food to students who need it. Before this innovation was produced, food would be distributed by teachers during break time, face-to-face, after Security Door for Food Bank was introduced, students who had registered with the school's welfare unit would access the door of the food cupboard through students registered cards and be able to take it whenever needed. This security door is an automatic door that uses Blynk IOT and links with the Arduino Software and board ESP32 to operate the food bank door.</p>		

<b>MY-05</b>	<b>NAME(S)</b>	<b>ASST PROF DR NORZALIFA ZAINAL ABIDIN / KALAM PIE / NURUL AINA SUHAILA MOHD NIZA</b>
<b>ORGANIZATION</b>		JUNGLE SCHOOL GOMBAK MALAYSIA, IIUM JSI AND AAD KAED
<b>TITLE OF ENTRY</b>		<b>JUNGLE SCHOOL INDIGENOUS GREEN OUTREACH- "MENGHIJAU"- EMBRACING OUR LIVING HERITAGE</b>
<p>THIS INVENTION AND INITIATIVE ENHANCE THE IMPORTANCE OF OUR INDIGENOUS ORANG ASLI LOCAL GREENERIES/ ENDEMIC PLANTS TO SUSTAIN THE LIVELIHOOD AND LIVING HERITAGE IN OUR NATURAL SURROUNDING. REPLENISHING AND SHARING OF THE INDIGENOUS TRADITIONS TO ENSURE SUSTAINABLE FOOD SECURITY, ARTS AND CRAFTS HERITAGE AND LIVELIHOOD FOR THE WELLNESS OF THE COMMUNITIES. IT IS AN EXPANSION OF THE LEARNING MODULES TO SUPPORT EDUCATIONAL TOURISM AND UNDERSTANDING THE IMPORTANCE OF THE CONSERVATION AND BIODIVERSITY OF OUR FOREST, RIVERS, JUNGLES AND MANGROVES TO COMBAT OUR CLIMATE CHANGE AND DYING HERITAGE. INTRODUCING THE INDIGENOUS ORANG ASLI HERITAGE TO THE GLOBAL, NATIONAL LEVEL AND THE GENERAL PUBLIC WITH BUDDY SYSTEM LEARNING SYSTEM.</p>		

<b>MY-06</b>	<b>NAME(S)</b>	<b>Assoc. Prof. Ts. Dr. Suliadi F. Sufahani / Prof. Ir. Ts. Ruzairi A. Rahim / Assoc. Prof. Dr. Mohd A.A. Abdullah / Assoc. Prof. Ts. Dr. Mohd A. Yusof / Mr. Mohd H.A. Wahab</b>
<b>ORGANIZATION</b>		Universiti Tun Hussein Onn Malaysia
<b>TITLE OF ENTRY</b>		<b>Malaysian Secondary Boarding School Menu Planning System With Post-Optimality Process</b>
<p>A boarding school student's nutrition is crucial for growth, tissue repair, and disease prevention. Manual menu planning is complex and time-consuming. This study aims to develop a mathematical model and decision support system for boarding school menus that meet nutrient requirements while saving costs. The system allows flexibility to change menus even after optimization. Data from educational authorities were collected. Menu planning is a well-known optimization problem. The model, solved using Binary Programming and the "Sufahani-Ismael Algorithm," generates balanced menus meeting all constraints. The user can change the menu even after obtaining the optimal solution. A recalculation process, known as the "Post-Optimality Process," will take place.</p>		

<b>MY-07</b>	<b>NAME(S)</b>	<b>Assoc. Prof. Ts. Dr. Suliadi Firdaus Sufahani / Miss Wan Noor Afifah Wan Ahmad / Assoc. Prof. Dr. Mohd Saifullah Rusiman / Prof. Ir. Ts. Ruzairi Abdul Rahim / Assoc. Prof. Ts. Dr. Anuar Mohd Yusof</b>
<b>ORGANIZATION</b>		Universiti Tun Hussein Onn Malaysia
<b>TITLE OF ENTRY</b>		<b>Solving The Royalty Payment Problem Through SANBR-Algorithm</b>
<p>This research focuses on maximizing the performance index of a non-standard Optimal Control problem. However, the final state value is unknown, leading to a nonzero terminal shadow value. To address this challenge, the SANBR-Algorithm was proposed, a new modified shooting method. The continuous approximation of the hyperbolic tangent (tanh) approach was taken to encounter the royalty function's non-differentiability. The direct methods (Euler, Runge-Kutta, Trapezoidal, Hermite-Simpson approximation) served as a validation process. We anticipate that the modified shooting method will yield improved optimal results, making it a valuable contribution for researchers and academicians exploring innovative solutions to real-world problems.</p>		

<b>MY-08</b>	<b>NAME(S)</b>	<b>PROFESSOR DR. ABDURAHMAN HAMID NOUR / ASSOCIATE PROFESSOR DR. AZHARY HAMID NOUR / ALI HASSAN ABDULRAHMAN AL-SAGGAF / MOHD ARMAN BIN KADIR</b>
<b>ORGANIZATION</b>		UNIVERSITY MALAYSIA PAHANG, UMP
<b>TITLE OF ENTRY</b>		<b>A NOVEL DEMULSIFIER ND-20-02 ASSISTED MICROWAVE TECHNOLOGY FOR SEPARATION OF CRUDE OIL EMULSIONS</b>
<p>With the increasing energy crisis and prices, as well as the drive to reduce CO<sub>2</sub> emissions, universities and industries are being challenged to develop new technologies in order to reduce energy consumption, meet legal emission requirements, reduce costs, and improve quality. This low-cost and environmentally friendly natural surfactant for demulsification (separation) of crude oil emulsions was developed in the laboratory and characterized using standard analytical tools. Further the formulated surfactant (demulsifier) has been utilized to prepare o/w emulsions of heavy crude oils separation collected from different oil fields. The formulated surfactant (demulsifier) is environmentally friendly, economically competitive, and technically visible.</p>		

<b>MY-09</b>	<b>NAME(S)</b>	<b>PROFESSOR DR. ABDURAHMAN HAMID NOUR / ASSOCIATE PROFESSOR DR. AZHARY HAMID NOUR / ALI HASSAN ABDULRAHMAN AL-SAGGAF / DR. NORASYIKIN ISMAIL</b>
<b>ORGANIZATION</b>		UNIVERSITY MALAYSIA PAHANG, UMP
<b>TITLE OF ENTRY</b>		<b>A HYBRID ULTRASONIC MEMBRANE ANAEROBIC SYSTEM (UMAS) IN TREATING WASTEWATER</b>
<p>Following the energy crisis, price increases, and the drive to reduce CO<sub>2</sub> emissions, alternative energy sources are in high demand in order to reduce energy consumption, meet legal emission requirements, and reduce costs and improve quality. Due to the high chemical oxygen demand (COD), total suspended solids (TSS), and biochemical oxygen demand of wastewater, direct discharge causes significant environmental pollution (BOD). Traditional wastewater treatment methods have both economic and environmental disadvantages. As an alternative, cost-effective method for treating wastewater, a hybrid ultrasonic assisted-membrane anaerobic system (UMAS) was designed in this invention.</p>		

<b>MY-10</b>	<b>NAME(S)</b>	<b>GOMATHY SANKARAN / HABILHASHINI A/P ARUMUGAM / HABINHAYA A/P ARUMUGAM / KAYLLEINE JOANNE A/P SARAVANAN / MARIA MIRASHINI A/P JAMES / SHAASHINI A/P SANTNADASS</b>
<b>ORGANIZATION</b>		SJKT KANGKAR PULAI
<b>TITLE OF ENTRY</b>		<b>Organic Roselle Beauty Soaps</b>
<p>Organic Roselle Beauty Soaps is made from natural material that is herbal Roselle leaves. The process of making these soaps takes less time. Less material usage to make Organic Roselle Beauty Soaps. Materials to make Organic Roselle Beauty Soaps are easy to get and cheap. 1.Grower of natural leaves will experience greater yields and profit. This product can produce facial soap, mask, serum. You can buy this product at an affordable price. This product is thick and durability. The product prevents skin harshness and antioxidants. This product can be sustainable in the market as material used to produce this product can be grown and reproduced always. Product will always be available as it is produced and manufactured locally. This product is based on Go green concept and it is safe for the environment. This product is produced at a low cost. This product is allergic free due to those herbal leaves are anti-virus.</p>		

<b>MY-11</b>	<b>NAME(S)</b>	<b>Assoc. Prof. Dr. Nasreen Badruddin / Assoc. Prof. Dr. Irraivan Elamvazuthi / Assoc. Prof. Dr. Ibrahima Faye / Rishu Gupta</b>
<b>ORGANIZATION</b>		Universiti Teknologi PETRONAS
<b>TITLE OF ENTRY</b>		<b>EDiT: Enhanced Diagnostic Tool</b>
<p>Enhanced Diagnostic Tool (EDiT) is a system consisting of enhanced ultrasound imaging capabilities using advanced enhancement, segmentation, and clustering algorithms to expedite shoulder musculoskeletal consultation and treatment for pathological conditions such as tear and tendinosis.</p>		

<b>MY-12</b>	<b>NAME(S)</b>	<b>GOMATHY SANKARAN / SHARWIN A/L K KALITHAS / YUVAN MUNISHWARAN A/L POOBALAN / RISHVAN A/L SELVARAJAN / VETRIVEL A/L MAYATHEVAN</b>
<b>ORGANIZATION</b>		<b>SJKT KANGKAR PULAI</b>
<b>TITLE OF ENTRY</b>		<b>BIO GONG COFFEE</b>
<p>Coffee is one of the world's most popular beverages. Worldwide, experts estimate that people consume around 2.25 billion cups of coffee per day. When people think of coffee, they usually think of its ability to provide an energy boost. However, over the past few years, a series of studies have come out showing that drinking coffee has significant health benefits, such as a lower risk of cancer (liver, colon and rectal cancer), type 2 diabetes, heart failure, premature ageing, cognitive decline, etc. Coffee is identified as (potentially) the biggest source of antioxidant power in the world: new research indicates that taking 3-5 cups of coffee can serve up to 60 percent of daily antioxidant intake requirement. Coffee has more antioxidants than both green and black teas, red wine, dark chocolate...and even blueberries! In our project we were able to create a new coffee flavour using Dates Seeds (Ajwa) to create the coffee smell. Dates are rich in copper, selenium and magnesium which are very important nutrients to keep your bone healthy and prevent bony related disorders. It is also rich in vitamin K which helps to regulate the coagulation of blood and helps metabolize your bones. We also added Gongora leaves.</p>		

<b>MY-13</b>	<b>NAME(S)</b>	<b>Lei Mee THIEN / Chia Yean LIM</b>
<b>ORGANIZATION</b>		<b>School of Education Studies &amp; School of Computer Sciences, Universiti Sains Malaysia</b>
<b>TITLE OF ENTRY</b>		<b>PositiveSat: A Mobile-Based Positive School Attribute Assessment Application</b>
<p>There is lacking efficient and interactive tool to measure positive school attributes in Malaysian school contexts. Hence, a mobile-based positive school attributes' assessment application (PositiveSAT), was created to serve this need. The application has a questionnaire tool which evaluates eight domains of positive school attributes and produces positive school index, at individual teacher's level. It also has a dashboard tool which analyzes and visualizes categorical and overall teachers' positive school index holistically. Most importantly, this application triggers the school's stakeholder when it is necessary to improve the school's positive school level, and ultimately support teachers and students' psychological well-being.</p>		

<b>MY-14</b>	<b>NAME(S)</b>	<b>Dr HU LAEY NEE / Dr NORSARIHAN AHMAD / TAN YOONG MING / ERSA NIA BINTI KAMARULZAMAN / SHAFIQAH BINTI MOHTAR</b>
<b>ORGANIZATION</b>		<b>INSTITUTE OF TEACHER EDUCATION, SARAWAK CAMPUS, SARAWAK, MALAYSIA &amp; SJKC MANONG, KUALA KANGSAR PERAK, MALAYSIA.</b>
<b>TITLE OF ENTRY</b>		<b>"L.O.V.E. (Language Online Virtual Exploration): Gaming for Malay Language Mastery"</b>
<p>This innovation presents an innovative approach to learning Malay through online games. With the increasing popularity of online gaming, harnessing this medium for educational purposes can engage learners and enhance their language acquisition experience. By integrating the Malay language into interactive and immersive gaming environments, learners can practice vocabulary, grammar, and language skills in a fun and engaging manner. The use of online games as a learning tool for the Malay language offers a promising avenue for promoting language learning and cultural appreciation, appealing to the interests of digital-native learners in today's technology-driven world.</p>		

<b>MY-15</b>	<b>NAME(S)</b>	<b>Muhammad Firdhaus Sanusi / Mohd Zaki Ayob</b>
<b>ORGANIZATION</b>		<b>UniKL BMI Gombak, Selangor</b>
<b>TITLE OF ENTRY</b>		<b>Fish Measurement System</b>
<p>Sampling of fish is important in aquaculture, whereby fish length and weight are measured to determine condition and growth. However, manual handling during the sampling process is time-consuming and stressful for fish. An Artificial Intelligence-based and Computer Vision-based system is the solution. It measures fish length and estimates weight using Length-Weight Relationship. This technology will help to measure the length and automatically estimate the weight of the fish. By automating the measurement process, the system will save time, reduce stress on fish, and provide crucial data for aquaculture operations. This will provide benefits to the aquaculture industry.</p>		

<b>MY-16</b>	<b>NAME(S)</b>	<b>Tan Hao Xuan / Soo Po Ming, Terreace</b>
<b>ORGANIZATION</b>		<b>SMJK CHUNG LING</b>
<b>TITLE OF ENTRY</b>		<b>Colorblindness helper</b>
<p>This project focuses on developing a traffic light detector that can accurately detect and determine the color of traffic lights. The detector utilizes a color detection system to analyze the colors displayed on the traffic light. By doing so, it provides essential information to drivers, particularly those with colorblindness, who may have difficulty discerning the colors themselves. Our project aims to empower colorblind individuals, allowing them to drive safely and confidently. By providing real-time instructions based on traffic light colors, we enhance accessibility and independence. We believe this technology can revolutionize the driving experience for colorblind individuals and improve road safety for all.</p>		

<b>MY-17</b>	<b>NAME(S)</b>	<b>Lim Zhi Xuan / Zarul Fitri bin Zaaba</b>
<b>ORGANIZATION</b>	Universiti Sains Malaysia	
<b>TITLE OF ENTRY</b>	<b>MyDailyPrice (MDP)</b>	
<p>MyDailyPrice is a proposed integrated platform to enhance grocery shopping and protect consumer rights. It consolidates accurate food price information from reliable governmental sources. Beyond displaying ceiling prices, it enables users to navigate price comparisons among stores, offering convenience and informed decision-making. MyDailyPrice even provides price prediction based on historical data to add further value. The platform offers a user-friendly system for lodging complaints against unethical merchants selling food at unusually high prices. MyDailyPrice aims to empower consumers, promote fair practices, and streamline access to crucial information concisely and efficiently for consumers in Malaysia.</p>		

<b>MY-18</b>	<b>NAME(S)</b>	<b>Chia Wai Xuan / Zarul Fitri bin Zaaba</b>
<b>ORGANIZATION</b>	Universiti Sains Malaysia	
<b>TITLE OF ENTRY</b>	<b>MyKasihApp(MYA)</b>	
<p>MyKasihApp(MYA) is a comprehensive mobile application designed to address the critical issues of reporting violent cases and providing mental health support. The application enables users to easily report incidents of violence, ensuring prompt intervention and improved safety. Additionally, it offers a range of mental health resources, including helpline numbers and counselling services. By leveraging technology and fostering collaboration among stakeholders, the application aims to create a safer environment, raise awareness, and support individuals affected by violence. With scalable features, data analytics, and global potential, it significantly advances violence prevention and mental health support.</p>		

<b>MY-19</b>	<b>NAME(S)</b>	<b>Amal A.M. Elgharbawy (IIUM) / Lama Al-afandi (IIUM) / Najihah Mohd Noor (IIUM) / Muhammad Zulhaziman Mat Salleh (UKM) / Mohd Roslan Mohd Nor (UM) / Adeeb Hayyan (UM)</b>
<b>ORGANIZATION</b>	International Islamic University Malaysia	
<b>TITLE OF ENTRY</b>	<b>A Novel Deep Eutectic Solvent Formulation for Enhanced Antimicrobial activity of Active Pharmaceutical Ingredients</b>	
<p>This invention involves the development of a deep eutectic solvent (DES), which is a mixture of a specific hydrogen bond donor and hydrogen bond acceptor, and the formulation in this specific study consists of thymol and decanoic acid, specifically designed to enhance the biological efficacy of active pharmaceutical ingredients. The design involves a screening through COSMO-RS computational method, then the formulation of the selected DESs will be done to confirm the eutectic state. DES can show an outstanding property involves the low volatility compared to other organic solvents, which leads to their ease of preparation and safer working conditions.</p>		

<b>MY-20</b>	<b>NAME(S)</b>	<b>Amal A.M. Elgharbawy (IIUM) / Nor Azrini Nadiha Azmi (IIUM) / Amira Hendawy (IIUM) / Nurhidayu Al-Saari (IIUM) / Hamzah Mohd Salleh (UNISSA)</b>
<b>ORGANIZATION</b>	International Islamic University Malaysia	
<b>TITLE OF ENTRY</b>	<b>A Novel Nanoemulsion Formulation from Fish by-products with Wound Healing Properties</b>	
<p>This invention introduces a groundbreaking nanoemulsion formulated from fish oil, demonstrating remarkable wound healing capabilities. The formulation capitalizes on the intrinsic anti-inflammatory and regenerative properties of omega-3 fatty acids in fish oil. The nanoemulsion's small droplet size ensures enhanced penetration and delivery of the bioactive components to the wound site. Our results exhibit accelerated wound closure rates, reduced inflammation, and improved tissue regeneration in pre-clinical models. This novel fish oil-based nanoemulsion offers a promising alternative for wound management, addressing the limitations of conventional treatments and potentially revolutionizing the healthcare sector.</p>		

<b>MY-21</b>	<b>NAME(S)</b>	<b>Ir Dr Hazlina Husin / Dr Amni Hasliinda Alpandi / Ts Dr Mohd Akhmal Muhamad Sidek</b>
<b>ORGANIZATION</b>	Universiti Teknologi PETRONAS / Universiti Teknologi Malaysia	
<b>TITLE OF ENTRY</b>	<b>AGRICULTURE-TO-ENERGY: GREEN SOLUTION FOR PETROLEUM INDUSTRY</b>	
<p>In empowering the United Nations (UN) Sustainable Development Goal, oil industries worldwide are inclined towards the usage of organic wax inhibitor when combatting wax deposition issue during crude oil production. This is because synthetic chemical inhibitors are costly and have potential to create environmental problems when oil spillage or seepage occurred during transportation or operation. This invention aimed to show that Jatropa-based inhibitors extracted from Jatropa seed is an effective wax inhibitor with a less harmful towards environment. Jatropa is a non-edible plant and can grow in rural areas.</p>		

<b>MY-22</b>	<b>NAME(S)</b>	<b>Dipl-Ing. Ir.Narendran Ramasenderan / Cajun Tai Ka Joon / Trishah Rajendran / Krishna Ravinchandra</b>
<b>ORGANIZATION</b>		<b>ASIA PACIFIC UNIVERSITY</b>
<b>TITLE OF ENTRY</b>		<b>Fresh Fruit Bunch (FFB) harvest detection Drone for Palm Plantation</b>
<p>The Fresh Fruit Bunch (FFB) harvest detection drone is an advanced and autonomous solution for palm plantations. It employs drone technology with imaging and sensors to monitor palm fruit ripeness in real-time. Using pre-mapped data, the drone surveys the plantation area, tracking the location of each palm tree. By periodically assessing fruit ripeness, the drone generates an optimized harvest plan, providing efficient routes for workers to extract ripe FFBs. This technology streamlines the process, optimizing resources, and maximizing productivity in palm plantations. With its precision and automation, the FFB harvest detection drone revolutionizes palm fruit harvesting, enhancing efficiency and yield.</p>		

<b>MY-23</b>	<b>NAME(S)</b>	<b>Dipl-Ing. Ir.Narendran Ramasenderan / Prof. Ir. Eur. Ing. Ts. Dr. Vinesh Thiruchelvam / Assoc. Prof. Ir. Dr. Siva Kumar Sivanesan / Ng Joo Kiat / Cheng Yi Heng</b>
<b>ORGANIZATION</b>		<b>ASIA PACIFIC UNIVERSITY</b>
<b>TITLE OF ENTRY</b>		<b>RescueAi – Disaster Metaverse with Robotic Autonomy</b>
<p>The increasing severity of climate change-induced natural disasters necessitates innovative approaches for effective disaster response. This project proposes a system that harnesses machine vision aerial robots and utilizes the digital twin metaverse to enhance prediction, management, and coordination during disaster events. By analyzing real-time data streams and converging information between multiple rescue teams, the system improves situational awareness and facilitates accurate risk models. The automation of search and rescue operations using robots further aids in saving lives and mitigating property damage. This system presents a promising solution for adapting to the new norm of unpredictable and extreme natural events.</p>		

<b>MY-24</b>	<b>NAME(S)</b>	<b>Dipl-Ing. Ir.Narendran Ramasenderan / Rohit Thomas / Ir.Ts.Dr.Yvette Shaan-Li Susiapan / Ir. Ts. Dr. Alexander Chee Hon Cheong</b>
<b>ORGANIZATION</b>		<b>ASIA PACIFIC UNIVERSITY</b>
<b>TITLE OF ENTRY</b>		<b>Alzhimex : Light therapy and gamification for Alzheimer's</b>
<p>Alzhimex is a groundbreaking solution that integrates light therapy, gamification, non-contact microwave sensors, and data analytics to address the challenges faced by individuals with Alzheimer's disease. By combining individualized light therapy with gamification, it enhances cognitive function, alertness, and sleep quality while reducing depression and anxiety. The light therapy is personalized based on individual response and health professional input. Alzhimex empowers caregivers to manage patient care at home, incorporating remote surveillance through drones and non-contact microwave sensors. This comprehensive solution aims to enhance well-being and quality of life for individuals with Alzheimer's while supporting caregivers and healthcare professionals.</p>		

<b>MY-25</b>	<b>NAME(S)</b>	<b>Dipl-Ing. Ir.Narendran Ramasenderan / Prof. Ir. Eur. Ing. Ts. Dr. Vinesh Thiruchelvam / Assoc. Prof. Ts. Dr. Sathish Kumar Selva Perumal / Arvin Ravindran / Sharen Chrisan Fabian Perera</b>
<b>ORGANIZATION</b>		<b>ASIA PACIFIC UNIVERSITY</b>
<b>TITLE OF ENTRY</b>		<b>MaviHub : Machine vision with robotic autonomy</b>
<p>The MAVI Box Hub is an innovative industrial metaverse digital twin that revolutionizes factory monitoring and operational analysis. It combines sensor fusion data and advanced machine vision cameras to detect defects, monitor carbon emissions, and ensure security and safety. The industrial metaverse collects and geotags data from the MAVI Box, drones, and CCTV cameras, optimizing it through synthetic data training. With on-edge data processing and fog-based post-processing, the system ensures data security. The MAVI Box Hub offers scalability, customization, and potential applications across various industries, fostering a more efficient and intelligent approach to manufacturing operations.</p>		

<b>MY-26</b>	<b>NAME(S)</b>	<b>Professor Dr. Mohd Ikmar Nizam Haji Mohamad Isa / Associate Professor Dr. Azwani Sofia Ahmad Khair / Mohd Ibnu Haikal Ahmad Sohaimy</b>
<b>ORGANIZATION</b>		<b>Universiti Sains Islam Malaysia</b>
<b>TITLE OF ENTRY</b>		<b>Celf Biofilm: Green Conducting electrolyte</b>
<p>Batteries have become ubiquitous in modern times, but they had problems such as expensive and hazardous. The liquid electrolyte in conventional battery is prone to leakage, reactive and flammable which pose risk to consumers due to toxic and hazardous properties of the organic materials. So, finding solutions to all these problems is crucial. Solid-state electrolytes are touted as the best solution for these problems though it has low ionic conductivity compared to liquid electrolyte. This has become its major flaw from being commercialized and Celf biofilm is trying to bring the idea into fruition.</p>		

<b>MY-27</b>	<b>NAME(S)</b>	<b>Dr. Thaw Zin / Dr. Aloysius Yapp / Ms. Lim Chai Kim / Dr. Avneet Kaur / Esther Lau Yi Ci / Natalie Wong Yong Xin / Kiea Wei Shen / Lim Siang Zhi</b>
<b>ORGANIZATION</b>	MK FMHS, CITC, UTAR	
<b>TITLE OF ENTRY</b>	<b>Integrating 3D CGI Animal Therapy, AI, and Pathfinding in a Game Engine for Improving Mental Health and Age-friendly Environment</b>	
<p>This innovative project combines 3D CGI animal therapy (a companion to both old age and the young, as part of the Age-friendly Environments Program), artificial intelligence (AI), and pathfinding in a game engine to improve mental health. This project aims to leverage cutting-edge technologies to create a virtual environment (to reduce stress and prevent stigmatization, loneliness and social isolation) as part of therapeutic interventions, providing a new approach to improve patient outcomes.</p>		

<b>MY-28</b>	<b>NAME(S)</b>	<b>Nur Ayuni Jamal / Bisma Parveez</b>
<b>ORGANIZATION</b>	International Islamic University Malaysia	
<b>TITLE OF ENTRY</b>	<b>The Possibility of Employing Diamond Reinforcement in Strengthening Porous Aluminum</b>	
<p>Porous metals are often associated with low strength hence reinforcement addition in the current study was initiated to strengthen the porous metals while maintaining its peculiar properties. In this investigation, a newly porous aluminum (Al) was designed by exploiting the use of diamond reinforcement and polymethyl methacrylate (PMMA) space holder and fabricated via powder metallurgy method. Maximum values of 45.12 MPa and 13.68 MJ/m<sup>3</sup> were obtained for the plateau stress and energy absorption capacity with the addition of 9 wt.% of titanium (Ti)-coated diamond. It is hoping that these findings may accelerate the growth of the transportation industry with guaranteed reproducibility and reliability.</p>		

<b>MY-29</b>	<b>NAME(S)</b>	<b>Dr. Jamelaa Bibi bt Abdullah / Dr. Sham bin Ibrahim / En. Ashraff bin AB Rahman / Pn. Hamsiah bt Mohd Dahalan / Pn. Saadah bt Sumrah</b>
<b>ORGANIZATION</b>	Institut Aminuddin Baki, Bandar Enstek	
<b>TITLE OF ENTRY</b>	<b>i-ProPeKS</b>	
<p>i-ProPeKS is an innovation product for the purpose of recording, analysing and sharing big data using a digital platform. i-ProPeKS is a personalized dashboard and interactive reports. It's an efficient way to organize big data in a systematic way, access to information in real time data, a quick way to find appropriate data when needed immediately. i-ProPeKS developed using the Design Thinking method. The real time data recorded through data entering (google form) captured in google spreadsheet and visualized in power BI. i-ProPeKS able to help the organization collaborate the up-to-date data to show evidence and make decision.</p>		

<b>MY-30</b>	<b>NAME(S)</b>	<b>MOHD ANIS BIN AZINAN / MUHAMMAD AZARUDIN BIN CHE AZMAN / SITI HAWA IZZAH BINTI YAHIDI / NURSHILA BINTI ABDUL RAZAK</b>
<b>ORGANIZATION</b>	BUTTERWORTH VOCATIONAL COLLEGE	
<b>TITLE OF ENTRY</b>	<b>SKPKVBW : CHEAP STUDENT ATTENDANCE SYSTEM</b>	
<p>SKPKVBW is a low-cost system to record and display student attendance information directly on the Internet. The objective of SKPKVBW was developed to make it easier for teachers to know student attendance information quickly and systematically recorded and easily accessible via the internet. SKPKVBW was developed using Raspberry Pi 3 B+ for the purpose of recording and sending attendance information directly to the server. Costs for information storage space and website hosting are also free when information is only stored in the form of a Google Spreadsheet and information is displayed using Google Site.</p>		

<b>MY-31</b>	<b>NAME(S)</b>	<b>NUR HANIM BINTI OTHMAN / NORSHAHIRA BINTI KAMARZAMAN / SITI NOOR AISHAH BINTI ABDUL LATIF SABRI</b>
<b>ORGANIZATION</b>	KOLEJ KOMUNITI JELEBU	
<b>TITLE OF ENTRY</b>	<b>HalalFactory SetPro (HSPPro)</b>	
<p>Halal Business worth millions and expected to grow at RM 50 billion (USD 10.8 billion) in 2023, according to Department of Prime Minister of Malaysia (2023). There are many companies that produce Halal Products. Unfortunately, there are companies that not comply with Halal Regulations, laws and Standard. This led to products seized and compounds by the Malaysia Authority. By this problem statement, HalalFactory SetPro (HSPPro) application is designed to give guideline to Halal Manufacturers in setup halal factory operation, requirements and documents. The application consists of four modules: Introduction, Important Information, Document and Law. The application is in Malay Language as the target are Small Medium Entrepreneur (SMEs), community and students. All information regarding Halal Laws, regulations and Standard is compiled and analyzed. Brainstorming of Apps Design, Features and Interface is done. The application is tested by users for final touch on the application. Feedback from users are collected and analysed.</p>		



<b>MY-32</b>	<b>NAME(S)</b>	<b>Prof. Dr. Ahmed Osumanu Haruna / Dr. Liza Nuriati Lim Kim Choo / Dr. Latifah Binti Omar / Dr. Adiza Alhassan Musah / Assoc. Prof. Dr. Rose Abdullah / Ng Ji Feng / Dr. Syahirah Binti Haji Shahlehi</b>
	<b>ORGANIZATION</b>	Universiti Islam Sultan Sharif Ali (UNISSA) and Universiti Putra Malaysia (UPM)
	<b>TITLE OF ENTRY</b>	<b>Nature Inspired Solutions for Healthy Soils and Healthy Food</b>
<p>Our innovation is a promising approach for soil health restoration and high crop yield to increase farmers' income because the high sources of organic based nitrogen and carbon waste materials were reacted to produce organic amendments which are able to provide essential nutrients, neutralize soil acidity, detoxify aluminium and iron toxicity, and reduce leaching of nutrients to conserve the environment. Our innovation has been proven to increase the yields of rice (from four to five t ha<sup>-1</sup> to 10 to 12 t ha<sup>-1</sup>), pineapple (from 65.4 to 76.3 t ha<sup>-1</sup>), and papaya (from 30 to 62.4 t ha<sup>-1</sup>). This suggests that our innovation can increase crop yield, yield quality, and farmers' income.</p>		

<b>MY-33</b>	<b>NAME(S)</b>	<b>MOHAMAD IZZAT BIN RAMELI / NUR ATIQA BINTI JEFFRY / NUHA BINTI AZHAR / SITI NOR DANISHA BINTI BADRUDDIN / NASYITAH QABSAB BINTI SOHARNI @ MOHD SOHAIMI</b>
	<b>ORGANIZATION</b>	KOLEJ VOKASIONAL KUALA BERANG
	<b>TITLE OF ENTRY</b>	<b>THE FLEXIBLE CORN TART</b>
<p>The intake of corn in the diet is still less practiced though corn has its own properties and is widely used in desserts. Our purpose of using corn fibre is to add a variety of flavours to the tart apart from avoiding it being discarded which causes environmental pollution. Besides being used as a filling, we also use it as an additional ingredient in the production of shell tarts. In addition, it is also one of the ingredients to increase soil fertility. Therefore, its use in food products is very good and beneficial to consumers, other than aiming to avoid waste in food industry.</p>		

<b>MY-34</b>	<b>NAME(S)</b>	<b>MOHAMAD IZZAT BIN RAMELI / NUR ATIQA BINTI JEFFRY / AQMAR AIMAN BIN AZWAN / MUHAMMAD HARITH BIN SAIFUL ADLI / MUHAMMAD TAUFIQ BIN ALIAS</b>
	<b>ORGANIZATION</b>	KOLEJ VOKASIONAL KUALA BERANG
	<b>TITLE OF ENTRY</b>	<b>OIL PALM ART</b>
<p>The consumption of palm oil in our everyday diet is still less practiced though palm oil has its own benefits as well as the production of cooking oil. The purpose of this study is to identify the appropriateness of the addition of palm oil in the 'shell tart' with the development of current nutrition. In order to observe the appropriateness of adding palm oil in this 'shell tart', we have produced an 'oil palm tart' with the addition of palm fibre in the product.</p>		

<b>MY-35</b>	<b>NAME(S)</b>	<b>NICOLE CHIA XIN DONG / SHARANESHRI SARAVANAN / JENNIFER JUIP KALIP (Teacher-in-Charge)</b>
	<b>ORGANIZATION</b>	LABUAN INTERNATIONAL SCHOOL
	<b>TITLE OF ENTRY</b>	<b>B-POTS: A SUSTAINABLE ALTERNATIVE TO PLASTIC POTS</b>
<p>Covid lockdowns turned home based growing plants into the next big pandemic trend for good reason. However, the excessive use of plastic pots has become a severe transboundary threat to natural ecosystems and human health. Although the use and consumption of plastics significantly improved our quality of life, it is crucial to shift towards sustainable alternatives, such as bio-based plastics. This is not just to reduce pollution but also stimulate both green and blue economies. In order to reduce the usage of plastic pots for gardening plants or flowers, we are inventing BPots as a sustainable alternative to the plastic pots that are in high demand due to the pandemic trend for gardening at home. B-pots are made by reusing organic food waste such as coffee waste, leftover rice, fruit peels (banana, orange and potato) and cooking oil. This project is not merely reducing the consumption of plastic pots, it also increases people's awareness for sustainable development and lifestyles in harmony with nature.</p>		

<b>MY-36</b>	<b>NAME(S)</b>	<b>ADI JOHAN ABDULLAH / LAURA ALYSSA DIONYSIUS / DERRICK TAN KENG HOW / SALLY NG SHUN YEE / JURY TISE (Teacher-in-charge)</b>
	<b>ORGANIZATION</b>	LABUAN INTERNATIONAL SCHOOL
	<b>TITLE OF ENTRY</b>	<b>CoPaCrete: Eco-friendly brick from agricultural waste</b>
<p>In Malaysia, the amount of waste generates from agricultural industry was increasing every year. Many innovative ideas for reusing organic waste fibres have been developed to reduce the amount of burned agricultural waste which pollutes the atmosphere. Apart from that, it is also to reduce the negative effects of waste accumulation on the environment in which it attracts insects and presents an unhealthy environment. Therefore, the use of agricultural waste in making the CoPaCrete is a sustainable way to reuse the waste. The techniques are simple and low-cost. By using dried corn husk and pandan leaf as one material to make the bio bricks, it is hoped to reduce the initial cost of making the bricks from other materials. Although the agricultural waste is often used as a fuel within the milling industry, CoPaCrete opens a new market opportunity for agricultural waste utilisation.</p>		

<b>MY-37</b>	<b>NAME(S)</b>	<b>Wan Yuan Yun / Agatha Ngee Hui Ci / Wong Zhi Jia / Wong Minh Chjiat Isabelle</b>
<b>ORGANIZATION</b>	SMK Dato' Jaafar	
<b>TITLE OF ENTRY</b>	<b>ACTRIC PAINT</b>	
<p>ACTRIC PAINT is a conductive paint that is made from activated carbon valorised from fruit peels, glue and water. It can conduct electricity from the electrical source to electrical appliances so that the electrical appliances can function. ACTRIC PAINT can conduct electricity once dry and replace conventional copper wiring in domestic households. ACTRIC PAINT can also be used on different media such as cloth, paper and cement. Since ACTRIC PAINT is made from fruit peels, it can reduce the amount of food waste sent into landfills as well as reduce copper consumption.</p>		

<b>MY-38</b>	<b>NAME(S)</b>	<b>MDM ASMA' BINTI AHMAD / MR MUHAMAD DOM B AHMAD / MDM ALBIAH BT AMUT / MISS WAN SITI NORIZA BINTI MUHAMMAD ZAIN / STAD PEERS STUDENT</b>
<b>ORGANIZATION</b>	TUNKU AMPUAN DURAH NATIONAL SECONDARY SCHOOL	
<b>TITLE OF ENTRY</b>	<b>ProSEIQ &amp; Your eGuide</b>	
<p>This Education Blog was created in line with the implementation of the counseling program at the study school. Wireless internet service or wireless internet has also been provided in this school. 1) Create an Anti -Drug and HIV/AIDS Prevention Education blog as a virtual educational medium. 2) Diversify the medium of information sources for Anti -Drug and HIV/AIDS Prevention Education. 3) Facilitate the delivery of Anti -Drug and HIV/AIDS Prevention Education at your fingertips only. Online learning is just at your fingertips. Students of Tunku Ampuan Durah School and internet browsers get useful information and video sharing to overcome stress and live a happy life especially during movement control order in Malaysia following Covid 19, all schools were closed.</p>		

<b>MY-39</b>	<b>NAME(S)</b>	<b>MOHAMMED KHAALLEFAH SALLEEM ALDOUFANI</b>
<b>ORGANIZATION</b>	University Science Malaysia	
<b>TITLE OF ENTRY</b>	<b>The smart gate monitoring system</b>	
<p>Smart Gate Monitoring System a system that uses surveillance camera, a pc, and a dashboard interface to monitor the vehicles entering and exiting the university gates. The system employs two one-stage detection models: one to identify the parking verified sticker from the live video feed, and another to identify the visitor's license cards from the mobile application scan feature. The system also uses cloud services to store and display the outsider's information and the guard's activity, as well as to send notifications to the mobile application in case of unauthorized vehicles. The system aims to enhance the security and efficiency of the university gate management.</p>		

<b>MY-40</b>	<b>NAME(S)</b>	<b>Mohd Remy Rozainy Mohd Arif Zainol / Ali Riahi / Mohd Fazly Yusof / Syafiq Shahrudin / Muhd Hazwan Hisyam / Muhammad Khairy Abdul Wahab</b>
<b>ORGANIZATION</b>	River Engineering & Urban Drainage Research Centre (REDAC)	
<b>TITLE OF ENTRY</b>	<b>Dew water harvesting (DWH) from Malaysia's tropical atmosphere using an aluminium heat sink integrated with a thermoelectric cooling (TEC) unit</b>	
<p>Dew drops are formed due to the condensation of vapour on the cold surfaces. Dew water harvesting (DWH) system using an aluminium heat sink integrated with a thermoelectric cooling (TEC) unit and a DC voltage controller was designed, fabricated, and tested under outdoor climate of Malaysia for several nights in this work. Maximum amount of 36.70 ml dew water was produced on a surface of heat sink with the area of 0.00592 m<sup>2</sup> by reducing the voltage of Peltier module up to 6.0 V and the tested dew water quality parameters were in compliance with WHO drinking water standards.</p>		

<b>MY-41</b>	<b>NAME(S)</b>	<b>Nor Azmira Salleh / Zulfirdaus Zakaria / Wan Mohd Yusof Rahiman Wan Abdul Aziz / Ahmad Azmin Mohamad</b>
<b>ORGANIZATION</b>	Universiti Sains Malaysia	
<b>TITLE OF ENTRY</b>	<b>Electrochemical Exfoliation of Spent Dry Cell Battery Electrode and Green Approach for Reduction of Graphene Oxide Using Palm Oil Leaves Extract</b>	
<p>Graphene is an exceptional and versatile new material which has a worldwide reputation due to its unique properties such as having extremely good electrical conductor, tunable energy band gap, and offered high mechanical strength. A cost-effective, simple, and non-hazardous route for synthesis of few-layered graphene from waste zinc carbon battery (ZCB) electrode via electrochemical expansion (ECE). The graphene oxide (GO) obtained from this method was subjected to reduction treatment by using palm oil leaf extracts as a reducing agent. The characterization was done, and the few layers graphene structure is supposed to be less defective in comparison to similar exfoliation techniques due to less oxygen-functional groups associated with the intermediate graphene oxide.</p>		

<b>MY-42</b>	<b>NAME(S)</b>	<b>WAN MOHD YUSOF RAHIMAN / AHMAD AZMIN MOHAMAD / MOHD REMY ROZAINY / MOHAMAD ANUAR KAMARUDDIN / MOHD SHARIZAL ABDUL AZIZ</b>
<b>ORGANIZATION</b>		Universiti Sains Malaysia
<b>TITLE OF ENTRY</b>		<b>Precise Indoor Localization Through Ultra-Wide Band With Multilateration Technique</b>
<p>Multilateration technique for indoor localization using Ultra-Wideband (UWB) consist of three main steps: collecting 2D coordinates from UWB Anchor using multilateration equation to estimate the distance between the Anchors and Tag, and filtering the noisy distance measurements using a Kalman filter to obtain a more accurate estimate of the tag's position. The technique evaluates in an indoor environment with multiple obstacles. Results showed that the approach achieved high accuracy and precision compared to trilateration technique. The approach is a promising solution for indoor localization, which can be applied in various applications such as asset tracking, indoor navigation, and location-based services.</p>		

<b>MY-43</b>	<b>NAME(S)</b>	<b>WAN ELYSA NABILA BINTI WAN ZAILANI / MOHAMAD ANUAR KAMARUDDIN / RASYIDAH ALROZI / NORAZIAN MOHAMED NOOR / MOHD REMY ROZAINY MOHD ARIF ZAINOL / MOHD SHARIZAL ABDUL AZIZ / WAN MOHD YUSOF RAHIMAN WAN ABDUL AZIZ / MUHAMAD FAIZAL PAKIR MOHAMED LATIFF</b>
<b>ORGANIZATION</b>		UNIVERSITI SAINS MALAYSIA / UNIVERSITI TEKNOLOGI MARA / UNIVERSITI MALAYSIA PERLIS
<b>TITLE OF ENTRY</b>		<b>ESCOS – ANDROID APPLICATION DEVELOPMENT USING VISUAL STUDIO CODE FOR EROSION AND SEDIMENT CONTROL COMPLIANCE</b>
<p>Up until now, there is no application or digitalized system has been provided or developed by authority especially the Department of Environment to assist Environment Officer for ensuring all the data keeping and monitoring are being carefully stored and retained. Data security is important because, all EIA projects are subject to the Environmental Quality Act 1974 and its associates regulations which implied that all the works, action or mitigation measures provided could be used as enforcement evident. Besides, more efforts are needed just to contain and retain all the evidence, proof, data, records, observations, and claims. Next, the usage of paper which considered as conventional method in record writing is unsustainable because the amount of the paper consumed is enormous. Apart from that, security for usage of conventional method is less secure because there will be data leakage since anyone can access. Therefore, it is required for user to protect any important information or object from being hijacked and negligence by careless individuals.</p>		

<b>MY-44</b>	<b>NAME(S)</b>	<b>MOHD ZHARIF BIN JAMEL / MOHAMAD ANUAR KAMARUDDIN / RASYIDAH ALROZI / NORAZIAN MOHAMED NOOR / MOHD REMY ROZAINY MOHD ARIF ZAINOL / MOHD SHARIZAL ABDUL AZIZ / WAN MOHD YUSOF RAHIMAN WAN ABDUL AZIZ / MUHAMAD FAIZAL PAKIR MOHAMED LATIFF</b>
<b>ORGANIZATION</b>		UNIVERSITI SAINS MALAYSIA / UNIVERSITI TEKNOLOGI MARA / UNIVERSITI MALAYSIA PERLIS
<b>TITLE OF ENTRY</b>		<b>ENAIR – A MOBILE APPLICATION DEVELOPMENT USING VISUAL STUDIO CODE FOR ENVIRONMENTAL AUDITING COMPLIANCE</b>
<p>Recently, there have been significant rise number of mobile application used for various type of work from navigation to data cloud. Such an advance technology used to improve our work and daily lifestyle. Although much progress has been made in terms of technological innovation, records keeping are still way back from the flow of technology in term of environment auditing in Malaysia. The purpose of this project is to design a functioning mobile application that can be used by environmental auditor for keeping record. This mobile application will act as document control for all the record between auditor and their client. Industrial Revolution 4.0 (IR 4.0). Which may influence on the effort to modernise the practise with technology which can interpret to be accepted by public and company.</p>		

<b>MY-45</b>	<b>NAME(S)</b>	<b>Ir. Ts. Ezliana Binti Ghazali / Professor Dr. Hj. Megat Azmi Bin Megat Johari / Ir. Ts. Mohd Azrizal Bin Fauzi / Assoc. Prof. Dr. Noorsuhada Binti Md. Nor / Ts. Dr. Muhamad Faizal Pakir Mohamed Latiff</b>
<b>ORGANIZATION</b>		School of Engineering, Universiti Sains Malaysia (USM) / Universiti Teknologi MARA (UiTM)
<b>TITLE OF ENTRY</b>		<b>EcoDurability: Enhancing Mortar's Performance with Environmentally Friendly Binders</b>
<p>The unsustainable use of traditional materials in construction, such as Portland cement, calls for innovative solutions. This project explores the potential of clinical waste incineration ash (CWIFA) and silica fume (SF) as supplementary binders in mortar. By incorporating CWIFA and SF, it aims to enhance mortar's mechanical properties while reducing its carbon footprint. It extensively tests mortar's durability and leaching behaviour when CWIFA, SF, and cement act as binders. Our findings demonstrate improved microstructure, enhanced strength, and durability with effective immobilisation of heavy metals. This breakthrough offers promising applications in construction and environmental remediation.</p>		

<b>MY-46</b>	<b>NAME(S)</b>	<b>MUHAMAD FAIZAL PAKIR MOHAMED LATIFF / MOHAMAD ANUAR KAMARUDDIN / MOHD REMY ROZAINY MOHD ARIF ZAINOL / MOHD SHARIZAL ABDUL AZIZ / WAN MOHD YUSOF RAHMAN WAN ABDUL AZIZ / IR. TS. MOHD AZRIZAL BIN FAUZI</b>
<b>ORGANIZATION</b>	<b>UNIVERSITI TEKNOLOGI MARA / UNIVERSITI SAINS MALAYSIA</b>	
<b>TITLE OF ENTRY</b>	<b>PUMPKIN SEED HULL BASED CARBON FOR WATER TREATMENT</b>	
<p>This invention assesses the performance of optimized Pumpkin Seed (<i>Cucurbita maxima</i>) Hull-based activated carbon (PSHAC) as an adsorbent for methylene blue (MB) dye removal in textile wastewater. Pumpkin seed is considered one of the finest candidates due to its high carbon content. PSHAC was prepared via a physical activation process that consists of nitrogen (<math>N_2</math>) gasification in a High-Temperature Tube Furnace (HTF) followed by carbon dioxide (<math>CO_2</math>) gasification under microwave heating. The optimum preparation conditions of radiation power (Watt), radiation time (min) and <math>CO_2</math> flow (<math>cm^3</math>) by using Central Composite Design (CCD) tool under Response Surface Methodology (RSM) design were determined to be 222 W, 1 min, and 498 <math>cm^3</math> respectively, which resulted in 68.017% of MB dye removal and 57.187% of PSHAC's carbon yield.</p>		

<b>MY-47</b>	<b>NAME(S)</b>	<b>Ir. Ts. Mohd Azrizal Bin Fauzi / Professor Ts. Dr. Hj. Mohd Fadzil Bin Arshad / Assoc. Prof. Dr. Noorsuhada Binti Md. Nor / Ir. Ts. Ezliana Binti Ghazali / Ts. Dr. Muhamad Faizal Pakir Mohamed Latiff</b>
<b>ORGANIZATION</b>	<b>Universiti Teknologi MARA</b>	
<b>TITLE OF ENTRY</b>	<b>SmartSCM: Advancing Ground Backfilling with Green and Intelligent CLSM Mixtures</b>	
<p>In the face of mounting pressure on the cement and concrete industries to adopt environmentally sustainable practices, projects are spearheading a groundbreaking solution. By harnessing the untapped potential of industrial by-product wastes as supplementary cementitious materials (SCM) in controlled low-strength materials (CLSM) for ground backfilling, this project charts a new course for eco-concrete. Fly ash (FA) and waste paper sludge ash (WPSA) take the spotlight as promising SCM options. The project optimises CLSMs using these industrial by-products and investigates their properties and environmental impact through statistical experimental design techniques. This study unlocks the door to high-performance, eco-friendly CLSMs, revolutionising the construction landscape.</p>		

<b>MY-48</b>	<b>NAME(S)</b>	<b>Muhamad Sharan Musa / Lee Eyann / Zulkifli Mohamad Ariff / Mohd Remy Rozainy Mohd Arif Zainol</b>
<b>ORGANIZATION</b>	<b>School of Materials &amp; Mineral Resources Engineering, Universiti Sains Malaysia</b>	
<b>TITLE OF ENTRY</b>	<b>Development of Waterborne Epoxy-Acrylate (WEA) Core-Shell Emulsion for Wood Coating</b>	
<p>Traditional solvent-based coatings, although effective, raise significant environmental and health concerns. In response to these concerns, the development of waterborne coatings has gained considerable attention as an eco-friendly alternative. We found that the WEA core-shell emulsion can be produced using multi-stage seeded emulsion polymerization. The emulsion particles feature a core-shell structure, with epoxy-acrylate as the core and acrylic as the shell. The particles have approximately 12 wt.% epoxy content, a particle size of approximately 130 nm, and a zeta potential of approximately -48 mV. Additionally, the emulsion exhibits a high glass transition temperature (<math>T_g</math>) of the shell phase (70°C) and a degradation temperature of 376°C. The emulsion's film, possessing a tensile stress of 5.61 MPa, high tensile modulus (490 MPa) and hardness of 80 A showcases remarkable attributes. We found that the outstanding performance is attributed to both interparticle and interfacial crosslinking between the particles. The combination of these structure features makes the WEA core-shell emulsion an excellent choice for eco-friendly coatings with high-performance characteristics.</p>		

<b>MY-49</b>	<b>NAME(S)</b>	<b>NOR MA BINTI SHAARI / NORFAZLIA SUFINAS BINTI SHUIB / MOHAMMAD FADZLI BIN MAT RASID / AUF AZFAR BIN MOHD ASHRAF / MUHAMMAD HAZIQ BIN MUHAMMAD HAZLI / IZZ ZAHRA IMANI BINTI MOHD SKANDAR</b>
<b>ORGANIZATION</b>	<b>SEKOLAH KEBANGSAAN SAUJANA INDAH</b>	
<b>TITLE OF ENTRY</b>	<b>SHOES DRY D.I.Y KIT</b>	
<p>Shoes Dry D.I.Y Kit" is an innovation aimed to solve the inefficient, laborious, and time-consuming conventional way of drying shoes – outdoor drying method. Incorporation of multiple drying methods has proven to increase effectiveness and efficiency of drying process and resulting a consistent drying result. The design utilizes heating elements, high temperature, hot air movement and circulation to effectively dries water molecules from shoes. Charcoal is used to help absorb humidity and unpleasant odor during the drying process. Arduino is used to enable continuous improvement on the hardware and control the system. It is safety, design, portability, and practicality. Its compact size is suitable for personal use. These added values to its chances of marketability and high commercial values.</p>		

<b>MY-50</b>	<b>NAME(S)</b>	<b>Nur Azwa Muhamad Bashar / Mohd Remy Rozainy Mohd Arif Zainol / Ahmad Zhafran Ahmad Mazlan / Mohd Sharizal Abdul Aziz / Khairy Abdul Wahab / Mohd Hafiz Zawawi</b>
<b>ORGANIZATION</b>	Universiti Sains Malaysia / Universiti Teknologi MARA / Universiti Tenaga Nasional	
<b>TITLE OF ENTRY</b>	<b>SaSDAM: Hybrid Model for Monitoring the Structural Integrity of Critical Infrastructures (Dam)</b>	
<p>Maintaining the continuous operation of critical infrastructure requires a delicate balance between sustainability and safety, particularly in times of global climate change. In this work, the SaSDAM model was developed as an early warning tool for monitoring the structural integrity of dams during maximum flow or certain flood events. The physical model was tested with experimental modal (EM) and operational deflection shapes (ODS) under multiple flow loads (50 l/s and 100 l/s). The fluid-structure interaction was investigated numerically by coupling Fluid Flow (Fluent) and Transition Structure. The SaSDAM model is suitable for disaster management at the technical decision-making level (e.g. for dam operators and engineers) and for reducing the worst impacts on society, the economy and the environment.</p>		

<b>MY-51</b>	<b>NAME(S)</b>	<b>MOHD HAFIZAL BIN MOHD ISA / ABDUL MUNIR BIN MOHAMAD LOKMAN</b>
<b>ORGANIZATION</b>	UNIVERSITI SAINS MALAYSIA	
<b>TITLE OF ENTRY</b>	<b>CHC Evaporative Cooling Membrane</b>	
<p>The integration of clay and water is a green approach to maintain thermal comfort. The clay will absorb the water which then evaporated into water vapour to reduce the temperature. A lab experiment is conducted by developing several clay membranes with different openings size to evaluate its performance on reducing indoor air temperature in a building space. The overall study signifies that using membrane with smallest opening will produce the highest difference between outdoor and indoor temperature and produces the lowest relative humidity inside the space.</p>		

<b>MY-52</b>	<b>NAME(S)</b>	<b>Norhayati Mat Ghani / Mohd Azmeer Abu Bakar</b>
<b>ORGANIZATION</b>	School of Education, Universiti Sains Malaysia	
<b>TITLE OF ENTRY</b>	<b>Framework Digital society and impact on cybercrime</b>	
<p>In terms of interpersonal interaction and communication, social media provide numerous benefits to society. However, some individuals and organisations have misused social media by using it as a platform for criminal activity, particularly against young women. Young women are most likely to engage in online activities such as photo uploading, online purchasing and making new friends. These actions bring them at risk for cybercrime, including sexual harassment, bullying, defamation, slander, threats, insults and harassment. This study will investigate the impact of the digital community's participation in social media on cybercrime.</p>		

<b>MY-53</b>	<b>NAME(S)</b>	<b>SITI SUHAILY SURIP / LAI YUAN RUN</b>
<b>ORGANIZATION</b>	PRODUCT DESIGN DEPARTMENT, SCHOOL OF THE ARTS, UNIVERSITI SAINS MALAYSIA	
<b>TITLE OF ENTRY</b>	<b>SLYSA: A Wearable Assistive Product for Tremor Patient</b>	
<p>SLYSA is a wearable assistive product specifically for essential tremor patient (facing difficulty to hold any objects) due to the involuntary hand movements. The objective of SLYSA design to minimize the rhythmic movement of hand muscles and overcome the discomfort of patient. The anti-tremor system is an electrical free vibration absorber and frequency of stiffness hand can be eliminated through an energy transferring process. The ergonomic study of hand posture are the main focuses in SLYSA design. SLYSA is the new solutions for tremor patient to have better life and to reduce involuntary hand movements in their daily activity.</p>		

<b>MY-54</b>	<b>NAME(S)</b>	<b>SYED MIKAIL JAMALULLAIL BIN SYED MAHATHIR / FAHIM AJMAL BIN MOHD TARMIZI / AIMY ZAKIRAH BINTI MOHD HILMAN ZAKI / PN. NURUL AYUNI BINTI AHMAD FUAD / PN. SITI NADIA BINTI MOHAMAD / PN. SHARMILA A/P BALAKRISHNAN / PN. NORAZEAN BINTI MOHD GHAZALI / PN. JAMALIAH BINTI MARIPAT</b>
<b>ORGANIZATION</b>	SEKOLAH KEBANGSAAN TAMAN UNIVERSITI	
<b>TITLE OF ENTRY</b>	<b>FIPS: FLOOD INTELLIGENT PROTECTION SYSTEM</b>	
<p>Flooding is one of the major disasters occurring in various parts of the world including Malaysia. On 16 December 2021, a tropical depression made landfall on the eastern coast of Peninsular Malaysia, bringing torrential downpours throughout the peninsular for three days. The resulting floods affected eight states across the peninsular. Declared by government officials as a "once in a century" disaster, it is the worst flood in the country. Therefore, early flood detection and monitoring systems are much needed to detect the flooding. Here, the FIPS: Flood Intelligent Protection System is proposed in helping to monitor the water level and reduce the after-effects from the flooding.</p>		

## MOLDOVA

<b>MD-01</b>	<b>NAME(S)</b>	<b>Rotari Doina / Darie Grigore / Chiselita Natalia / Chiselita Oleg / Efreмова Nadejda / Beşliu Alina</b>
<b>ORGANIZATION</b>	Institute of Microbiology and Biotechnology of Technical University of Moldova / Scientific and Practical Institute of Biotechnologies in Zootechnics and Veterinary Medicine of Moldova	
<b>TITLE OF ENTRY</b>	<b>Protective medium for ram semen preservation by refrigeration</b>	
<p>The invention relates to elaboration of the protective medium for diluting and preserving by refrigeration of the seminal material of reproductive rams of great zootechnical value, which through the increasing of the number of mobile spermatozoa, with rectilinear movement and decreasing of the microbiological indices allows longer preservation of the genetic material, protecting the spermatozoa against the low temperature stress and the negative influence of pathogenic microorganisms. The new medium is proposed with the following composition (% of the medium volume): sucrose - 6.4%, sodium citrate - 0.6%, egg yolk - 10%, mannoprotein preparation (500 mg/ml) - 0.6-0.8% and double-distilled water up to 100 ml. The research was carried out within the project 20.80009.5107.16 ", funded by NARD.</p>		

<b>MD-02</b>	<b>NAME(S)</b>	<b>Emilia Cojocar</b>
<b>ORGANIZATION</b>	Junior Achievement Moldova	
<b>TITLE OF ENTRY</b>	<b>Emlianishop</b>	
<p>Emlianishop a rain hat that aims to treat head problems, also the hat is water resistant. It is intended for all ages. The hat is intended for all people, but especially for those with headaches and rheumatic problems and heart problems. There are people who often go to the doctor to take prescriptions, being acute in the headache department. This hat really treat hat and its original and unique one</p>		

<b>MD-03</b>	<b>NAME(S)</b>	<b>Buca Felicia</b>
<b>ORGANIZATION</b>	Junior Achievement Moldova	
<b>TITLE OF ENTRY</b>	<b>Felis panda</b>	
<p>I work on a coat for a cat, dove, horse, rabbit, the project continues with magneto-therapy that will treat birds and animals for migraines, locomotor pain. Animals are saved and protected from the actions of nature. The universe acts on them and considerably affects their living environment. I love animals and birds very much, as we have a collection of pet breeds at home including domestic birds.</p>		

<b>MD-04</b>	<b>NAME(S)</b>	<b>Lungu Alexandra</b>
<b>ORGANIZATION</b>	Junior Achievement Moldova	
<b>TITLE OF ENTRY</b>	<b>BIFNY</b>	
<p>BIFNY-is a fridge bag that contains medical magnets in which you can keep products throughout the trip, or for going to the villa, camping or the beach. It is made of fluffy and ecological cloth. The purpose of the project is to heal the hands that hold weight and the back of the person who carries the heavy bag, including the food is always safe and fresh.</p>		

<b>MD-05</b>	<b>NAME(S)</b>	<b>Grizuc Renata</b>
<b>ORGANIZATION</b>	Junior Achievement Moldova	
<b>TITLE OF ENTRY</b>	<b>APuN</b>	
<p>The product is sleeping glasses and purse-case for sunglasses with medicinal magnets that treat and help to treat the human body, head. Also, I made the product water bottle cover that treats and keeps fresh water. They are made of ecological cloth intended for girls and boys with APUN character design. The product is original and accessible to everyone.</p>		

<b>MD-06</b>	<b>NAME(S)</b>	<b>Scortescu Marius-Silviu</b>
<b>ORGANIZATION</b>	Junior Achievement Moldova	
<b>TITLE OF ENTRY</b>	<b>Dudu-Duda</b>	
<p>A jacket-school bag with medical magnets, it is unisex for girls and boys, it has the role of treating the back and helps stable the nervous system, regulates the locomotor system.</p>		

## MOROCCO

<b>MA-01</b>	<b>NAME(S)</b>	<b>Brahim ELBHIRI / Safae MERZOUK / Yassine ABOUDRAR / Wafae EL KHOUMSI / Rqja BOURZIZA</b>
<b>ORGANIZATION</b>	EMSI Group	
<b>TITLE OF ENTRY</b>	<b>Green, Smart and Mobile station for water treatment (GSM-WT)</b>	
<p>Our project tries to manage the wastewater using an innovative solution based on a green, smart and mobile station for the water treatment. This station is a compact, robust, and easily transportable design with an adaptable treatment regarding the wastewater quality and type. Indeed, the treatment technique and procedure to be applied is based on the origins of the wastewater to be treated (industrial, domestic, hotel, etc.) where the energy used is completely green generated by PV system.</p>		

<b>MA-02</b>	<b>NAME(S)</b>	<b>Gadi Mohamed Amine / Safae MERZOUK / Yassine ABOUDRAR / Brahim ELBHIRI</b>
<b>ORGANIZATION</b>	EMSI Group	
<b>TITLE OF ENTRY</b>	<b>Mobile system for meat quality control</b>	
<p>In this vision, our proposed invention aims to provide an easier and quick solution for controlling the quality of any type of meat. The invented system with intelligent design consists of the implementation of a solution for the analysis and detection of the quality of the meat, through a certain module embedded into the system. The solution is a mobile box intended for any kind of targeted population, which validates the quality and the consumption decision of meat in real time. It is composed by three main blocks: reception block, analysis, detection block, and interpreted results display block.</p>		

## NETHERLANDS

<b>NL-01</b>	<b>NAME(S)</b>	<b>Morteza Salarzai / Fatemeh Parouei</b>
<b>ORGANIZATION</b>	Erasmus MC, Gynecologic Oncology Department, Rotterdam, South Holland	
<b>TITLE OF ENTRY</b>	<b>Emergency FrostWrap Wound Dressing</b>	
<p>This invention presents EmergiCool Hemostatic Gauze, an innovative wound dressing designed specifically for emergency scenarios where rapid, effective response is crucial. The gauze integrates key components to provide immediate hemostasis, localized cooling, and infection control. It incorporates chitosan, a potent hemostatic agent, encapsulated ammonium nitrate for its endothermic reaction, and an antimicrobial agent for preventing infection. Thermochromic and pH-sensitive indicators provide immediate feedback on the wound environment. Notably, the design ensures the cooling effect is initiated by pressure, ideal for emergency use where prompt treatment is critical. By uniting these elements, EmergiCool Hemostatic Gauze presents a novel approach to enhance immediate care, improve outcomes, and potentially save lives in emergency situations</p>		

## PERU

<b>PE-01</b>	<b>NAME(S)</b>	<b>Esgard Salcedo Huaman</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>CONCRETE MIXING PUMP WITH FOAM DOSER FOR CELLULAR CONCRETE</b>	
<p>A single machine performs mixing and pumping of cellular concrete (special concrete that is Light, Thermal and acoustic) used in cities with extreme hot and cold climates, the user can manufacture their own mixture of cellular concrete on site, having the use of the mixer of concrete mixture is combined with the foam dispenser, it is possible to obtain cellular concrete, being the mixture transportable through hoses using compressed air, as a driving force, with control valves for dosages and valves for flow control and speed of based</p>		

<b>PE-02</b>	<b>NAME(S)</b>	<b>Ysabel Koga / Arnaldo Alvarado / Robert Tinoco</b>
<b>ORGANIZATION</b>	Bioservice SRL	
<b>TITLE OF ENTRY</b>	<b>Disinfectant based on natural compounds and its elaboration process</b>	
<p>Biodegradable natural disinfectant resulted from the mixture of vegetable fractions (extracts of eucalyptus, grapefruit and acetic acid from grapes), organic acids (propionic acid and formic acid obtained by natural fermentation), surfactant (saponin extracted from Aloe vera), stabilizer and vehicle (union of vegetable glycerol and deionized water). The product has a microbicidal effect on human and animal pathogens (virus, bacteria and fungi). Moreover, it is used in the livestock, agricultural and industrial industries for disinfection of structures, materials, meats, vegetables, fruits and also the sanitization of water. Likewise, it is not corrosive and has a residual effect.</p>		

<b>PE-03</b>	<b>NAME(S)</b>	<b>Ysabel Koga / Arnaldo Alvarado / Robert Tinoco</b>
<b>ORGANIZATION</b>	Bioservice SRL	
<b>TITLE OF ENTRY</b>	<b>Biological insecticide used in the control of insects</b>	
<p>Natural biological insecticide resulted from a biotechnological process made from specific proteins, produced by 04 varieties of the Bacillus thuringiensis bacterium, which acts specifically against various types of insects in their larval and adult stages (beetles, fleas, lice, cockroaches, mites and flies) without causing adverse and/or harmful effects to animals, plants and people. In addition, it is biodegradable, does not pollute the environment, has a high insecticidal effectiveness and great residual power that allows reducing the frequency of fumigations and dissections.</p>		

<b>PE-04</b>	<b>NAME(S)</b>	<b>Guido Manuel Letona Ramos / Guido Dario Letona Gutierrez</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Washer Centrifuge Dryer with Automatic Load and Unload</b>	
<p>Washer-dryer centrifuge, washing machine with 2 drums that can develop different processes in each drum with shared mechanics through a single motor. Chemical supplies, centrifuging, drying, processes similar to artisanal ones, all individually per drum, with productive load capacities of double or triple that of traditional washers due to their particular design.</p>		

<b>PE-05</b>	<b>NAME(S)</b>	<b>Jorge Luis Benavides Ranilla</b>
<b>ORGANIZATION</b>	INDECOPI	
<b>TITLE OF ENTRY</b>	<b>METHOD FOR THE PRODUCTION, EXTRACTION, ISOLATION AND PURIFICATION OF ISOTHIOCYANATES FROM GLUCOSINOLATES</b>	
<p>The present invention relates to a method or process for the extraction and purification of natural isothiocyanates from glucosinolates, wherein the method comprises the steps of: 1) Aqueous extraction of glucosinolates from plant material that contains them; 2) Adsorption of Glucosinolates to the anion exchange phase of the mixed-mode resin; 3) Production of Isothiocyanates through the hydrolysis of Glucosinolates by myrosinase; 4) Simultaneous adsorption of isothiocyanates to the reversed phase of the mixed-mode resin, and 5) Elution of isothiocyanates from the mixed-mode resin.</p>		

<b>PE-06</b>	<b>NAME(S)</b>	<b>Esgard Salcedo Huaman</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>HYDRAULIC BRICK PRESS WITH CLEANING SYSTEM</b>	
<p>Our Super Economic machine makes ecological bricks using different types of materials such as: earth, sand, wood sawdust, mine tailings, plastic, construction debris, foundry sand waste, sugarcane bagasse, and others) has been modified and restructured with the incorporation of pressurized air for the manufacture of the 18-hole King Kon brick, thereby overcoming the problem of failure to break in the metal pieces of the fixed base of pins, generated by the clogging of scale from the dust of mix.</p>		

<b>PE-07</b>	<b>NAME(S)</b>	<b>MARCOS ANIBAL VERA BARRIOS</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Trigonometer</b>	
<p>The "Trigonometer" is a manual educational instrument that is based on the trigonometric circle, its main function is to identify the trigonometric functions by manipulating the rotary bar of sexagesimal angles and the measurement indication square.</p>		

<b>PE-08</b>	<b>NAME(S)</b>	<b>Weilhelmn Multhuapttf Salcedo / Chaska Oviedo Cáceres / Lida León Nuñez</b>
<b>ORGANIZATION</b>	University Andina of Cusco	
<b>TITLE OF ENTRY</b>	<b>A wireless device for biomechanical data acquisition and analysis during horizontal displacement exercises</b>	
<p>A portable, wireless electronic device has been developed to acquire and analyze biomechanical data during horizontal movement, such as sprints and sprinting. This innovative invention uses photocells to collect accurate information and evaluate physical performance in a variety of sports. The system overcomes wiring problems in outdoor environments, solves power supply difficulties, and allows the device to be reprogrammed for specific uses, such as assessing motor decision-making. In addition, the data collected can be easily exported for further analysis.</p>		

<b>PE-09</b>	<b>NAME(S)</b>	<b>Yadhira Samhira Valenzuela Lino / Jhon Rodrigo Ortiz Zacarias / Silver Ivan Del Carpio Ramirez / Carlos Alberto Coaquira Rojo</b>
<b>ORGANIZATION</b>	Universidad Continental	
<b>TITLE OF ENTRY</b>	<b>Automated computer vision-based Tahitian lemon sorting machine</b>	
<p>The following invention is developed in the technical field of automated sorting machines for Tahitian lemon based on computer vision which performs this action by means of grey scale image processing. The principles of Industry 4.0 were implemented for the development of this mechanism. The machine is composed of a hopper, which is assembled to a receiving lid that will be dedicated to divide and move the lemons to the five lanes; in addition, to select the lemons in their corresponding lane, two DoF arms are coupled.</p>		

<b>PE-10</b>	<b>NAME(S)</b>	<b>Yadhira Samhira Valenzuela Lino / Alan Saul Ojeda Poma</b>
<b>ORGANIZATION</b>	Universidad Continental	
<b>TITLE OF ENTRY</b>	<b>Variable control machine for texturing concrete surfaces</b>	
<p>The following invention is related to optimising the texturing of building walls in general, but particularly develops in the technical field of variable control machine for texturing concrete surfaces which performs this action by means of a silicone-based texturing mould so that various texturing patterns can be designed to suit the user's taste.</p>		

<b>PE-11</b>	<b>NAME(S)</b>	<b>Cuba Vargas Karen Esteincin / Contreras Cossio Jorge Luis / Martínez Martínez Sergio / Pucuhuayla Revatta Felix Rogelio</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Adapter for corrugated roofs to prevent dust and other unwanted elements</b>	
<p>An adapter for corrugated roofs obstructing dust and other unwanted elements which comprises a module of adaptation to the corrugated roofs and a module of adaptation to the main structure, which allow to have an airtight union between the corrugated roofs and the main structure of the house.</p>		



<b>PE-12</b>	<b>NAME(S)</b>	<b>Evelyn Ysolina Rondon Jara / Jorge Luis Contreras Cossio / Sergio Martínez Martínez / Karen Steincin Cuba Vargas</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Aerocamera for drug inhalation</b>	
<p>This invention is a device that allows the inhalation of medicines thanks to origami techniques has been designed in such a way that it folds and remains in 2D and when the user decides to use it, this aerocamera unfolds forming a 3D space. Being foldable, it reduces space. This invention is suitable for people with respiratory problems and also avoids the spread of viruses and bacteria by transporting the air chamber, since it is discarded at the end of its use.</p>		

<b>PE-13</b>	<b>NAME(S)</b>	<b>Contreras Cossio Jorge Luis</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Disinfection and recharging station for cellular phones, for hospital institutions and others</b>	
<p>This patent is a station that integrates a disinfection unit with a UV emission lamp and a conventional cell phone battery charger. It consists of a receptacle in which the cell phone is placed, an element to disinfect based on UV ultraviolet rays that can work with timer or permanently, a double USB connector or universal serial bus and an electronic control stage to program the operating time. The entire station can operate with a solar panel or with conventional electrical power.</p>		

<b>PE-14</b>	<b>NAME(S)</b>	<b>Ruth Aracelis Manzanares Grados / Claudia Beatriz Trujillo Ángeles / Luigi Valente Bustamante / Deivid Junior Yábar Gamarra</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Persia – An Electronic Assistant for the school integration of children with Asperger</b>	
<p>Education is a right that every human being must take advantage of; however, when there is a disability in students, it becomes difficult for teachers. The detection of Asperger syndrome occurs during the school stage, when repetitive behaviors are observed, lack of eye contact, and difficulties in social interaction at school so sometimes children suffer bullying and present problems in communication with the teacher. To reduce these problems, Persia has been invented that helps in the school integration of children with Asperger and functions as an assistant between the teacher and the child so that he can participate continuously in the classroom.</p>		

<b>PE-15</b>	<b>NAME(S)</b>	<b>Evelyn Ysolina Rondon Jara / Jorge Luis Contreras Cossio / Sergio Martínez Martínez / Karen Steincin Cuba Vargas</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Board game in the form of a ladder for teaching syllabication and accentuation rules in Spanish</b>	
<p>This device allows to learn in a playful way the techniques of syllabication and the rules of accentuation in Spanish from the correct position of the syllables. It solves the problem of understanding the rules of accentuation in Spanish, as well as the correct syllabication in this language. A gamified tool that is also useful for the teacher as material for the teaching-learning process.</p>		

<b>PE-16</b>	<b>NAME(S)</b>	<b>Evelyn Ysolina Rondon Jara / Jorge Luis Contreras Cossio / Sergio Martínez Martínez / Karen Steincin Cuba Vargas / Néstor Corpus Vergara</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Covid-19 Interactive Symptom Monitoring Kit</b>	
<p>This device is a weekly COVID symptom monitor that allows visual tracking of symptoms thanks to the already designed figures, and it also has a Braille system for visually impaired people. The technical problem that is solved is that people who use it, especially children, can identify their COVID symptoms in a creative and interactive way. This weekly newspaper reports the user's symptoms as he or she puts them together and identifies them with the established images.</p>		

<b>PE-17</b>	<b>NAME(S)</b>	<b>Cuba Vargas Karen Esteincin / Pucuhuayla Revatta Félix Rogelio / Contreras Cossio Jorge Luis</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Automatic corn sheller</b>	
<p>An automated corn shelling equipment, of the type comprising an infeed device; characterized in that the infeed device comprises a support comprising a plurality of removable profiles with a plurality of holes for product infeed, the equipment also comprises a cutting disc comprising a configuration of blades adapting to the surface of the product by means of springs, the equipment also comprises a weight control comprising mechanisms allowing the distribution of the cut elements, the equipment also comprises a packaging device comprising mechanisms allowing the cut element to be bagged and then sealed.</p>		

<b>PE-18</b>	<b>NAME(S)</b>	<b>Ruth Aracelis Manzanares Grados / Deivid Junior Yabar Gamarra / Diana Sofia Milagros Rosales Gurmendi / Jonathan Smith Bulnes Negreiros / Kelly Ivanna Curasi Anchayhua / Rubila Raquel Clemente Monago</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Agricultural soil analysis and monitoring device with systems for identifying obstacles, capturing plant images and for the use and collection of renewable energy</b>	
<p>In 2021, Europe consumed around 55% of the 483,000 tons of avocado production. Recently a batch of Peruvian avocados was withdrawn from the market by the health authorities of the Netherlands. In Peru has increased the production of avocados but, there are many losses for small farmers because they cannot measure the characteristics of farmland and avocados, which generates total loss, increased debt and poverty. For this reason, we created a robot to measure the macronutrients (Nitrogenous, Phosphorus and Potassium), humidity and Ph of plants by sensors using solar energy sent to the farmer's mobile the information quickly.</p>		

<b>PE-19</b>	<b>NAME(S)</b>	<b>Cuba Vargas Karen Esteincin / Contreras Cossio Jorge Luis / Martínez Martínez Sergio / Rondon Jara Evelyn Ysolina / Sánchez Márquez Carlos Augusto</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Lighting pole cleaning device</b>	
<p>A lighting pole cleaning device comprising rims for horizontal displacement, smooth and threaded shafts for vertical displacement of the cleaning module, brushing bristles with brush springs to adapt the brushes to the thickness of the pole.</p>		

<b>PE-20</b>	<b>NAME(S)</b>	<b>Cuba Vargas Karen Esteincin / Contreras Cossio Jorge Luis / Pucuhuayla Revatta Félix Rogelio / Martínez Martínez Sergio</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Hybrid mobile device for roadside fence conditioning</b>	
<p>A hybrid mobile device for the conditioning of street fences, which allows sanding and cleaning of street fences through a sanding and conditioning system using ecological energy, since it has a solar energy collection system.</p>		

<b>PE-21</b>	<b>NAME(S)</b>	<b>Evelyn Ysolina Rondon Jara / Jorge Luis Contreras Cossio / Sergio Martínez Martínez / Karen Steincin Cuba Vargas</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Gradual leg elevator for improved blood flow</b>	
<p>This device is ideal for improving blood circulation in the patient's lower limbs, since when he/she wants to sit down, he/she can, at the same time, elevate his/her legs. When stored, the device goes unnoticed, as it is discreet and takes the shape of a handbag. This invention solves the technical problem related to portability and gradualness, since there is a need for a portable tool to lift the legs wherever the user is, and that allows for height graduation.</p>		

<b>PE-22</b>	<b>NAME(S)</b>	<b>Evelyn Ysolina Rondon Jara / Jorge Luis Contreras Cossio / Sergio Martínez Martínez / Karen Steincin Cuba Vargas / Néstor Corpus Vergara</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Interactive electronic element for Covid-19 prevention and awareness-raising</b>	
<p>The invention is an electronic device inspired by a mystical tool used in the cultures of ancient Peru. In the dynamic part, the sound is activated by turning on the button (ON) located on the front of the TUMI, the voice will guide the user in the activities to be performed: Social distancing, use of mask, frequent hand washing and vaccination.</p>		

<b>PE-23</b>	<b>NAME(S)</b>	<b>Cuba Vargas Karen Esteincin / Pucuhuayla Revatta Félix Rogelio / Contreras Cossio Jorge Luis / Martínez Martínez Sergio / Sánchez Márquez Carlos Augusto</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Fruit washer with water use optimization system</b>	
<p>A fruit washer with a water use optimization system comprising a washing system, which allows to clean the fruit in an optimal way thanks to an ultrasonic device and allows to restrict the use of the device when it is in the process of washing through a signaling module.</p>		

<b>PE-24</b>	<b>NAME(S)</b>	<b>Ruth Aracelis Manzanares Grados / Kelly Ivanna Curasi Anchayhua / Rubila Raquel Clemente Monago / July Josefina Rodriguez Ubillus / Lucia Ximena Pejerrey Florian</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Procedure for the elaboration of a compostable organic material made from mealworm (<i>Tenebrio molitor</i>) and natural fiber made from Peruvian mountain pasture</b>	
<p>Material made from the residues found in the Peruvian highlands, which provide resistance to the material in addition to having <i>Tenebrio molitor</i> manure, which is considered a natural fertilizer due to the properties and nutrients it possesses: nitrogen, phosphorus, and potassium, in quantities that allow nourishing the crop during its development. These non-solp components allow to have a resistant and easy to adapt material in the manufacture of products; They also offer the possibility that the material be used, after its main use, as a natural fertilizer rich in nutrients, so it does not generate waste after its useful life.</p>		
<b>PE-25</b>	<b>NAME(S)</b>	<b>JORGE LUIS CONTRERAS COSSIO</b>
<b>ORGANIZATION</b>	UNIVERSIDAD PRIVADA DEL NORTE	
<b>TITLE OF ENTRY</b>	<b>SYSTEM FOR THE IDENTIFICATION OF SAFETY SIGNS FOR THE VISUALLY IMPAIRED</b>	
<p>The present invention describes an identification system of safety signs of buildings and commercial spaces (graphics), for visually impaired persons, which includes, among other elements, an infrared transmitter arranged in each signage with a different coding; and, an infrared receiver arranged in the cane of the blind person. The infrared transmitter comprises: a modulator, a microcontroller, a timer, an infrared transmitting diode; and, an oscillator; while the infrared receiver comprises: a speaker/buzzer, a microcontroller, a timer/demodulator, and an infrared receiver diode.</p>		
<b>PE-26</b>	<b>NAME(S)</b>	<b>Ruth Aracelis Manzanares Grados / Lucia Ximena Pejerrey Florian / Jessica Porras Real / Jose Anthoni Paredes Alarcón</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Procedure and Composition to obtain a fertilizer type cover for a utility pen from the shell of Inga feuilleei</b>	
<p>To reduce the consumption of plastic in pens, a material was invented from the shell of <i>Inga feuilleei</i>, which has no other use and grows throughout peruvian coast, combined with cornstarch providing a resistant material, fibrous and hard, which allows its function as the body of pen. After primary function of pen, it can be planted as it contains a seed on top that is encapsulated with fish gelatin leaves and when watered can grow a plant thanks to the fertilizer properties of the pen material.</p>		
<b>PE-27</b>	<b>NAME(S)</b>	<b>Ruth Aracelis Manzanares Grados / Claudia Beatriz Trujillo Ángeles / Luigi Valente Bustamante / Deivid Junior Yábar Gamarra</b>
<b>ORGANIZATION</b>	Universidad Privada del Norte	
<b>TITLE OF ENTRY</b>	<b>Coldty - A cold muscle drive therapy device for stroke patients</b>	
<p>Strokes occur when the blood supply to the brain is interrupted or reduced. Brain cells are damaged or die causing serious health problems and motor disabilities that affect the rest of the patient's life. In the recovery process, patients must perform physical therapies in specialized centers, frequently attending since it is a stage in which the brain must learn again to control the movements of the body. Coldty is an alternative to performing personalized therapy lowering costs and accelerating patient recovery and providing a safer and more comfortable environment for the patient when performing therapies from home.</p>		
<b>PE-28</b>	<b>NAME(S)</b>	<b>Cecilia Iris Alfaro Olivera / Carlos Alfredo Ugarte Palomino</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Attachment for making humitas in a food mill</b>	
<p>The invention is a device that attaches into a food mill to facilitate the preparation of "humitas", a Peruvian typical dish which requires especial techniques to prepare when doing it manually. Once installed, the humita's "dough" can pass through the mill up to the device which helps giving the traditional form of the dish and facilitates the filling process to finally be easily wrapped in corn husks. Automating the preparation of this traditional Peruvian dish.</p>		
<b>PE-29</b>	<b>NAME(S)</b>	<b>Luciana de la Fuente Carmelino / Ana María Muñoz Jáuregui / Juana Patricia Lozada Huancachoque</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Waterless face cream with moisturizing effect formulated with <i>Oenocarpus mapora</i> H. Karst (SINAMI) oil</b>	
<p>The invention is a waterless cosmetic face cream with moisturizing effect formulated with <i>Oenocarpus mapora</i> H. Karst (SINAMI) oil. This natural oil is the one that gives the formulation the moisturizing effect when applied to the skin of the face. Adding commercial value to the usage of this Amazonian fruit. The invention solves the problem of the excessive use of water in the industry and maintaining the key characteristics for creams of the same type.</p>		

<b>PE-30</b>	<b>NAME(S)</b>	<b>Luciana de la Fuente Carmelino / Ana María Muñoz Jáuregui / Juana Patricia Lozada Huancachoque</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Emulsion type cosmetic cream for face and body with moisturizing effect formulated with Oenocarpus mapora H. Karst (SINAMI) oil</b>	
<p>The present invention is characterized by being a formula containing within its composition an oil of Oenocarpus mapora H. Karst (SINAMI) exclusively, to which is attributed the moisturizing effect on the skin and by containing an oily phase and a fatty phase, which are stabilized by the action of an emulsifying agent. SINAMI is a slightly researched palm tree, which produces very nutritious small fruits, the oil extracted by the filter press method, allows obtaining a yellow oil with high density and oiliness. This oil gives softness and shine to the formulation.</p>		

<b>PE-31</b>	<b>NAME(S)</b>	<b>Luciana de la Fuente Carmelino / Ana María Muñoz Jáuregui / Juana Patricia Lozada Huancachoque</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Floor and small surface cleaner formula without water in its formulation presented in fast dissolving crystals with antibacterial effect</b>	
<p>The invention is a formula for cleaning floors and small surfaces presented in fast-dissolving crystals with an antibacterial effect that does not contain water in its composition. Contains powder detergents, antibacterial active ingredients, and dissolution facilitators. Used by dissolving in water until having a homogeneous mixture and then proceed to clean the surface. Helps the environmental by reducing water consumption and providing an easy to transport and store product (CO<sub>2</sub> reduction)</p>		

<b>PE-32</b>	<b>NAME(S)</b>	<b>Luciana de la Fuente Carmelino / Ana María Muñoz Jáuregui / Juana Patricia Lozada Huancachoque</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Fast-dissolving, compacted powder soap that dissolves quickly in the time required to ensure hand cleansing with moisturizing effect</b>	
<p>The invention consists of a single-dose soap in compacted powder that dissolves quickly in the time required to ensure hand cleaning with moisture effect. It is characterized for being a formula without water in its chemical composition capable of dissolving after 25 to 30 seconds upon contact with water when washing hands. The soap structure contains active ingredients and natural oils that provide hydration and emolliency to hands affected by continuous washing and by the presence of detergents and surfactants.</p>		

<b>PE-33</b>	<b>NAME(S)</b>	<b>Luis Alejandro Marzano Barreda / Luis Alberto Olivera Montenegro / Xiomara Mireya Gaspar Huanca / Ada Sophia Pacheco Gil</b>
<b>ORGANIZATION</b>	Universidad San Ignacio de Loyola	
<b>TITLE OF ENTRY</b>	<b>Method of production and formula for microbiological control and weight loss control for avocado (persea americana hass) using biopolymers and essential oil</b>	
<p>There are formulas for the microbiological control and weight loss control of food products such as Haas avocado, however, these formulas use components that are not suitable for human consumption or that modify the weight of the product. Therefore, the present invention allows the microbiological and weight loss control of avocados. Also, the method of obtaining it does not generate residues and allows an industrial scalability. The formula consists of two main solutions: an anionic solution and a cationic solution. These two solutions are mixed by agitation. The final result is applied to the avocados by spraying due to the low viscosity of the resulting formula.</p>		

<b>PE-34</b>	<b>NAME(S)</b>	<b>Carlos Alberto Farje Gallardo / Wilson Manuel Castro Silupu / Franz Tito Coronel Zubiato / Loyda Luz Guevara Castañeda</b>
<b>ORGANIZATION</b>	Universidad Nacional Toribio Rodríguez de Mendoza	
<b>TITLE OF ENTRY</b>	<b>TONGUE CLEANING DEVICE</b>	
<p>Device for cleaning the tongue, it is an instrument of the type that includes a head and a handle; characterized in that the head has two active areas; a first active area that contains two sections, one rough and the other chiselled; and a second active area that has bristles, which allow the most internal parts of the tongue to be sanitized by combining scraping and brushing; It also has a handle that fits with the curvature of the palm of the hand.</p>		

<b>PE-35</b>	<b>NAME(S)</b>	<b>Lawrence Enrique Quipuzco Ushñahua</b>
<b>ORGANIZATION</b>	La Molina National Agrarian University	
<b>TITLE OF ENTRY</b>	<b>ANAEROBIC DIGESTION SYSTEM FOR THE PRODUCTION OF BIOGAS RICH IN METHANE</b>	
<p>The invention refers to a system for the production of biogas rich in methane that comprises a bioreactor that produces lactate-forming bacteria, an acidogenic digester, a methanogenic digester, a fertilizer reservoir, a biogas reservoir, an electric generator, an electrolyser, an oxygen storage tank, a green hydrogen storage tank. The two-phases system produces a higher methane yield via the lactate route. The application of green hydrogen to the methanogenic digester increases the energy value of methane and reduces greenhouse gas emissions. Dosing small amounts of oxygen from renewable sources in the methanogenic digester reduces the presence of H<sub>2</sub>S in the biogas.</p>		

<b>PE-36</b>	<b>NAME(S)</b>	<b>Marilyn Amanda Quiroz Huachani / Ana María Cabezas Fernández</b>
<b>ORGANIZATION</b>	SER CALIDAD S.A.C	
<b>TITLE OF ENTRY</b>	<b>SOFTWARE FOR THE AUTOMATION OF THE IMPLEMENTATION OF MANAGEMENT SYSTEMS (QUALITY, SAFETY, ENVIRONMENTAL AND COVID MANAGEMENT)</b>	
<p>Digital tool designed for implementation and control of management systems based on the international standard ISO 9001:2015, through the integration of standard and tailored modules that generate an integration to meet the requirements of this standard. Our system has connection APIs to connect with other systems that the client has and ensure traceability in all its processes, reducing a 50% the time implementation and reducing 75% the costs of maintenance of quality system</p>		

## **PHILIPPINES**

<b>PH-01</b>	<b>NAME(S)</b>	<b>Cageo D. Berongoy / Ricardo S. Jardin</b>
<b>ORGANIZATION</b>	Rizal Inventors and Innovators Society Inc.	
<b>TITLE OF ENTRY</b>	<b>Pressure Release Reaction Pump</b>	
<p>The present invention generally relates to a pumping means, but more particularly to pressure release reaction pump, to operate with the use of free sources of energy, such as, solar thermal energy or energy from any combustible and discarded materials, pressure release reaction pump, a first water pump ever, a vacuum suctioned working principle, without friction, no engine, no electrical energy. After released the pressurized hot water, as predicted in third law of motion formulated by, Isaac Newton, that for every action there is an equal and opposite reaction, creating vacuum or suction effect the opposite reaction the released pressurized hot, lifting water from a lower elevated, uses such as, farm irrigation purposes or collecting tanks for other multitude of purposes, pressure release reaction pump, that needs minimal maintenance to thereby function under a minimal cost and constitute a negligible input in agricultural operations, and giving a broader natural services.</p>		

<b>PH-02</b>	<b>NAME(S)</b>	<b>Cageo D. Berongoy / Ricardo S. Jardin</b>
<b>ORGANIZATION</b>	Rizal Inventors and Innovators Society Inc.	
<b>TITLE OF ENTRY</b>	<b>Bark Scale Anti Cancerous Lesion</b>	
<p>The bark scale is a plant, it is the Dischidia Imbricata, in the Philippines given local name, it is called bark scale, living creeping and clinging on the bark tree like wood scale, that herb is a main ingredient this utility model, bark scale anti cancerous lesion. In various parts of the world many studies how wounds heal that does not heal any kind of anti biotic treatment, if patients the wound is diagnose a cancerous lesion, they risk not of break one part of their body, due to their disability also lost their career and self confidence, many patients who tries therapist treatment although costly and only a small percentage would heal them. This utility model Bark Scale Anti Cancerous Lesion is treatment to the cancerous lesion, it form to a ointment applied externally patching wiping to the cancerous lesion and also treatment of any wound and skin diseases. In various parts of the world more specialized doctors and scientists who study and researched but so far no effective medicine available to use treatment patching a hole or simply wiping to the cancerous lesion.</p>		

<b>PH-03</b>	<b>NAME(S)</b>	<b>Cageo D. Berongoy / Ricardo S. Jardin</b>
<b>ORGANIZATION</b>	CB Engineering Services Inc.	
<b>TITLE OF ENTRY</b>	<b>An Obtain Aratiles Fruit Juice</b>	
<p>The present invention discloses an aratiles (Muntingia calabura) fruit juice and the novel process of obtaining the same. In washing, crushing, squeezing, additional yeast, additives chemicals, and water, do not need to be done, because it highly antimicrobial properties, placing it directly to the fruit juice extractor container, which also fermenter container, obtained wondrous liquid. In 60 percent out of 80 percent moisture content of Muntingia alabura ripe fruit, is a natural extraction and 10 percent is physical, by squeezing the fruits pulp and then the 10 percent is still remain the fruits pulp, and the fermentation is, 100 hundred percent natural. A minimal processing cost constitute a negligible input in agribusiness operations. Accordingly, fruit juice extraction and fermentation have developed, including washing, crushing and squeezing, which requires mechanical and electrical energy. Consequently, it could be expensive to extract and ferment them because of the costly fuel needed to extract and ferment the aforesaid processing means.</p>		

<b>PH-04</b>	<b>NAME(S)</b>	<b>Cageo D. Berongoy / Ricardo S. Jardin</b>
<b>ORGANIZATION</b>	CB Engineering Services Inc.	
<b>TITLE OF ENTRY</b>	<b>Multi-Functional Circuit Breaker</b>	
<p>AC and DC circuit breaker, in general will switch OFF the connection, when have a short circuit and faults touching. Multi-functional circuit breaker it a new, can be AC or DC circuit breaker and variable voltage. Throughout the world no one has ever made a multi-functional circuit breaker, already on the market, meaning it has many functions, such as, switch it OFF if there is a short circuit. Switch it OFF when is an impact even without a short circuit, switch it OFF when brownout, protection on any gadgets and appliances damage in electricity power surge when electricity returns switch it ON delay automatically or manually, so gadget and appliance is protected from voltage surge. Switch it OFF when someone steals electricity, or anti electricity theft, detects it, though the changes electricity waves signal, switch it OFF when loose connection to avoid strips fire burning the properties. In renewable energy Dc circuit breaker is very important but until now not yet really develop, because the low voltage DC circuit breaker at present it has a fuse meaning it is not a perfect it can fail and the fuse its replacement to cut OFF or switch OFF the connection.</p>		

<b>PH-05</b>	<b>NAME(S)</b>	<b>Carl Joseph N. Avec / Jaeme A. Fernandez / Robinne Isabelle A. Sierra / Rico Antonio S. Mariano</b>
	<b>ORGANIZATION</b>	Manuel A. Roxas High School
	<b>TITLE OF ENTRY</b>	<b>Acetone and Cigarette Filters as an Alternative Paper Glue</b>
<p>A cigarette filter is a non-biodegradable waste that releases toxic chemicals like benzene, arsenic, hydrogen cyanide, pyridine, and Polycyclic Aromatic Hydrocarbons (PAHs) into the environment. It is combined with acetone to produce a paper glue. After subjecting the samples to the adhesive strength test, the results showed that the mean value of the sample is 44.4 N, while the mean value of commercially available glue is 5.92 N, which is 86.67% higher than the mean value of commercially available glue. This novel glue has a significant impact on the environment and the community and can provide a potential source of livelihood.</p>		

<b>PH-06</b>	<b>NAME(S)</b>	<b>ANTONIO GABRIEL A. GOCO</b>
	<b>ORGANIZATION</b>	HOLY INFANT ACADEMY OF CALAPAN
	<b>TITLE OF ENTRY</b>	<b>E-S.T.A.Y. at Home (Easily Sort Trash Automatically Yourself at Home)</b>
<p>This E-Stay at Home is a device that is inexpensive and easy to use at home that can sort out different types of household wastes. The system shall segregate the wastes and push them respectively in their designated individual trash bins – plastic, aluminum, metal, and paper. The device uses a small conveyor about 46 cm. long x 10.5 cm. wide x 11 cm. high. It will use inductive proximity sensor for detection of all kind of metals. It will also use magnetometer to further classify metals. All other waste will be classified by remaining sensors to effectively sort out different kinds of materials. Once the sensors detect specific waste, it will trigger the servo motor to wipe out the waste to its designated trash bin. The device uses electricity compatible with 220 volts but for more environmentally-friendly energy source, it can also be connected to a portable solar generator. This device aims to help reduce waste and save the Earth.</p>		

<b>PH-07</b>	<b>NAME(S)</b>	<b>MICHAEL C. BARBECHO / Romeo B. Morcilla / Neonita B. Palmaria</b>
	<b>ORGANIZATION</b>	PARTIDO STATE UNIVERSITY-Tinambac Campus
	<b>TITLE OF ENTRY</b>	<b>FRONT DRIVE POWER TRAIN AND SUSPENSION MECHANISM FOR THREE-WHEELED ELECTRIC VEHICLE</b>
<p>This invention is used to drive electric vehicle using the power of front wheel, eliminating the use of rear driven differential unit. A suspension mechanism is provided to lessen road shocks. It uses transmission to provide variable torque and speed adaptable to any road grades. The power is provided by a D.C. motor connected to the transmission using drive chain and sprockets. Gear selection is made using a gearshift lever and shift cable linked to the transmission. The power from the transmission is transmitted by a drive chain to the drive sprocket and a hub coupled to the front wheel.</p>		

<b>PH-08</b>	<b>NAME(S)</b>	<b>Prince Angelo C. Rivera</b>
	<b>ORGANIZATION</b>	Philippine Science High School - Cagayan Valley Campus
	<b>TITLE OF ENTRY</b>	<b>UVanalysis</b>
<p>Urinary tract infections (UTIs) are among the most common causes of infectious disease due to clinical neglect and mistreatment, which puts forward the need for immediate and effective detection procedures. However, current UTI identification models are hindered by an inability to integrate testing accuracy and commercial feasibility. Considering this inefficiency, a UTI detection device was designed with an Arduino-based ultraviolet-visible spectrophotometer for identifying nitrite and leukocyte content in urine samples. The spectrophotometric reaction utilizes potassium iodide and hydrochloric acid for nitrite detection. Triton X-100 and o-dianisidine will also be employed for leukocyte detection. Using the Arduino Integrated Development Environment (IDE) and OSD5.8-7Q Full Spectrum Si Photodiodes (Centronic), an improvised, cost-effective, and portable ultraviolet spectrophotometer was designed to handle a constant absorption UV wavelength of, 290 nm, in a short response time. The device seeks to expedite the process of diagnosis against one of the most common varieties of infection worldwide.</p>		

<b>PH-09</b>	<b>NAME(S)</b>	<b>JUSTIN KURT E. TIN</b>
	<b>ORGANIZATION</b>	MANILA SCIENCE HIGH SCHOOL
	<b>TITLE OF ENTRY</b>	<b>Trilby Operating System</b>
<p>This research focuses on the development of an enterprise-grade operating system designed to meet the needs of businesses heavily reliant on their servers and seeking maximum uptime. The primary objective is to create a stable, secure OS that can serve as a dependable solution for medium to large-sized businesses / websites. By addressing the challenges faced by organizations in maintaining server stability and security, this research aims to provide a reliable platform that businesses can use. The findings of this study contribute to the advancement of enterprise-grade OS; offer potential benefits to businesses seeking a robust and dependable server solution.</p>		

## POLAND

<b>PL-01</b>	<b>NAME(S)</b>	<b>Dr Eng Jerzy Jonkisz / Dr Eng Marcin Kana / Dr Eng Andrzej Pomorski</b>
<b>ORGANIZATION</b>	„POLTEGOR – INSTYTUT” INSTYTUT GÓRNICTWA ODKRYWKOWEGO (INSTITUTE OF OPENCAST MINING), POLAND	
<b>TITLE OF ENTRY</b>	<b>Method of producing feldspar-quartz meal from gneiss mining waste</b>	
<p>The subject of the invention is a method of producing feldspar raw material in the form of feldspar-quartz meal from gneiss mining waste, from which, after processing, it is possible to obtain construction aggregates (ballast, key aggregate and continuous grading mixtures) as well as decorative aggregates (stone bark, gabion stone, etc.). An important product of the technological process is also the extraction of rock gneiss as an ingredient for soil improver.</p>		

<b>PL-02</b>	<b>NAME(S)</b>	<b>Marcin Rzepka / Miłosz Kędzierski / Ewa Kaźna / Szczepan Filip</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>Composition of cement slurry for sealing casing pipes in underground hydrogen storage</b>	
<p>The object of the invention is a composition of cement slurry with the addition of nano-SiO<sub>2</sub> intended for sealing casing pipes in underground hydrogen storage facilities. Cement slurries based on silicon nanoparticles (nano-SiO<sub>2</sub>), tested by in Institute the last few years showed a high tightness of the cement matrix. Currently, in the era of energy transformation and introduction of so-called "green energy" principles, the necessity of producing and storing hydrogen in underground storage (e.g. in depleted hydrocarbon deposits) is increasingly emphasized. The tightness of the annulus between the borehole wall and casing pipes in such cases must be extremely high (so that hydrogen does not migrate to the surface of the ground or into other horizons in the borehole).</p>		

<b>PL-03</b>	<b>NAME(S)</b>	<b>Grażyna Żak / Michał Wojtasik / Jarosław Markowski / Robert Wojtowicz / Mateusz Rataj</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>Innovative composition of biomass fuels additives to reduce toxic exhaust components</b>	
<p>The emission of toxic exhaust components from the combustion of biomass fuels can be reduced by using substances added to the fuel in the production process. The subject of the present invention is a technology to produce an innovative composition of additives reducing emission to the atmosphere of toxic exhaust components emitted in the combustion process of sawdust from coniferous wood subjected to a granulation process. The innovative composition includes kaolin and iron oxide dosed in the optimal amount and proportions. The additives used in the innovative composition show synergy of action, reducing the emission of organic carbon compounds, CO and SO<sub>x</sub>, from several to even 95% more effectively than additives used separately. The invention is intended for use by individual consumers or heating plants.</p>		

<b>PL-04</b>	<b>NAME(S)</b>	<b>Artur Antosz / Stefan Ptak / Wojciech Wilk</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>The manufacturing method of TDAE aromatic plasticizer for rubber and gum manufacturing</b>	
<p>Currently, one of the most popular methods of producing TDAE plasticizer for rubber and gum, is a method based on the process of petroleum extracts refining with furfural. This process provides for lowering contents of carcinogenic polyaromatic hydrocarbons in the extracts to the required level. The technology of plasticizer production caused numerous problems in industrial conditions, related to the need of conducting the process at low temperatures, which causes difficulties in the process of mass exchange in the extraction column. The addition of co-solvent enables the process to be carried out at higher temperatures, close to the operating temperatures of the column, during extraction of classic vacuum fractions. The use of co-solvent in the process of refining high-aromatic petroleum raw materials has a positive effect on the process efficiency and improves selectivity of the extraction.</p>		

<b>PL-05</b>	<b>NAME(S)</b>	<b>Stefan Ptak / Wojciech Krasodomski / Artur Antosz / Zygmunt Burnus / Grażyna Żak</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>An innovative way of producing modified jojoba oil and hardened wax</b>	
<p>Pro-ecological trends in many countries around the world result in the introduction of environmentally friendly products. Vegetable and animal waxes are renewable and biodegradable products and can be used more widely, the use of the jojoba oil separation process with a mixture of MEK-MIBK solvents or MIBK alone, into a filtrate and residue for animal wax, allows to maintain process selectivity while obtaining short filtration times, which is desirable in industrial processes and allows to reduce temperatures of: turbidity, flow and solidification, which results in an improvement of the low-temperature properties of the obtained product (modified jojoba oil), including rheological properties at low temperatures, and obtaining a "hardened wax" featuring elevated temperatures of turbidity, flow and solidification.</p>		

<b>PL-06</b>	<b>NAME(S)</b>	<b>Sławomir Szufflita / Wojciech Krasodomski / Jerzy Kuśnierczyk / Mirosław Wojnicki / Marcin Warnecki</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>The method of assessing the stability of crude oils and their blends</b>	
<p>The patent addresses the critical assessment of crude oil stability and compatibility amidst disruptions in the global supply. Refineries face the need to diversify oil sources, but blending different oils often leads to excessive deposit formation. The developed method stands out by evaluating stability under specific pressure and temperature conditions. This unique approach enables the determination of safe proportions for oil blends, mitigating the risk of precipitation and deposit occurrence. This advancement offers valuable insights to refineries, optimizing their blending processes and ensuring efficient operations in the face of evolving crude oil supply challenges.</p>		

<b>PL-07</b>	<b>NAME(S)</b>	<b>Sławomir Falkowicz / Andrzej Urbaniec / Renata Cicha-Szot / Marcin Majkrzak / Łukasz Kłyż</b>
<b>ORGANIZATION</b>	Oil and Gas Institute – National Research Institute	
<b>TITLE OF ENTRY</b>	<b>Method of selecting the direction of operation of a borehole doublet in the exploitation of geothermal heat</b>	
<p>The object of the invention is a method for selecting the direction of operation of a doublet of boreholes in the exploitation of geothermal heat. As a result of appropriate selection of the injection well, the efficiency of the operation of the well doublet will be increased. The degree of rock homogeneity in the perforation zone was used as a criterion for the selection of the injection well (Fig.1). The assessment of homogeneity is based on the mechanism of water inflow into the well, which is obtained during the hydrocarbon production stage. Identification is made by analysing the shape of graphs of changes in the value of the water exponent and the rate of change in the value of the exponent, i.e. its derivative in time. The desired water inflow mechanism is the cone. If such inflows are identified in both wells, the one in which the value of the derivative of the water exponent reached a maximum in a shorter time is selected.</p>		

<b>PL-08</b>	<b>NAME(S)</b>	<b>Anna Kubczak / Oliwia Sowińska / Julia Dominiak / Laurent Babout / Agata Gajos / Natalia Walczak / Magda Wróbel-Lachowska / Andrzej Romanowski</b>
<b>ORGANIZATION</b>	Lodz University of Technology / Medical University of Lodz	
<b>TITLE OF ENTRY</b>	<b>Interactive controller mat system supporting the physical rehabilitation for Parkinson's disease</b>	
<p>Parkinson's disease symptoms, including burdensome fluctuations and dyskinesia, result in significant therapeutic problems. Patients describe, among others feeling their feet stuck to the ground, the so-called freezing of gait FoG. Not fully explained, this advanced symptom is a main threat of falling risk. For rehabilitation purposes, the interactive, foot keyboard-like controller was developed. The solution is dedicated to at-home home use for rehabilitation as a basic computer game controller. The proposed mat system is suited for the aim of application/game control feet input that supports both physical exercise and social entertainment, which is crucial from a mental point of view.</p>		

<b>PL-09</b>	<b>NAME(S)</b>	<b>Krzysztof Grudzień / Julia Dominiak / Ryszard Piasecki / Adam Ryłski / Tomasz Drewa / Adam Ostrowski / Filip Kowalski</b>
<b>ORGANIZATION</b>	Lodz University of Technology / Nicolaus Copernicus University in Torun	
<b>TITLE OF ENTRY</b>	<b>Innovative drains holder for patients after abdominal surgery</b>	
<p>The innovative drains holder is dedicated to patients after abdominal surgery and relates to a non-invasive clamp for securing drains, particularly drains emerging from the ureters or kidneys. The clamp is made of a flexible material and features a flat rectangular shape. It includes slits and corresponding pass-through holes on one side for inserting the drains. The clamp is further equipped with wing-like plates for attachment. This invention allows for the easy and secure fastening of drains, reducing the risk of movement and related complications while enabling convenient drain attachment without the need for medical personnel assistance.</p>		

<b>PL-10</b>	<b>NAME(S)</b>	<b>Konrad Dybowski / Łukasz Kaczmarek / Piotr Kula / Witold Szymański / Tomasz Wargę / Grzegorz Romaniak / Bartosz Bucholc / Magdalena Makowicz / Jan Siniarski / Tomasz Kaźmierczak</b>
<b>ORGANIZATION</b>	Lodz University of Technology, Institute of Materials Science and Engineering / AMII Sp z o.o. Lodz	
<b>TITLE OF ENTRY</b>	<b>Method of producing composite electrodes for electrodeionization of water based on cross-linked graphene oxide</b>	
<p>The subject of the invention is a graphene electrode intended for water deionization processes. It is an electrode made of a composite material produced of carbon fibers, covered with cross-linked, reduced graphene oxide. The electrodes are characterized by a relatively low specific resistance and high chemical and electrochemical stability in an aqueous environment with different pH. Long-term durability is achieved by the full reversibility of oxidation/reduction phenomena on the electrode surface.</p>		



<b>PL-11</b>	<b>NAME(S)</b>	<b>Zofia Kula / Leszek Klimek</b>
<b>ORGANIZATION</b>	Lodz University of Technology	
<b>TITLE OF ENTRY</b>	<b>Modified light-curing composite for dental fillings and its application</b>	
<p>The invention relates to new light-cured composites based on methacrylic resins and hydroxyapatite, calcium fluoride and nanosilver fillers. Hydroxyapatite (HAp) is an inorganic compound forming part of our teeth. It is characterized by high biocompatibility and bioactivity. Studies show that hydroxyapatite together with fluoride have the following properties: rebuilds the enamel by creating a new hydroxyapatite coating on the tooth surface, reduces tooth hypersensitivity and prevents caries. Considering the positive antibacterial effects of silver nanoparticles, using them is recommended in restorative dentistry.</p>		

<b>PL-12</b>	<b>NAME(S)</b>	<b>Wieslaw Krason / Piotr Kedzierski / Michal Stankiewicz / Grzegorz Slawinski / Jaroslaw Kiepura</b>
<b>ORGANIZATION</b>	Military University of Technology	
<b>TITLE OF ENTRY</b>	<b>A platform for rail-road transport, in particular wood and metal logs</b>	
<p>The object of research is a cheap, easy-to-build basic module and multi-platform sets, obtained by combining basic modules with dimensions corresponding to typical railway containers: 10' (with a length of up to 3m), 20' and 30' (length of up to 9m). Such structures can be used to support the intermodal rail-road transport of wooden and metal logs including pipes, products transported on pallets and loose materials. A single platform-container module supporting the transport of logs has the dimensions of a 10' (length of up to 3m) railway container. Such a platform has a modular structure. It can be assembled in various configurations depending on the intended use. The complete module – a single platform consists of a steel frame, a rotating end carriage placed vertically at one end of the frame or two end carriages at both ends and a set of removable stanchions with ties surrounding the load.</p>		

<b>PL-13</b>	<b>NAME(S)</b>	<b>Anna Rudawska / Izabela Miturska-Barańska</b>
<b>ORGANIZATION</b>	Lublin University of Technology	
<b>TITLE OF ENTRY</b>	<b>Holder for fixing a sample of butt adhesive joint</b>	
<p>The holder for fixing a butt adhesive joint of pipes allows for quick and accurate fixing of a sample of a sleeve adhesive joint and control of the execution of various assembly joints, including adhesive joints, e.g. in a leak-tightness test using an aqueous environment. It enables non-destructive test of assembly joints of cylindrical samples of various diameters, heights and wall thicknesses, as well as made of various types of materials, both polymers and metals. The leak-tightness test is non-destructive tests and allows to assess without the destruction the leak-tightness of such joints and also the correctness of their execution.</p>		

<b>PL-14</b>	<b>NAME(S)</b>	<b>Anna Rudawska / Izabela Miturska-Barańska / Elżbieta Doluk / Arkadiusz Gola</b>
<b>ORGANIZATION</b>	Lublin University of Technology	
<b>TITLE OF ENTRY</b>	<b>Retaining and fixing holder, especially overlap adhesive joint</b>	
<p>The construction of the holder enables the correct retaining and fixing of adhesive joints of flat sheets while making the adhesive joint, ensuring the shape and dimensional accuracy of the joint and the axiality of the adherends. The holder according to the invention ensures an invariable arrangement of the adherends in the curing process of the adhesive joint without the necessity for additional measurements and markings of the length of the overlap. Thanks to this, the process of producing overlap adhesive joints is significantly accelerated and is performed with greater accuracy and repeatability.</p>		

## **QATAR**

<b>QA-01</b>	<b>NAME(S)</b>	<b>Prof. Noora Al-Thani / Zubair Ahmed / Jolly Bhadra / Shahad Alkhair / Azza Saad</b>
<b>ORGANIZATION</b>	Qatar University	
<b>TITLE OF ENTRY</b>	<b>An ingenious approach for teachers' professional development based on innovative research-based practices towards promoting scientific research culture in education</b>	
<p>This project reports an ingenious approach for teacher's professional development program using innovative learning tools and resources to maximize research-based learning experience. Seventeen teachers from preparatory and secondary schools in Qatar participated in the program that consists of various workshops that introduces research methods and techniques including data collection, data analysis, poster making and presentation. This program promotes the effective implementation of research-based learning toward educational changes centered on students. This program allows educators the opportunity to collaborate as they explore new strategies, develop action plans, and learn about key pedagogical theories.</p>		

<b>QA-02</b>	<b>NAME(S)</b>	<b>Dr. Deepalekshmi Ponnamma / Swathi Gantha / Azza Abouhashem / Mohammed Al-Kuwari / Yousef Al-Enazi</b>
	<b>ORGANIZATION</b>	Qatar University Young Scientists Center, Qatar University
	<b>TITLE OF ENTRY</b>	<b>Green Energy Generation from Poly(lactic Acid) Fiber Nanocomposites</b>
<p>The increased need for sustainable energy sources has fueled research into developing unique ways to harness them. Recently, interest has risen in investigating alternative materials and nanocomposites for energy generation. This research uses nanocomposites comprised of polylactic acid (PLA) fiber as a sustainable energy source. PLA, a biodegradable and biocompatible polymer, has received a lot of interest due to its beneficial mechanical and thermal properties. In this research, zinc oxide (ZnO) nanoparticles are spin-coated onto PLA to increase their energy conversion ability. The research investigates the impact of ZnO concentration on the capacity of PLA thin film nanocomposites to generate energy via the triboelectric effect.</p>		

<b>QA-03</b>	<b>NAME(S)</b>	<b>Dr. Abdul Shakoor / Zawar Qureshi / Muntaha Elsadig / Azza Abouhashem / Nouf Alemadi / Naeema Alfakhroo</b>
	<b>ORGANIZATION</b>	Qatar University Young Scientists Center, Qatar University
	<b>TITLE OF ENTRY</b>	<b>INVESTIGATING THE PERFORMANCE OF NOVEL LiMn<sub>2</sub>O<sub>4</sub>-MXene (Ti<sub>3</sub>C<sub>2</sub>) NANOCOMPOSITE CATHODES FOR LITHIUM-ION BATTERIES</b>
<p>A variety of metal oxide nanoparticles have been used by researchers to coat MXenes layers in order to take advantage of the large surface area provided by the 2D layered structure. Nanoparticles of metal oxide were coated on the inner surface of the MXene layers, although this is tough and complex due to the narrow space between MXene layers. However, if the MXene layers are carefully exfoliated and delaminated, it may be conceivable to cover their inner surfaces with these nanoparticles. Hence, in this research, LiMn<sub>2</sub>O<sub>4</sub> nanoparticles were intercalated between the 2D MXene sheets and the physical and electrochemical properties of the novel composite cathode material was investigated.</p>		

<b>QA-04</b>	<b>NAME(S)</b>	<b>Rana Magdy / Khalid Fahad Al-Kubaisi / Khalid Homaid Al-Madfa / Saeed Ahmad Alkuwari / Mohammed Essa Al-Khulaifi</b>
	<b>ORGANIZATION</b>	Qatar University Young Scientists Center
	<b>TITLE OF ENTRY</b>	<b>Innovative Artificial intelligence automated football-training ball to analyze the physical performance metrics of the players</b>
<p>Technology had a profound effect on sports (Miah, 2017). Artificial intelligence researchers are in continuous development to create novel systems that help improve different sports in particular football, as it is one of the most popular sports in the world. This project tends to develop a smart football-training ball that can enhance the athletic performance and help the coaches to analyze, interpret and compare the activities and metrics of the players in a more convenient way. This work tends to replace all the electronic performance tracking wearable devices used meanwhile, and so it exhibits economic benefit to the football organizations.</p>		

<b>QA-05</b>	<b>NAME(S)</b>	<b>Dr. Rajender Boddula / Mrs. Ramyakrishna Pothu / Mr. Ahmed Bahgat Radwan / Dr. Noora H. S. Al-Qahtani</b>
	<b>ORGANIZATION</b>	Qatar University
	<b>TITLE OF ENTRY</b>	<b>Green-house gas-free hydrogen-enriched syngas and carbon nanotubes separate production via CO<sub>2</sub> reforming of methane by NiLa-alloy foams-based catalysts: Fill three needs with one deed</b>
<p>Unlike the current methane-reforming technologies, dry reforming of methane is favourable chemical reaction that can utilize the most abundant greenhouse gas (CO<sub>2</sub>) and natural gas (CH<sub>4</sub>) to produce syngas, which is an essential non-fossil-based value-added feedstock for clean liquid fuels and valuable chemicals. However, catalyst deactivation during DRM, often ascribed to coking (carbon deposition), has conventionally hampered its industrialization and commercialized implementation. In this project, we propose new-generation Laboratory-made catalysts, NiLa-alloy foams for dry reforming methane and CO<sub>2</sub> utilization into hydrogen-enriched syngas and carbon nanotubes production by separately two different reactors to combating global climate change and the development of sustainable energy sources. The overall goal of this project is to support the priority themes of the Sustainable Development Goals (SDG) - Sustainable Development of the United States (SDG 7 AFFORDABLE AND CLEAN ENERGY (sustainable fuels (syngas, olefins, and methanol) and carbon nanotubes production) and SDG 13: CLIMATE ACTION (Greenhouse gases mitigation)).</p>		

<b>QA-06</b>	<b>NAME(S)</b>	<b>Aisha Omar Al-Jaber / Al-Dana Faisal Al-Siddiqi / Muna Ibrahim / Dr. Sumalatha Bonthula / Dr. Rajender Boddula / Mr. Ahmed Bahgat Radwan / Dr. Noora H. S. Al-Qahtani</b>
	<b>ORGANIZATION</b>	Qatar University
	<b>TITLE OF ENTRY</b>	<b>Synergetic effect of Pd-based catalyst for degradation of cationic and neutral dye mixture</b>
<p>In addition to reducing the number of pollutants released into the environment, degradation helps to reduce costs associated with waste disposal and treatment. This study investigates the synergetic effect of palladium-based nanomaterials on the degradation of two dyes mixture. 6wt% Palladium doped CuO-ZnO bimetallic catalyst is synthesized to synergistically promote the degradation applications. The palladium-based nanomaterial is fabricated by hydrothermal synthesis and further the morphological studies were performed by SEM, FTIR, XRD and optical parameters.</p>		

<b>QA-07</b>	<b>NAME(S)</b>	<b>Alfajer M. Alrasheed / Fatima A. Alemadi / Ala Hussam Alardah / Dr. Sumalatha Bonthula / Dr. Enas Fares / Dr. Rajender Boddula / Mr. Ahmed Bahgat Radwan / Dr. Noora H. S. Al-Qahtani</b>
<b>ORGANIZATION</b>		Qatar University
<b>TITLE OF ENTRY</b>		<b>Evaluation of the Anti-Soiling Performance of Al<sub>2</sub>O<sub>3</sub> Nanomaterial Coating on Glass Substrates for photovoltaic cells</b>
<p>This study evaluates the effectiveness of an Al<sub>2</sub>O<sub>3</sub> nanomaterial-based anti-soiling coating for solar photovoltaic (PV) cells. The coating was applied to a normal glass substrate using spin coating technique. Performance tests were conducted on the coated glass substrates both indoors and outdoors over a period to evaluate the anti-soiling properties of the coating. Results showed that the coated sample had a significantly lower surface energy and a higher hydrophobicity compared to the uncoated sample. Additionally, when placed outdoors, results showed a substantial reduction in the amount of dust deposited on the coated sample versus the uncoated sample. The results of the gravimetric testing in different areas of Qatar showed that the coating had excellent anti-soiling properties.</p>		

<b>QA-08</b>	<b>NAME(S)</b>	<b>Ghala Nasser H A Alobaidly</b>
<b>ORGANIZATION</b>		Moza Primary School for Girls / Ministry of Education and Higher Education
<b>TITLE OF ENTRY</b>		<b>Simple, Yet Effective Way to Reduce Diseases Transmission</b>
<p>The aim of this invention is to design smart negative pressure helmet that mimics the helmet of astronauts. It works with negative pressure technique and is worn by a person when suffering from a respiratory disease to reduce respiratory diseases transmission, help patients with one of the respiratory diseases to practice their normal life freely, protect community members and medical staff while performing their work from infection, reduce the pressure on intensive care rooms in hospitals and reduce the material cost to the health sector.</p>		

<b>QA-09</b>	<b>NAME(S)</b>	<b>Yumn M Soufi</b>
<b>ORGANIZATION</b>		Moza Primary School for Girls / Ministry of Education and Higher Education
<b>TITLE OF ENTRY</b>		<b>The Effect of Extracting and Using Lipid Droplets of Date Pits as a Sequestration Factor of Water Dioxins (A Biomimetic Approach)</b>
<p>The aim of this invention is to provide an environmentally friendly and cost-effective alternative to other chemicals used for the removal of highly toxic hydrophobic pollutants, such as dioxins from water. Date pits are considered as waste product of the fruit in several countries and are most of the time burnt to get rid of. However, they are rich in oils that have an affinity for dioxins, a persistent pollutant caused by many things such as factories and can cause many problems related to health such as cancer and are highly present near coasts and in fish farms where they accumulate in the flesh of fish. they don't have the commercial value that other seeds have, such as sesame and olive seeds and they are abundant.</p>		

## ROMANIA

<b>RO-01</b>	<b>NAME(S)</b>	<b>Alina Vladescu (Dragomir) / Anca C. Parau / Catalin Vitelaru / Lidia R. Constantin / Iulian Pana / Mihaela Dinu</b>
<b>ORGANIZATION</b>		National Institute of Research and Development for Optoelectronics INOE 2000
<b>TITLE OF ENTRY</b>		<b>Biocompatible thin films based on thin metallic glasses used in orthopedy, A00544/07.09.2022</b>
<p>The invention relates to preparation of ternary biocompatible thin films metallic glasses based on ZrCu-X, where C can be one of the elements Ca, Mg, Mo, Si, Sr, by cathodic arc evaporation method used for coating of orthopaedic implants. Thin films are amorphous with 2 μm thickness, adherent to substrates and hard (10 -20GPa), with contact angle ranged from 115° to 134°. Thin films are resistant to corrosion in SBF at 37 °C, with a high protection efficiency (&gt;58%) and good biomineralization abilities in SBF and DMEM solutions, having the adsorption of bovine serum albumin (BSA) higher than the uncoated surfaces.</p>		

<b>RO-02</b>	<b>NAME(S)</b>	<b>Spiridon Dragomir / Anca C.Parau / Diana M.Vranceanu / Lidia R. Constantin / Claudia P.Dragomir / Alina Vladescu</b>
<b>ORGANIZATION</b>		National Institute of Research and Development for Optoelectronics INOE 2000
<b>TITLE OF ENTRY</b>		<b>Nanostructured thin films based on carbo-nitrides if transition metals with silicon additions resistant to wear, A00605/04.10.2022</b>
<p>The invention relates to preparation of nanostructured thin films based on carbo-nitrides consisted in one or more of transition metals with Si additions prepared by cathodic arc evaporation method used as protective films of cutting tools which ran under wear harsh regime by abrasion, erosion, and corrosion used in wood machining and cutting. Materials consist in complex carbo-nitrides based on Cr, Fe, Ti and W as base metal with elemental concentrations of min. 30 at.%, and max. of 30 at.% of C or N, and Si ranged from 2 to 12 at.%.</p>		

RO-03	NAME(S)	<b>Toma Fistos / Radu Claudiu Fierascu / Irina Fierascu / Alina Melinescu / Anton Ficai / Denisa Ficai / Lia Mara Ditu / Carmen Curutiu</b>
ORGANIZATION		National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
TITLE OF ENTRY		<b>Hydrophobic coating with self-cleaning and antimicrobial properties for artificial elements of vernacular constructions and method of obtaining it</b>
<p>The present invention relates to a nanocomposite coating material with self-cleaning, photodegradation and antimicrobial properties, which provides protection (strengthening) for artificial building elements in the composition of vernacular constructions (materials with high silica content), based on modified polymeric hydrophobic nanocomposites with amorphous silica (having a consolidating and self-cleaning role), a photocatalytic component (in order to reduce the accumulation of pollutants, biofilm and particles on these surfaces), to which is added a component with an antimicrobial effect, dispersed in an alcoholic solution.</p>		

RO-04	NAME(S)	<b>Irina Fierascu / Cristian Boscornea / Radu Claudiu Fierascu / Anda Maria Baroi</b>
ORGANIZATION		National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
TITLE OF ENTRY		<b>Formulations of protective cosmetic products obtained by applying integrated and sustainable bioeconomy approaches, PN-III-P2-2.1-PED-2021-0273</b>
<p>The project's goal is represented by the use of nanomaterials both as active ingredient and delivery system of bioactive compounds (mixtures of phenolic compounds-rutin and quercetin) recovered from grape industry by-products, for development of UV blocking cosmetic products.</p>		

RO-05	NAME(S)	<b>Radu Claudiu Fierascu / Ana Maria Gurban / Irina Fierascu / Teodor Sandu / Valentin Raditoiu / Cristina Enascuta / Irina Elena Chican / Mihaela Doni</b>
ORGANIZATION		National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
TITLE OF ENTRY		<b>Development of new materials for the integrated approach of water resources protection: from detection to depollution – AquaMat, PN 23.06.01.01</b>
<p>The aim of the project is to develop monitoring systems, innovative nanomaterials and depollution technologies, through multi- and trans-disciplinary research, at the border between chemistry and other fields, such as environmental protection, chemical engineering, materials science, etc., with applications in the integrated management of the environment and its monitoring, respecting the concept of eco-innovation.</p>		

RO-06	NAME(S)	<b>Radu Claudiu Fierascu / Roxana Ioana Matei (Brazdis) / Anda Maria Baroi / Toma Fistos / Irina Fierascu / Lia Mara Ditu</b>
ORGANIZATION		National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
TITLE OF ENTRY		<b>Composite material based on glass ionomer cement and phytosynthesized metallic nanoparticles with improved antimicrobial properties and procedure for obtaining</b>
<p>The present invention refers to a composite material with improved antimicrobial properties, without negatively affecting the physical and mechanical properties, intended for use in dental applications, consisting of aluminofluorosilicate glass with a particle size below 45 µm, the liquid component of the glass ionomer cement and a solution of phytosynthesized metallic nanoparticles in extracts of plants from the Lamiaceae family with crystallite size below 25 nm, the process of obtaining the composite material consisting of three stages, the phytosynthesis of metallic nanoparticles, followed by mixing with aluminofluorosilicate glass until complete homogenization, and in that of in the third stage, the liquid component of the glass ionomer cement is added. Acknowledgements.</p>		

RO-07	NAME(S)	<b>Ana-Maria Gurban / Lucian-Gabriel Zamfir / Mihaela Doni / Mihai Mitrea / Petru Epure / Maria Luiza Jecu / Maria Lorena Jinga / Mariana Constantin / Iuliana Raut</b>
ORGANIZATION		National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
TITLE OF ENTRY		<b>INNOVATIVE FULLERENOL - HYDROGELS BASED NANOMATERIALS FOR HEALTH DIAGNOSTIC AND CARE APPLICATIONS - FULSENS-GEL</b>
<p>The development of an innovative nanomaterial, based on the combination of the elastic, flexible and resistant hydrogels with functional nanomaterials based on fullerenols (FL), in order to obtain a new 3D conductive hydrogel with tunable network structures, active surface and improved electrochemical, mechanical and optical properties for sensing applications. By entrapment of biomolecules in such conductive hydrogels can be achieved unique features and diverse functionalities for various promising fields of applications: wearable, flexible and point-of-care sensors for clinical diagnostic, food quality control, environmental monitoring, flexible energy storage device, human-machine interfaces and intelligent sensors, based on self-healing and self-adhesive nanomaterial.</p>		

<b>RO-08</b>	<b>NAME(S)</b>	<b>Anita-Laura Chiriac / Tanta-Verona Iordache / Andrei Sarbu / Iulia Elena Neblea / Andreea Miron / Elena-Bianca Stoica / Ana-Mihaela Gavrilă / Anamaria Zaharia / Andreea Olaru / Dan Cosasu</b>
	<b>ORGANIZATION</b>	National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
	<b>TITLE OF ENTRY</b>	<b>BACTERICIDAL HYDROGELS WITH INTERPENETRATED NETWORK BASED ON CHITOSAN AND PROCESS FOR PREPARING THE SAME</b>
<p>The invention relates to a process for preparing bactericidal hydrogels with interpenetrating network to be used for removing certain types of bacteria from heavily contaminated wastewater. According to the invention, the process consists of radical polymerization of the monomer, vinyl benzene trimethyl ammonium chloride (VBAC) and of the cross-linking agent, N, N'-methylene bisacrylamide (MBA), initiated with 4,4'-azobis-4-cyanovaleric acid (ACVA), in the presence of chitosan, to result in xerogels which, when in contact with wastewater, reduce the concentration of coliform bacteria by 70...80% and the concentration of Clostridium perfringens bacteria by 60...70% and allow recovery of the claimed bactericidal hydrogels without finished product loss.</p>		

<b>RO-09</b>	<b>NAME(S)</b>	<b>Emil Stepan / Sanda Velea / Cristina Emanuela Enăscuță / Elena Radu / Carmen-Cornelia Gaidău / Mihaela-Doina Niculescu / Mihai Gădea / Doru-Gabriel Epure / Marius Becherițu</b>
	<b>ORGANIZATION</b>	National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
	<b>TITLE OF ENTRY</b>	<b>Composition for increasing the rapeseed production and procedure for obtaining it</b>
<p>The invention refers to a composition for increasing the production of rape seeds and to a process for obtaining it, the increase in production being achieved by covering the siliques with an elastic, adhesive and nutritious film, obtained from the respective composition, which prevents the loss of seeds through premature opening of the siliques and stimulates the ripening of the seeds. The composition consists of polycondensation products of hydrolyzed proteins with aldehydes, polycondensation products of hydrolyzed keratin with aldehydes, starch, plasticizers such as glycerin, polyethylene glycols or polypropylene glycol and hydrolyzed keratin.</p>		

<b>RO-10</b>	<b>NAME(S)</b>	<b>Florentina Monica Raduly / Valentin Raditoiu / Alina Raditoiu</b>
	<b>ORGANIZATION</b>	National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest
	<b>TITLE OF ENTRY</b>	<b>New biocompatible products shogaol and curcuminoid-like type used as adjuvants in cancer radiotherapy</b>
<p>The project refers to an interdisciplinary research field and aims to develop methods for synthesis and biological testing of new symmetrical <math>\beta</math>-diketone compounds and asymmetric mono or diketones. After morphostructural characterization, biocompatibility testing and structure-property relationship, biologically active products will be applied in the radiotherapy procedure to treat cancer. In this way, the new synthesized structures, analogues of shogaol and curcumin, have a higher antitumor activity than natural compounds and are used as adjuvants in cancer therapy.</p>		

<b>RO-11</b>	<b>NAME(S)</b>	<b>Ovidiu Nemeș / Simona Ioana Borlea (Mureșan) / Ancuța-Elena Tiuc / Gyorgy Deak</b>
	<b>ORGANIZATION</b>	Technical University of Cluj-Napoca
	<b>TITLE OF ENTRY</b>	<b>Innovative use of sheep wool and polyurethane foam for obtaining materials with sound-absorbing properties</b>
<p>The aim of this work was to obtain materials with sound-absorbing properties using sheep wool and rigid bi-component polyurethane foam. Were obtained four materials composed of three layers, a layer of sheep wool previously processed by hot pressing at 80°C and 5 MPa, with final thicknesses of 2, 4, 6 and 12 mm; a layer of rigid bi-component polyurethane foam, with a thickness of 8...37 mm and a transition layer, 1...20 mm thick, resulting from the migration of polyurethane foam during the multilayer panel manufacturing process into the wool layer and/or the migration of wool into the polyurethane foam layer. Wool and polyurethane foam are the combination of sound insulation and sound absorption - wool absorbs sound and reduces it, and due to the rigid structure of polyurethane foam (closed pore structure), it does not allow sound to travel further, resulting in sound insulation. The obtained materials have very good sound absorption properties with acoustic absorption coefficient values over 0.7 for the frequency range 800 ÷ 3150 Hz; the results prove that the sheep wool has a comparable sound absorption performance to that of mineral wool.</p>		

RO-12	NAME(S)	Gherman Bogdan / Pîslă Doina / Plitea Nicolae / Vaida Călin / Carbone Giuseppe / Pîslă Adrian / Banică Alexandru
ORGANIZATION		Technical University of Cluj-Napoca
TITLE OF ENTRY		<b>Parallel robotic system for the medical rehabilitation of the upper limb</b>
<p>The invention relates to a robotic system for the rehabilitation of the upper limb, in this case the recovery of the following movements: flexion of the forearm (elbow), pronation / supination, flexion / extension and abduction / adduction of the hand (palm). The system is implemented using a modular architecture with two parallel robotic modules, one for the forearm rehabilitation: elbow flexion and pronation/supination; the other for the rehabilitation of the wrist: flexion/extension and adduction/abduction. The advantage of this family of robots consists in a large range of motion, high stiffness and modularity. The system has been tested in hospital with patients for a period of 5 months and the results have positive and encouraging.</p>		

RO-13	NAME(S)	Horățiu Vermeșan / Mihail Chira
ORGANIZATION		Technical University of Cluj-Napoca
TITLE OF ENTRY		<b>Method of electrodeposition of zinc-nickel alloy on stainless steel substrate</b>
<p>The invention relates to a method of zinc-nickel alloy electrodeposition on the stainless steel parts through several stages. Electrodeposition of zinc-nickel alloy on stainless steel is important in applications where stainless steel is in contact with a less noble metal. Electrodeposition of zinc-nickel alloy on stainless steel is used especially in the automotive industry. The method of electrodeposition of the zinc-nickel alloy on a stainless-steel substrate according to the invention consists of: chemical degreasing (only if the parts are dirty, oily); washing in water; surface preparation in alkaline solution; washing in water and electrolytic zinc in alkaline Zn-Ni solution.</p>		

RO-14	NAME(S)	DINU-PÎRVU Cristina Elena / ANUȚA Valentina / VELESCU Bruno Ștefan / NIȚULESCU George Mihai / OLARU Octavian Tudorel / GHICA Mihaela Violeta / ORȚAN Alina / POPA Ovidiu / BĂBEANU Narcisca
ORGANIZATION		"Carol Davila" University of Medicine and Pharmacy Bucharest
TITLE OF ENTRY		<b>STANDARDIZED EXTRACTS OF ANTHRISCUS SYLVESTRIS - OBTAINING AND THERAPEUTIC USE</b>
<p>The invention refers to the obtaining method of a series of Anthriscus sylvestris dry extracts and their physical, chemical and biological characterization. By exploiting the spontaneous Anthriscus sylvestris, based on the pharmacological potential and reduced toxicity, we achieved an original approach to obtaining an anti-inflammatory resource. The obtaining methods used in the processes, according to the invention, lead to dried extracts of Anthriscus sylvestris, with a standardized total content of polyphenols (between 4.4 and 6.6 g% Gallic acid equivalents). The extracts were characterized qualitatively and quantitatively by chromatographic and spectrometric methods. Extracts of Anthriscus sylvestris showed statistically significant anti-inflammatory effect comparative to diclofenac in experimental models of acute and subacute inflammation. The extraction process was reproducible in term of total polyphenolic content. The main advantage of the invention is its capability to provide a pharmaceutical use of the spontaneous Anthriscus sylvestris and to capitalize the plant's high adaptability and ability to grow rapidly in almost any type of soil.</p>		

RO-15	NAME(S)	Rus Mircea-Iosif / Kamer Aivaz Ainur
ORGANIZATION		NIRD URBAN-INCERC Cluj-Napoca Branch
TITLE OF ENTRY		<b>Green Buildings: economic aspects and efficiency</b>
<p>A green building is a building that is built and used in such a way as to protect the environment throughout its life cycle, starting with design, construction, use, maintenance, renovation and demolition. The number of green buildings is increasing, especially as, at European level, it is desired that in the future each building should "consume" only the energy it "produces". The main indicators of the economic efficiency of a green building are the payback period of an additional investment and the cost per unit of energy saved (RON/kwh).</p>		

RO-16	NAME(S)	Laurențiu-Dan MILICI / Ciprian BEJENAR / Ilie NIȚAN / Mihai DIMIAN / Mahmoud ABU-BANDORA / Irina ALISAVETEI / Visarion-Cătălin IFRIM / Constantin UNGUREANU
ORGANIZATION		Ștefan cel Mare University of Suceava
TITLE OF ENTRY		<b>SOLAR HEATING SYSTEM TO MAINTAIN BATTERIES CHARGED</b>
<p>The invention relates to a solar heating system, integrable in the constructive structure of a vehicle, intended to maintain the temperature and/or charge level of the batteries. It disposes of, so that the phenomenon is controlled through the specific constructive form that facilitates the conversion of solar energy, both in thermal energy as well as in electrical energy and because the system involves thermomechanical actuators with autonomous operation, suitable in the automatic regulation of this process.</p>		

<b>RO-17</b>	<b>NAME(S)</b>	Laurențiu-Dan MILICI / Ciprian BEJENAR / Ilie NIȚAN / Oana-Vasilica GROSU / Dragoș-Ionuț VICOVEANU / Laura-Cătălina DOSPINESCU / Mariana-Rodica MILICI / Artiom MOLDOVAN
<b>ORGANIZATION</b>		Stefan cel Mare University of Suceava
<b>TITLE OF ENTRY</b>		<b>INTELLIGENT SYSTEM FOR GRIP ENHANCEMENT</b>
<p>The invention relates to an intelligent system for grip enhancement of the footwear sole, depending on the temperature of the movement surface and in relation to the environmental conditions, based on the temperature difference, in that it is equipped with a thermo-mechanical conversion mechanism with a specific constructive form.</p>		

<b>RO-18</b>	<b>NAME(S)</b>	SANDU I G / SANDU I / SANDU A / VASILACHE V / VIZUREANU P / EARAR K / STIRBU C M / CRISAN D R A / CHIRAZI M / STIRBU C / DROB A / BALAN G / HONCERIU C
<b>ORGANIZATION</b>		„Gheorghe Asachi” Technical University of Iasi
<b>TITLE OF ENTRY</b>		<b>Device for continuous generation of bioactive solions</b>
<p>The invention refers to a device for the continuous generation of saline nanoaerosols of the Aitken type, which is based on the principle of operation of the filter with a wide conveyor belt in a closed circuit, framing three sectors in the form of an equilateral triangle, with sequentially differentiated distribution on three processes distinct: impregnation by light sorption from the supersaturated solution of halo-salts, extraction by vacuuming, with suction of dry air from the halochamber, dispersion by purging with hot and humid air in the halochamber. This device allows the achievement of optimal levels of bioactive solions (hydrated saline aerosols) for halocameras with multiple uses, such as: eliminating or stopping the formation of biofilms through microbiological contamination (virotic, bacterial, fungal, etc.) of prostheses during the manufacturing period, storage and implantation of bones and teeth, prevention and treatment of cardio-respiratory, osteo-muscular and psycho-motor conditions, as well as for improving the physical performance of children, the elderly and people who work under conditions of high effort or performance athletes.</p>		

<b>RO-19</b>	<b>NAME(S)</b>	Kamel EARAR / Ion SANDU / Ecaterina ANDRONESCU / Aurel NECHITA / Silvia FOTEA / Irina Cristina PASVANTU / Ioan Gabriel SANDU / Diana Andreea CIORTEA / Andrei Victor SANDU / Oleg SOLOMON / Simona PÂRVU
<b>ORGANIZATION</b>		Dunarea de Jos University of Galati & Nicolae Testemițanu State University of Medicine and Pharmacy
<b>TITLE OF ENTRY</b>		<b>SYNERGIC ANTIDIABETIC COMPOSITION AND OPTIMUM PROCESSING PROCEDURE OF DRY MEDICINAL PLANTS</b>
<p>The invention refers to a synergistic antidiabetic composition and optimal process for processing dry medicinal plants in the form of fine powders, in order to obtain by homogenization, agglomeration and monolithization in the form of micro-encapsulated granules, pills or thin films used as a food supplement under antidiabetic tea form. Fine powder blend contains: 24% blueberry leaves, 24% dry white bean pod sheath, 24% dandelion flower, leaf and rhizome blend, 12% nettle leaf and stem, 12% 1/1 leaf blend and young white mulberry bark and 4% fine cinnamon powder. The powders were mixed with a viscous leachable liquid in a powder gravimetric ratio: leachable liquid dispersion = 4:1, using as dispersion medium a semi-viscous mixture consisting of 5% enzymatically hydrolyzed collagen, 30% bitter cucumber juice and 65% juice of lemon. The process can be used to obtain other medicinal teas, which depending on the purpose (comforting drinks, those with a preventive and/or therapeutic effect), the raw materials subjected to processing are dosed through an experimental protocol for formulating combination reports and establishment of processing conditions in three working phases.</p>		

<b>RO-20</b>	<b>NAME(S)</b>	Vasile RUSU / Oleg SOLOMON / Kamel EARAR / Ovidiu SCHIPOR / Madalina Nicoleta MATEI
<b>ORGANIZATION</b>		Nicolae Testemițanu State University of Medicine and Pharmacy & "Dunărea de Jos" University of Galati
<b>TITLE OF ENTRY</b>		<b>Silicone Key for Making the Individualized Healing Abutment</b>
<p>The present invention refers to an innovative silicone key used for the manufacture of individualized healing abutments in implant dentistry. This silicone key allows the precise reproduction of the emergence profile of existing natural teeth, thus ensuring an individualized approach in the treatment of prosthetic restorations on implants. The proposed silicone key involves the direct modeling of the emergence profile, considering the specific anatomy of the patient's teeth. By means of this technique, an exact replica of the shape and dimensions of natural teeth is obtained, thus allowing the creation of a personalized healing abutment. The device includes three different sizes of silicone keys, adapted according to the size of the remaining teeth. This variety of sizes ensures a precise fit in creating the emergence profile, minimizing peri-implant bone resorption and optimizing the healing process. By using the silicone key to create the individualized healing abutment, a prosthetic restoration is obtained with a profile that integrates perfectly with the natural teeth, offering an aesthetic and functional harmony in restoring the integrity of the dental arches.</p>		

<b>RO-21</b>	<b>NAME(S)</b>	<b>Puiu Lucian GEORGESCU / Daniela Laura BURUIANA / Gabriel Bogdan CARP / Viorica GHISMAN</b>
<b>ORGANIZATION</b>	"Dunărea de Jos" University of Galați	
<b>TITLE OF ENTRY</b>	<b>CO<sub>2</sub> SEQUESTRATION METHOD BY USING THE MIXTURE FORMED OF WHITE SLAG AND CALCIUM CARBIDE SLUDGE</b>	
<p>The invention relates to a mixture based on white slag resulting from the production of steel and calcium carbide sludge resulting from the process of acetylene preparation, the mixture being used to sequester carbon from flue gases, thus reducing the concentration of carbon dioxide CO<sub>2</sub> discharged into atmosphere. According to the invention, the mixture consists of the following components expressed as a percentage by weight: 50% white slag resulting as a by-product of the steelmaking process, with a grain size between 71 and 315 μm, having a pH = 12.1 and 50% calcium carbide sludge resulting from acetylene preparation, with a liquid/solid mass ratio = 1: 1 and pH = 12.2.</p>		

<b>RO-22</b>	<b>NAME(S)</b>	<b>Daniela Laura BURUIANĂ / Puiu Lucian GEORGESCU / Viorica GHISMAN / Nicoleta Lucica BOGATU / Georgiana GHISMAN / Elena Roxana AXENTE / Cătălin ARAMĂ</b>
<b>ORGANIZATION</b>	"Dunărea de Jos" University of Galați	
<b>TITLE OF ENTRY</b>	<b>INNOVATIVE MATERIALS FOR ABSORPTION OF PETROLEUM HYDROCARBONS</b>	
<p>The present invention relates to a mixture based on dolomite and steel mill slag for the absorption of petroleum hydrocarbons. The mixture is composed of CaMg(CO<sub>3</sub>)<sub>2</sub> dolomite with pH=9.62 with a grain size between 40-63 mm and steel mill slag with a pH=12.1 with a grain size between 71-315 μm. The method according to the invention consists in the fact that the mixture of component elements (dolomite and steel mill slag) is spread evenly on the soil impregnated with petroleum hydrocarbons and a significant amount of polycyclic aromatic hydrocarbons is absorbed with the aim of greening the contaminated soil.</p>		

<b>RO-23</b>	<b>NAME(S)</b>	<b>Mihaela PILA / Silviu STANCIU</b>
<b>ORGANIZATION</b>	"Dunărea de Jos" University of Galați	
<b>TITLE OF ENTRY</b>	<b>SELECTION PROCEDURE OF SPECIMENS WITH HIGH PRODUCTION YIELD, FROM THE MIRROR CARP (<i>CYPRINUS CARPIO SPECULARIS</i>) AND NAKED CARP (<i>CYPRINUS CARPIO NUDUS</i>) BREEDS, BY INDUCING WATER, THERMAL AND LACK OF OXYGEN STRESS FACTORS ON THE FINGERLINGS</b>	
<p>The invention applies to industrial fish farming, focusing on breeding <i>Cyprinidae</i> fish species. Its goal is to improve productivity, vitality, and resilience in the obtained specimens. The patented method involves inducing stress in breeding batches, allowing quicker selection of resilient individuals while eliminating weaker ones. Fingerlings undergo harsh conditions like low temperature, oxygen and water scarcity, and immobilization. Early selection ensures stable development and improved stress resistance. The approach is cost-effective and advantageous for cyprinid fish farmers, providing a simple yet efficient solution to enhance fish quality and survival in adverse conditions.</p>		

<b>RO-24</b>	<b>NAME(S)</b>	<b>Constantin OPREAN / Aurel-Mihail ȚÎȚU / Ion MĂRGINEAN / Alexandru-Marcel MOLDOVAN / Adrian BOGORIN-PREDESCU</b>
<b>ORGANIZATION</b>	"Lucian Blaga" University of Sibiu, Romania	
<b>TITLE OF ENTRY</b>	<b>Hydro-electrical turbine linear unfolded on the streams</b>	
<p>The invention refers to a hydro-generator structural and functional unfolded on linear dimensions, which converts the moving kinetic energy into electric energy specific to the streams on which it is set floating, anchored to the shores. The linear unfolding is done by adapting the constructive land chain track form to hydro-electrical chain track, the adaptation consisting in the constructive modification of some of the chain track's mail in becoming successive hydraulic paddles which, being drowned in the streams, are engaged in partial linear and partial circular movement specific to a chain track, resulting the rotation of the chain track's stellar wheels and their axes which engage an electric generator structural incorporated in the center of the chain track.</p>		

<b>RO-25</b>	<b>NAME(S)</b>	<b>Cristina Anca SECARĂ / Ionuț DUMITRACHE / Bogdan PĂTRINICHI / Adrian Claudiu POPA / Aurelian ZAPCIU / Cătălin Gheorghe AMZA / Diana Popescu / Augustin SEMENESCU</b>
<b>ORGANIZATION</b>	University POLITEHNICA Bucharest	
<b>TITLE OF ENTRY</b>	<b>SELF-INJECTION SYRINGE FOR THE ADMINISTRATION OF ANTIDOTES WITH AN INNOVATIVE ACTIVE SUBSTANCE RELEASE SYSTEM</b>	
<p>The main object of the present invention is to present an innovative solution for an intramuscular injection antidote delivery device which is compact, robust and versatile, and can be provided with various volumes of active substance for injection</p>		



<b>RO-26</b>	<b>NAME(S)</b>	<b>Catalin Gheorghe Amza / Dumitru-Titi Cicic / Diana Popescu / Gheorghe Amza / Augustin Semenescu</b>
<b>ORGANIZATION</b>	University POLITEHNICA Bucharest	
<b>TITLE OF ENTRY</b>	<b>INSTALLATION FOR EVALUATING QUALITY OF INDUSTRIAL PRODUCTS</b>	
This invention refers to an automated installation for evaluating the quality of industrial products, targeting non-destructive testing of industrial products integrated directly into the manufacturing line with various rejection degrees of abnormal products.		

<b>RO-27</b>	<b>NAME(S)</b>	<b>Diana Popescu / Catalin Gheorghe Amza / Dan Constantin Laptoiu / Gheorghe Amza / Augustin Semenescu / Vasile Iulian Antoniac / Dumitru-Titi Cicic</b>
<b>ORGANIZATION</b>	University POLITEHNICA Bucharest	
<b>TITLE OF ENTRY</b>	<b>ACETABULAR INTELLIGENT X-RAY METHOD AND SYSTEM FOR SURGICAL INSTRUMENTS FOR THE INSERTION OF THE PEDICLE SCREWS DEVICE</b>	
The invention relates to an intelligent method and system based on X-rays which can be used to train surgeons in the insertion of screws into the pedicles of human vertebrae, an operation necessary for the posterior stabilization of the spine.		

<b>RO-28</b>	<b>NAME(S)</b>	<b>Marius MOGA / Augustin SEMENESCU / Mihnea Cosmin COSTOIU / Ileana Mariana MATEȘ / Cezar - Ionuț CĂLIN / Cătălin Gheorghe AMZA</b>
<b>ORGANIZATION</b>	University POLITEHNICA Bucharest	
<b>TITLE OF ENTRY</b>	<b>SHORT FEMORAL STEM CERVICAL ENDOPROSTHESIS</b>	
The patent addresses a short femoral stem cervical endoprosthesis, that surgically replaces the damaged cartilage and bone in the hip joint. This implant is designed to restore function to a hip affected by arthritis.		

<b>RO-29</b>	<b>NAME(S)</b>	<b>Mircea MANOLESCU</b>
<b>ORGANIZATION</b>	A BETTER LIFE SOLUTIONS	
<b>TITLE OF ENTRY</b>	<b>iSentinel® BUSINESS: SEISMIC RESILIENCE &amp; CONTINUITY SOLUTIONS</b>	
iSentinel® BUSINESS is a holistic earthquake resilience solution that melds the QuakeGuard Proactive Earthquake Resilience System and iSentinel® IMMO, offering unparalleled protection for non-structural building components and assets. This system assures business continuity during earthquakes by minimizing damage and costs. It integrates early warning capabilities providing crucial preparation time, real-time structural health monitoring for informed decision-making, and proactive risk mitigation tools to identify potential vulnerabilities. Its scalability and customization make it a versatile choice across different industries and risk profiles. Essentially, iSentinel® BUSINESS merges advanced seismic protection technologies with intelligent decision-making for comprehensive earthquake resilience.		

## RUSSIA

<b>RU-01</b>	<b>NAME(S)</b>	<b>Viktor Bilak / PhD Anna Matiushkina</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Rotating Color Circles, Bi-Luck®</b>	
Rotating Color Circles is the system of educational and intellectual devices intended for students, professionals, and enthusiasts, who study color science and work with color. Main art concept of the devices is color circle of 12 palette cells, elements mechanically rotate by fingers. The purpose of the devices is to learn and understand the laws of color mixing; bases of color contrast and nuance; the harmonics of primary, secondary, and tertiary colors. Rotating Color Circles Device based on the innovative principle of displacing movable elements along a nonlinear path in geometrical plane in double-sides simultaneously (RF Patent No. 2175632).		

## SAUDI ARABIA

<b>SA-01</b>	<b>NAME(S)</b>	<b>Dr. Maha Ibrahim / Prof. Alaa Eldin M. Khedr / Dr. Ammar Bayoumi</b>
<b>ORGANIZATION</b>	Dept. of Pharmaceutical Chemistry, Faculty of Pharmacy, King Abdulaziz University / Dept. of Hematology, MSF for Medical Research and Development	
<b>TITLE OF ENTRY</b>	<b>COMPOSITIONS AND METHODS FOR TREATMENT OF ADDICTION WITHDRAWAL SYMPTOMS</b>	
Addiction of cocaine and similar leads to cellular disturbance of dopamine and serotonin re-uptake due to disturbance of lipid composition of the neuronal cell membrane. We showed procedure for preparation of formula containing fish roe (FR) extract and oily extract prepared from seeds of Nigella Sativa (NS). We were tested on groups of mice that had been previously rehabilitated for cocaine addiction. The effect of orally administered FR-NS formula showed complete recovery from the addiction symptoms. A formula administration for seven subsequent days was enough to alleviate addiction. treated groups retained normal levels of dopamine and serotonin in the brain.		

<b>SA-02</b>	<b>NAME(S)</b>	<b>Renad Al-Hussein</b>
<b>ORGANIZATION</b>	King Saud University	
<b>TITLE OF ENTRY</b>	<b>Sound Detector for Deaf People While Driving</b>	
<p>Around 466 million in the world are deaf, some countries prevent them from obtaining a driver's license because they can't hear important sounds while driving, such as police sirens, ambulances, car horns, etc. So, this device will solve this problem, it is composed of sound sensors which will detect the frequencies of important sounds and their intensity sending it to an innovative screen device or application which will display the following important information about the sound source: name, colors for each sound class, picture, direction, and a sound strength indicator (to know near or far). This will make deaf drivers able to drive in all countries as they can recognize the important sounds through the sense of sight.</p>		

## SINGAPORE

<b>SG-01</b>	<b>NAME(S)</b>	<b>JAGADESE J VITTAL</b>
<b>ORGANIZATION</b>	NATIONAL UNIVERSITY OF SINGAPORE	
<b>TITLE OF ENTRY</b>	<b>PHOTOREACTIVE CRYSTALS EXHIBITING [2+2] CYCLOADDITION REACTIONS AND DYNAMIC EFFECTS</b>	
<p>This work provides insights into how molecules 'communicate' with one another using supramolecular interactions in the solid state using [2+2] photocycloaddition reactions. The dynamic nature of the solids has been revealed from this work on the solid-state structural changes by photoreactions. JJ's work on solid state [2+2] photoreaction has been used as a model to bring reactive functional group closely in correct orientation, green chemical synthesis for new cyclobutene derivatives, to understand the molecular dynamics in solids, to make cyclobutene based organic polymers, photochemically reversible materials, on-off switches based on fluorescence, optical memory storage devices and reversible actuators.</p>		

## SPAIN

<b>ES-01</b>	<b>NAME(S)</b>	<b>Giorgi Mikiashvili</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>Innovative and multifunctional electric wheelchair</b>	
<p>The presented innovative chair is adapted for patients and disabled people, and it can be used to carry old people! This wheelchair can be used for five different purposes, such as: (1) Wheelchair, (2) Bed, (3) For a vertical position, (4) In the bathroom or for a shower, (5) It makes it easier to get in and out of bed from a sitting or standing position, so that none of the patient's muscles will be strained. The presented wheelchair works on an accumulator (or batteries) and is operated by remote control and a mobile application!</p>		

## SRI LANKA

<b>LK-01</b>	<b>NAME(S)</b>	<b>Wijayapala WELGAMA / K. Anton Chrishan Peiris</b>
<b>ORGANIZATION</b>	SRI LANAKA INVENTORS COMMISSION	
<b>TITLE OF ENTRY</b>	<b>S.O.S WRIST LIGHT (HUMAN SAFETY)</b>	
<p>THE INVENTION IS A HI POWER LIGHT TO BE WORN ON THE WRIST LEFT/RIGHT IN ORDER TO USE AT ANY EMERGENCY LIKE POWER CUT, MAP-READING, USE MOBILE PHONES OR COMPUTERS AND SEND SIGNALS ETC. LOOK LIKE A WATCH. BUT FIXED SOLAR RE CHARGEABLE (SOLAR PANEL FIXED) BATTERY FOR LONG LASTING. "NO FEAR IN THE DARKNESS"</p>		

<b>LK-02</b>	<b>NAME(S)</b>	<b>Harichandra Khalingarajah</b>
<b>ORGANIZATION</b>	The Open University of Jaffna	
<b>TITLE OF ENTRY</b>	<b>An automated faucet with an integral liquid washing dispenser for regulated handwashing</b>	
<p>After the COVID-19 pandemic, WHO emphasized proper handwashing techniques. Hand hygiene became a fundamental requirement of personal hygiene. This automated faucet dispenses water and liquid soap at regulated intervals for contamination-free handwashing. An automatic sensor-based faucet system uses a solenoid valve and pump motor to dispense water and soap. Duration can be programmed according to WHO guidelines. LEDs and buzzers engage users actively. This system targets public handwashing stations in schools, hospitals, and institutions. It reduces water and soap wastage while ensuring proper handwashing with minimal contamination.</p>		

<b>LK-03</b>	<b>NAME(S)</b>	<b>Anjana Abhishek Jayawardhana</b>
<b>ORGANIZATION</b>	Sri Lanka Inventors Commission	
<b>TITLE OF ENTRY</b>	<b>User-Friendly Iron Protection (UFIP) System</b>	
<p>One of the things that busy people in today's society miss almost every day is forgetting to turn off the electric iron after ironing their clothes. Because of this forgetfulness; Forgetting the turned off the electric iron or not while leaving the house in a hurry leads to many unpleasant problems. To avoid these problems, we can introduce an additional protection system. that is UFIP System. This device is designed to be attached to any type of electrical grid and it can be easily attached to your electrical grid.</p>		

<b>LK-04</b>	<b>NAME(S)</b>	<b>Dr. (Mrs.) Subasinghe Nissanke Chamila Madurangani Dias / Ms. M L Pawarna Thathsarani</b>
<b>ORGANIZATION</b>	Sri Lanka Inventors Commission	
<b>TITLE OF ENTRY</b>	<b>Development of Green Pepper-Garlic Based Sauce with No preservatives and colour additives</b>	
<p>The intention to produce this sauce is to be used as a healthy sauce in reducing noncontagious diseases. This product is made from pure and fresh Sri Lankan green pepper and garlic. Sri Lankan pepper has a higher piperine content, which gives it a superior quality and pungency. Green pepper decreases abdominal pain, diarrhea and has anti-aging properties. Garlic provides pungent flavour, contains therapeutic properties, and offers an immune system boost, reduce cholesterol level and the cancer risk. This product is made from organic green pepper and no food preservatives or colour additives added to enhance the product quality.</p>		

<b>LK-05</b>	<b>NAME(S)</b>	<b>Mapalagama Manage Saluka Udbhasa</b>
<b>ORGANIZATION</b>	Sri Lanka Inventors Commission	
<b>TITLE OF ENTRY</b>	<b>GridSafe-Smart power protector for home &amp; business</b>	
<p>GridSafe is a small, portable device designed to protect electronics from power impurities/fluctuations. This intelligent unit plugs into any household outlet and, uses real-time on-device machine learning to identify harmful impurities within 20 milliseconds, a task impossible for standard surge protectors. With the ability to trigger the Residual Current Device, GridSafe actively protects household appliances from potential damage. This user-friendly, affordable, and energy-efficient solution employs an innovative approach to offer unparalleled protection to electronics in homes, offices, and commercial establishments. Future iterations aim to include IoT capabilities for remote monitoring and customization options for small to medium-sized enterprises.</p>		

<b>LK-06</b>	<b>NAME(S)</b>	<b>Thambawita Maddumage Senila Mewanjith Thambawita</b>
<b>ORGANIZATION</b>	Vishvoda College, Kurunegala, Sri Lanka	
<b>TITLE OF ENTRY</b>	<b>A machine with a natural healthy liquid that purifies air with mosquito repellent qualities and multiple benefits to human beings</b>	
<p>A mist-making machine with a container comprising a liquid made of Ceylon Cinnamon &amp; alcohol, purifying air, repelling mosquitos &amp; such insects, eliminating diseases spreading virus &amp; such microbial organisms, spreading healthy &amp; pleasant natural aroma. The machine enhances the spreading of the said healthy &amp; pleasant air throughout an area of a common room, protecting the dwellers from mosquitos, virus, or other air-borne diseases in a pleasant manner. Liquid is made by mixing cinnamon oil with alcohol first &amp; then with water since oil is not directly mixed with water. It eases the capacity of vaporizing in a slower process.</p>		

<b>LK-07</b>	<b>NAME(S)</b>	<b>D. Methlini Minaya Dassanayaka</b>
<b>ORGANIZATION</b>	Devi Balika Vidyalaya	
<b>TITLE OF ENTRY</b>	<b>Natural Dye For Batik</b>	
<p>I made the natural Dye for batik (but can be also used to normal clothes dyeing) by onion skin, mangosteen shell, coconut husk, mahogany wood dusk powder, Jack wood dusk powder, turmeric, teas dusk. Using natural Dye is 100% eco-friendly. There is no need a lot of components to make the Dye Less cost since the Dye can be made with natural things. So, when the cost of Dye goes low cost of clothes also will get lower.</p>		

## SUDAN

<b>SD-01</b>	<b>NAME(S)</b>	<b>Mr Salah Eldin Mustafa Ali Hussein / Mr Kheiry Kheiry Ahmed Eltahier</b>
<b>ORGANIZATION</b>	HIOT UK	
<b>TITLE OF ENTRY</b>	<b>Fault Smart Reporting System - Magic Drainer (MD)</b>	
<p>The Fault Smart Reporting System, or Magic Drainer (MD), is an innovative electronic device designed to detect and clear blockages in air conditioning systems. With its vibration motor technology, IoT integration, and remote-control capabilities, the MD prevents water damage, reduces maintenance costs, and improves energy efficiency. Its market potential lies in addressing a common problem, establishing industry partnerships, expanding into smart homes/buildings, and penetrating international markets. The MD represents a significant advancement in HVAC solutions, offering convenience, sustainability, and long-term benefits for users.</p>		

<b>SD-02</b>	<b>NAME(S)</b>	<b>KHAWLA OSMAN BASHIR MOHAMED</b>
<b>ORGANIZATION</b>	N/A	
<b>TITLE OF ENTRY</b>	<b>The Smart Washing Machine</b>	
<p>The Smart washing machine combines three operations in one (washing, ironing, and folding). The new rapid technological advances are taking part everywhere. This washing machine is highly advanced idea to make use of the conventional machine and advanced furthermore with three distinct functions, it could lined as washing, ironing and folding.</p>		

## SWEDEN

SE-01	NAME(S)	Dr. Adrian Jose Cabezas Morales
ORGANIZATION	Nano Control AB	
TITLE OF ENTRY	<b>New technology to remove micro and nanoparticles from exhaust emissions</b>	
After several successful projects in various industries, we have now developed a new technology that can be used for:1. Cleaning crankcase gases and 2. Reducing particulate matter from exhaust gases. In 2022, we completed the development of a new technology that will be used for removing PM from exhaust emissions. The technology can be described as a modular separator that separates solid particles in several stages. Firstly, it separates the large particles, then the smaller ones, and so on. If purification requirements are high, an additional module can be added, until the desired air purification is achieved.		

## SYRIA

SY-01	NAME(S)	Malek Al Soud
ORGANIZATION	Ghazalee	
TITLE OF ENTRY	<b>A natural product to combat viral diseases and cancer</b>	
Bacteria Acetobacter pasteurianus extracts when grown on fresh figs (fresh figs are favorite food for these bacteria). These bacteria produce enzymes and effective substances against cancer and viruses. These extracts are very safe they do not harm healthy cells, but they kill cancer cells and viruses by 90% to 100%.		

## TAIWAN

TW-01	NAME(S)	LIN, YU-CHEN / LIN, HSUAN-YI / LIN, YU-JOU / WU, YING-HAN / HSIAO, WEI-WEN
ORGANIZATION	National Taiwan University / National Tsing Hua University / National Taiwan University of Science and Technology	
TITLE OF ENTRY	<b>Application of new convolutional neural network with AI in counting system</b>	
We develop a new generation of artificial intelligence bacteria and cell technology platform and use convolutional neural network to identify bacteria and cells and combine big data with deep learning to improve the accuracy of identification. This convolutional neural network can effectively achieve low-error and real-time colony calculation, and it can be used with the USB camera module (IPEVO DO-CAM) to take pictures and measure at any time. By analyzing the image and adding the database, the system can judge the number of a picture of thousands of colonies within one second, and the error is within 10. For the repeatability and accuracy of the experiment, our high-accuracy and low-cost artificial intelligence cell counting system, taking Escherichia coli as an example, residual learning combined with the overall error value of the convolutional neural network of the global pooling layer Within $\pm 2$ bacteria.		

TW-02	NAME(S)	Sun Yan-Jun
ORGANIZATION	Shanxi Agricultural Valley BaoRenTang Food Co., Ltd.	
TITLE OF ENTRY	<b>BaoRenTang Raisin Tree Hydrosol</b>	
BaoRenTang's Raisin Tree Hydrosol uses family-research Chinese medicine passed down for 14 generations, a complex formula of ingredients derived from the homology of food and medicine. This product is for liver protection, to provide consumers under unbalanced diets, high stress, the ability to maintain a healthy life through dietary supplements. This product includes TCI's IBD Citrus Fruit Extract (CitrSlim®), which contains high amounts of antioxidants, flavonoid compounds, and ingredients like Synephrine, promoting glycogen breakdown to increase the body's metabolic efficiency. The formula also contains a complex mixture of raisin tree, lalang grass, Siberia landpick, kudzu root, and nutmeg. This can reduce the accumulation of harmful toxins in the liver, further aiding in the repair and regeneration of liver cells, and enhancing the regeneration function of liver cells. Moreover, through the repair of liver cells, it can further enhance the body's metabolic function.		

TW-03	NAME(S)	Chen Xiao-Dan
ORGANIZATION	ChenYiWuYu Eco-Technology Development Co., Ltd.	
TITLE OF ENTRY	<b>ChenYiYanXuan Fermented Annona Squamosa Collagen Peptide Drink</b>	
ChenYiYanXuan's Fermented Annona Squamosa Collagen Peptide Drink utilize a complex combination of natural ingredients and collagen proteins to improve the condition of the facial skin. Thus developing the product, with a unique 3+6 ratio formula was used for the first time in the market. It contains 3 types of collagen proteins: Humanoid collagen peptide, Rousselot Peptan Marine collagen, and NIPPI collagen; along with 6 effective ingredients: TCI's Annona Muricata Ferment, chrysanthemum fructose powder, sphingomyelin, bonito elastin protein, sodium hyaluronate, and GABA.		

<b>TW-04</b>	<b>NAME(S)</b>	<b>Chin-Chu Chen / Pei-Cheng Lin / Han-Hsini Chang / Lee Li-Ya / Hsu Jui-Hsia</b>
	<b>ORGANIZATION</b>	GRAPE KING BIO, Chung Shan Medical University
	<b>TITLE OF ENTRY</b>	<b>Cordyceps cicadae mycelia for the amelioration of cataract</b>
<p>Cataracts are extremely common, and most cataracts are a result of the aging process. Cell phone usage and ultrasonic energy exposure can also lead to early cataract in lens. There are no medicines or dietary supplements proven to prevent cataracts. The present invention relates to a liquid fermentation method for the production of bioactive compounds in <i>Cordyceps cicadae mycelia</i> that may further be used as an oral medication to prevent or ameliorate UV-induced cataracts. Compared to commercial eye drops, oral treatment with <i>Cordyceps cicadae mycelia</i> can be a much more safer, natural, effective and inexpensive alternative in prevention and amelioration of cataracts.</p>		

<b>TW-05</b>	<b>NAME(S)</b>	<b>Yung-Hsiang Lin</b>
	<b>ORGANIZATION</b>	TCl Co., Ltd.
	<b>TITLE OF ENTRY</b>	<b>DelightTS Formula</b>
<p>TCl combines patented IBD <i>Passiflora edulis</i> seed extract, prebiotic fructooligosaccharide, inulin and erythritol to create an optimal ratio, creating a nutrient source specifically for <i>Turicibacter sanguinis</i>. This enhances its growth in the intestine, stimulates serotonin synthesis, and assists the generation of melatonin to achieve a sleep aid effect. Considering that much of the melatonin available in the market is obtained from animal extracts, or through chemical synthesis, making it a prescription drug, it results in usage restrictions in most countries. In contrast, TCl increases the amount of <i>Turicibacter sanguinis</i> in the gastrointestinal tract to produce melatonin, a natural method that avoids potential depletion and bioavailability issues from exogenous intake. In vitro, cultivation with the DelightTS formula showed that it can increase the relative bacterial count of <i>Turicibacter sanguinis</i> by up to 2 times. After 4 weeks of human clinical trials, the <i>Turicibacter sanguinis</i> of the 4 subjects increased by 3.4 times, and the expression of genes related to the synthesis of tryptophan, a precursor of serotonin, also increased by 27.5%, helping to increase the production of serotonin in the body. It also increases the sleep-related metabolic product propionate in the intestine by 21% and has the effect of increasing the ratio of sleep-promoting bacteria and reducing insomnia-related bacteria. Regarding sleep tests, the proportion of the rapid eye movement (REM) phase increased by 4% after four weeks, which can strengthen memory and reduce the sense of fatigue.</p>		

<b>TW-06</b>	<b>NAME(S)</b>	<b>LIANG, TIEN-SHOW / MENG, EN / CHERNG, JUIN-HONG</b>
	<b>ORGANIZATION</b>	GREEN ENERGY NANO TECHNOLOGY CO., LTD / Innovation Incubation Center of Tri-Service General Hospital
	<b>TITLE OF ENTRY</b>	<b>Golden cozy pillow</b>
<p>GreenE's nanotechnology far-infrared textile products are based on natural therapy. Whether it is used as an adjuvant to drugs, or to help relieve symptoms that have not yet required medication but have already appeared in various discomforts in the body, they have significantly improved. It is especially suitable for such groups: those who often feel unwell, have stiff muscles, lack of exercise, poor peripheral blood circulation and metabolism. This new product "Golden cozy pillow" also uses this nano-textile technology. Good blood circulation can not only achieve a deeper sleep, but also improve insomnia, difficulty falling asleep, and calm the tense spirit during the day. This product has been clinically registered in the American Medical Library, and registered in the US Food and Drug Administration FDA, EU Medical Device CE and other international medical certification. Using the non-thermal effect of bioenergy to resonate with water molecules to help metabolism and blood circulation.</p>		

<b>TW-07</b>	<b>NAME(S)</b>	<b>Yung-Hsiang Lin</b>
	<b>ORGANIZATION</b>	TCl Co. Ltd.
	<b>TITLE OF ENTRY</b>	<b>Jackfruit Pulp Extract</b>
<p>Jackfruit white core refers to the immature jackfruit pulp, which is fibrous and typically not consumed. Adhering to the concept of the circular economy of agricultural byproducts, TCl purchases agricultural byproducts, such as the jackfruit white core, from farmers. Through the "Bio-Resource Data Mining platform" and the "Upcycle Agricultural Waste to Gold" project, TCl finds health benefits from agricultural byproducts. This not only reduces agricultural waste and increases the added value, but it also creates additional income for farmers. The 100% natural jackfruit pulp extract can effectively meet the market's demand for menopause health food. Therefore, TCl views this as a key investment project and is optimistic about its future development. Besides the utilization of the jackfruit white core, TCl is also continuously actively looking for more applications of agricultural byproducts, increasing purchased volume from farmers, and expanding its influence in the biomedical industry.</p>		

<b>TW-08</b>	<b>NAME(S)</b>	<b>Cheng Huang / Yi Chung Lai</b>
	<b>ORGANIZATION</b>	Biozyme Biotechnology Corp.
	<b>TITLE OF ENTRY</b>	<b>Liposome structure for enhancing enzyme activity and thermal protection performance</b>
<p>This liposome structure enhances enzyme activity and provides thermal protection, which reduces the destruction of superoxide dismutase and superoxide dismutase-like enzymes derived from fermented fruits and vegetables during thermal processing, and maintains at least 80% of the superoxide dismutase and superoxide dismutase-like enzymes effect for over two years in storage.</p>		

<b>TW-09</b>	<b>NAME(S)</b>	<b>Cheng Huang / Yi Chung Lai / Bo Ru Lai</b>
<b>ORGANIZATION</b>	Biozyme Biotechnology Corp.	
<b>TITLE OF ENTRY</b>	<b>Particle structure of rutaceae plant fermentation broth with biomimetic stroma system</b>	
<p>This invention about a particle structure for Rutaceae fermented liquid. This particle structure including two part. Outer material is a kind of small molecule polysaccharide made by fermentation technology from mushroom or algae. It's thickness from 10-4 to 10-3 mm. The inner layer material is effective substance from rutaceae fermented liquid. It's thickness from 10-5 to 10-4 mm. This particle structure can keep effect that weight control and skincare from rutaceae fruit. Glycoside will be change by small molecule polysaccharide on part of phytochemicals when fermented. This fermentation technology improve body absorption rate and maximum effect. Even if the output has not increased, the effective dose can also be significantly reduced. This particle structure better than natural rutaceae extracts in using range or efficacy.</p>		

<b>TW-10</b>	<b>NAME(S)</b>	<b>Cheng Huang / Yi Chung Lai</b>
<b>ORGANIZATION</b>	Biozyme Biotechnology Corp.	
<b>TITLE OF ENTRY</b>	<b>Structure of Compound Bilayer Phospholipid Particles Slowing Unpaired Electron Generation and Evapotranspiration</b>	
<p>This invention provides an antioxidant moisturizing liposome structure. It includes one lipid layer, one formulation layer and a superoxide layer, forming a complete spherical antioxidant moisturizing liposome structure. In particular, there is a release gate embedded between the formulation layer and lipid layer. This liposome structure has the ability of antioxidant and moisturizer when applied as cosmetic material.</p>		

<b>TW-11</b>	<b>NAME(S)</b>	<b>Chin-Chu Chen / Chen Yen-Lien / Lin Shin-Wei / Chen Yen-Po / Wu Szu-Yin</b>
<b>ORGANIZATION</b>	GRAPE KING BIO	
<b>TITLE OF ENTRY</b>	<b>Use of Lactobacillus fermentum GKF3 for improving depression</b>	
<p>The probiotic GKF3 can be used to improve depression. In an animal depression model, it can be seen that the serotonin in the brains of depressed rats is reduced by more than 200% after immobilization. However, GKF3 could restore serotonin and dopamine levels as well as reduce blood inflammatory factors after administration. This study provided that active modulation of the intestinal microbiota, through GKF3 supplementation, can produce serotonin and dopamine to help alleviate stress, anxiety and depression via bidirectional gut-brain connection.</p>		

## THAILAND

<b>TH-01</b>	<b>NAME(S)</b>	<b>Ms.Nitan Achayutthakan / Ms.Noppawan Pravesvararat</b>
<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School	
<b>TITLE OF ENTRY</b>	<b>Blink</b>	
<p>"Blink" an application that assists in assessing the quality of vision, aiming to reduce the burden and time associated with eye check-ups coming with four special features including: (1) Pupil scan, (2) Visual field test, (3) Color blindness test, (4) Doctor consultation: users can talk to ophthalmologists through both chat and phone call. It also has a notification system reminding users to take breaks from staring at their phone screens. The benefits of this app are twofold those are reducing the workload for ophthalmologists and providing a preliminary detect and address eye issues.</p>		

<b>TH-02</b>	<b>NAME(S)</b>	<b>Master Puripat Thangsurbkul</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>The Brainny Booster</b>	
<p>"Brainny Booster" A games box for the seniors that helps to improve the seniors brain cognitive functions with four special features including: (1) Appropriate size of colorful big buttons games box, (2) Suitable three fun games for the seniors to play: Memory game, Speed test game, Snake eats apple game, (3) Multiple levels of game to match player capability Seniors can play it every day to help them develop memory and prevent brain recession. With these benefits – Stress reduction, social interaction increase, cognitive function enhancement and good fun – Brainny Booster is the answer!</p>		

<b>TH-03</b>	<b>NAME(S)</b>	<b>Mr.Than Melapudomchai / Ms.Tanyapat Triwitayakorn / Mr. Suranuth Keerativoranant / Ms. Romchalee Ratanasirivilai / Mr. Purin Ongwandee</b>
<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School	
<b>TITLE OF ENTRY</b>	<b>C-credit</b>	
<p>C-Credits is a mobile application that employs AI to detect sustainable actions in users' daily lives. Actions leading to carbon reduction will earn c-credits, a virtual currency redeemable for discounts at partnership markets. The app offers digital camera to detect your action, tracking your up-to-date progress, and daily quests generated to suit you. By combining awareness, engagement, and tangible incentives. Not only does C-Credit help educate the user of the danger of carbon emission but also motivates individuals worldwide to actively contribute to a sustainable future, mitigating the climate crisis.</p>		

<b>TH-04</b>	<b>NAME(S)</b>	<b>Mr.Saral Assabumrungrat / Ms.Salynsha Jirapunyawong / Ms.Karnsinee Jaksemasatitkul / Mr.Pheerawas Worawichayawiwat</b>
	<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School
	<b>TITLE OF ENTRY</b>	<b>Cycloud</b>
<p>This Cycloud device was designed as a multipurpose vase that makes tree-planting more convenient from a time and space standpoint. The highlight of Cycloud is the interoperability of various circuit systems, including both lighting converter, using solar cells and water converter, which are derived from air condensation, and moisture and lighting sensors that help calculate and calibrate the timing for providing light and water to trees. Users can connect and control systems through a smartphone. It can control remote orders in real time. It also has a long and robust life due to the acrylic effect.</p>		

<b>TH-05</b>	<b>NAME(S)</b>	<b>Ms.Patchareeporn Boonwan / Ms.Thanphapawn Pikul / Mr.Pornpawit Utamapongchai</b>
	<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School
	<b>TITLE OF ENTRY</b>	<b>JUSTPLASTER</b>
<p>Main idea is to put a water hyacinth which has more disadvantages in Thailand if it has too much. We will use it to make a plaster because it decomposes faster than normal bandages. In addition, put an essential substance named Siam weed because it can stop blood breeding and antibacterial.</p>		

<b>TH-06</b>	<b>NAME(S)</b>	<b>Ms. Pryn Junual / Ms. Chutirada Santivorapong / Mr. Weerawin Vaitoonkiat / Mr. Yasintorn Poonyavanich</b>
	<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School
	<b>TITLE OF ENTRY</b>	<b>Narcolepsycue: Device for Preventing Drowsy Driving</b>
<p>Our solution to detect the driver's drowsiness is to use the OpenCV and DLIB to find the eye level and after receiving the information, python coding will process whether the driver is sleepy or not by using criteria, which is 6 blinks in 3 seconds and closing your eyes for more than 3 seconds. After processing and detecting that the driver is drowsy, the system will spray wasabi solution to wake the driver up. If spray spatter 2 times in a row and the machine still can detect as sleepy it will send this to Line Official to take care of it.</p>		

<b>TH-07</b>	<b>NAME(S)</b>	<b>Ms.Pattawan Piboontum / Ms.Patteera Orapimpan / Mr.Pitchakorn Orapimpan</b>
	<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School
	<b>TITLE OF ENTRY</b>	<b>Oh My Back!</b>
<p>An intelligent Seat/ Back Floor Cushion with multi-sensor to track user's seating posture and encourage healthy seating position. The cushion can also be used on chairs and work together with Oh My Back! Mobile Application which user can set goal, be notified when in the incorrect position and receive seating report &amp; analysis.</p>		

<b>TH-08</b>	<b>NAME(S)</b>	<b>Tanyapat Triwitayakorn / Alisa Triwitayakorn</b>
	<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School
	<b>TITLE OF ENTRY</b>	<b>Touchless Eco-Sink</b>
<p>"Touchless Eco-Sink" was created to overcome the world's major problems, water supply shortage and health crisis especially during COVID-19 pandemic. It is an effective automatic sink that compiles systems to separate black and gray water and save water by taking gray water back for reusing. In addition, touchless technology was included to avoid any physical contact in order to prevent the spread of infectious diseases. It is adjustable and suitable for installing in any residential and public places. The concept of the "Touchless Eco-Sink" will be useful for water conservation, water efficiency, and hygiene purposes.</p>		

<b>TH-09</b>	<b>NAME(S)</b>	<b>Prin Udomkiatikul / Chayapa Srivoravilai / Piyasoranee Winayanuwattikun</b>
	<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School
	<b>TITLE OF ENTRY</b>	<b>Magic Cool Pack</b>
<p>"Magic Cool Pack" is created to solve three major pain points. First, it does not require freezer to store, making it convenient to carry and ready to use anytime. Second, when used, its temperature can instantly be reduced and maintained cool up to 15 minutes. Finally, unlike traditional iced cold pack which is usually hard and not easily bendable, it is designed to have soft specific shape which can cover closely in areas such as nose and finger. Our product is also environmentally friendly as we use decomposable and cost-effective chemicals as well as biodegradable materials in our packaging design.</p>		

<b>TH-10</b>	<b>NAME(S)</b>	<b>Master Nathan Chalokepunrat / Master Nagan Chalokepunrat</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>Happy Pill Dispenser</b>	
<p>The "Happy Pill Dispenser" is an invention that aims to revolutionize the medication-taking process. Its purpose is to simplify and enhance patient compliance, making it easy, effortless, enjoyable, engaging, and effective, particularly for the elderly. This automatic dispenser operates on a pre-set schedule, controlled through a mobile application. It includes an alarm and display function, providing visual and auditory notifications when capsules are dispensed. The accompanying mobile app allows users to set medication schedules and receive notifications for missed capsules and low supply. Additionally, doctors and caregivers can easily monitor how patients take their medicine through the app.</p>		

<b>TH-11</b>	<b>NAME(S)</b>	<b>Master Laypakorn Crueasom / Miss Avieka Khlaisang / Miss Sunattida Matavarakorn / Miss Wynnycha Chottirapong / Mister Jeerasak Jitrotjanarak</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>Magic Flexi: Enhancing Practicality &amp; Hygiene in Portable Dining</b>	
<p>Magic Flexi is a strengthen and expandable food tray for outdoor activities. With its firmly secured structure, it could be used anywhere to minimize food spillage and hygiene risk. Moreover, it can snap together with other trays to magically transform into a shared table for an amazing party. This portable food tray will boost individual, couple, family, and friend more enjoy eating and happy time together. With its practical design, it ensures that your meals stay intact and spill-free, the product's potential spans various sectors, including travel and outdoor recreation, food delivery services, and even in the food tray industry.</p>		

<b>TH-12</b>	<b>NAME(S)</b>	<b>Thaninkit Prasitdumrong / Pran Udomsawaengsup / Sirarin Prasitdumrong / Jeerasak Jitrotjanarak</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>O-NE CASE air purifier</b>	
<p>O-NE CASE is an air purifier with the combination of HEPA/Carbon filter (to filtrate particles including dust, undesirable odor, PM10, PM2.5 etc.) and UVC lamps (for germicidal function killing bacteria, virus and fungus). It is an adapted standing version of CASE air purifier which was a ceiling type air purifier. The machine is compact in size, light weight, easy to move, and has a luxurious design. It comes with the multifunction display which also has an air quality and PM2.5 reader.</p>		

<b>TH-13</b>	<b>NAME(S)</b>	<b>Miss Rawin Choocharukul / Master Pasan Sanpanawat / Miss Thanhathai Jittham / Master Pawin Rungrojchaipon</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>SAS Smart Alert Sensor</b>	
<p>The SAS Smart Alert Sensor is an elegantly designed home decor that comes equipped with highly sophisticated sensors that work in unison to detect various types of emergencies. These emergencies include but are not limited to earthquakes, fires, and gas leaks. With its state-of-the-art technology, this device sends instantaneous alerts to your mobile phone, allowing you to respond proactively using the user-friendly application. This way, you can stay ahead of any potential emergencies and take necessary measures to protect yourself and your loved ones.</p>		

<b>TH-14</b>	<b>NAME(S)</b>	<b>Ms. Natakaphon Apikasemsant / Ms. Alicja Kramarczyk / Ms. Nitcha Vitooraporn / Ms. Pannaporn Thongcharoen</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>5-in-1 Page Turner</b>	
<p>Playing a musical instrument that requires both hands, such as a violin or flute, presents a unique challenge when it comes to turning pages of sheet music. The common struggle among young musicians is that they need to maintain uninterrupted play while navigating through multiple pages. To eliminate these challenges, solve problems and serve unmet demands for young musicians like us. We started by listing what we need from our own experience and other young musicians. From there, we have developed 5-in-1 Page Turner, all-in-one concept, consists of a hand-free page turner, recorder, timer, metronome, and cooling fan.</p>		



<b>TH-15</b>	<b>NAME(S)</b>	<b>Master Waranyu Kittithawornkul</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>Wellbeing Connect</b>	
<p>Currently, the mortality rate from serious illnesses is consistently increasing, and many countries face issues related to poverty, including disadvantaged groups, which make it difficult to access medical services. Therefore, to promote good health and reduce inequalities, I will develop innovations that address the following three areas: (1) Create a virtual doctor application that provides health advice without any cost, (2) Create a device for daily health monitoring that will notify individuals of any abnormalities and allow them to promptly schedule appointments with doctors, and (3) In case of emergency, immediate assistance can be requested from the nearest hospital's medical team.</p>		

<b>TH-16</b>	<b>NAME(S)</b>	<b>Ms. Phichphanita Mathasuriyapong / Mr. Thantham Jittham / Ms. Warinsaya Sereepapong / Ms. Pimbisa Bisalputra</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>Germ Guard Goo (G.G.G.)</b>	
<p>Maintaining a safe and clean environment is crucial for our health and well-being. With the increasing focus on environmentally friendly products, a revolutionary solution has emerged in the form of a dust-cleaning, germ-preventing, reusable slime called the G.G.G. This innovative product not only helps to eliminate dust particles but also provides a barrier against germs with help from its textural construction and unique scientific compartments.</p>		

<b>TH-17</b>	<b>NAME(S)</b>	<b>Mr. Thantham Jittham / Ms. Pimbisa Bisalputra / Ms. Warinsaya Sereepapong / Ms. Phichphanita Mathasuriyapong</b>
<b>ORGANIZATION</b>	Satit Chula Innovation Society, Chulalongkorn University Demonstration Elementary School	
<b>TITLE OF ENTRY</b>	<b>Specialized Cleaning and Residue Unveiling Bot (S.C.R.U.B.)</b>	
<p>Keeping our surroundings clean by maintaining stain-free fabrics can be a time-consuming task. This is where the inspiration for the S.C.R.U.B. comes in. It brings multiple components together to create a compact, multipurpose housekeeping tool. It includes a cleaning substance specially formulated to tackle a wide range of stains, including food spills, ink marks, and oil stains, a supersonic vibrator for shaking off stain particles, and a vacuum for collecting dislodged dust debris.</p>		

<b>TH-18</b>	<b>NAME(S)</b>	<b>JIRANAT CHAIYOSBURANA</b>
<b>ORGANIZATION</b>	NIST International School of Thailand	
<b>TITLE OF ENTRY</b>	<b>M-Shield ION Brick</b>	
<p>M-Shield ION (a building block) is a revolutionary solution for the construction industry; it is made from bio-calcium carbonate derived from mussel shell waste, in which the bricks/blocks are carbon neutral and also have the ability to reduce toxic gas levels. They provide a unique value proposition as a green building solution and are perfect for construction companies, architects and builders who are looking for sustainable building materials. Since traditional bricks are unable to absorb noxious global warming causing compounds such as nitrogen oxides and have a high carbon footprint, our brick not only minimizes a typical brick's carbon footprint but also has the potential to convert noxious compounds into non harmful compounds. Although our products cost more compared to traditional bricks, the environmental benefits of our blocks are the key differentiator of our brick from other bricks in the current market.</p>		

<b>TH-19</b>	<b>NAME(S)</b>	<b>Jeerasak Jitrotjanarak / Chavarat Wangweera</b>
<b>ORGANIZATION</b>	Northfield Mount Hermon School (USA)	
<b>TITLE OF ENTRY</b>	<b>CareCamera</b>	
<p>CareCamera is an innovative platform connecting bedridden patients with medical personnel through EKG, temperature, and SPO2 sensors for real-time vital sign monitoring. Data is remotely accessible via a cloud-based platform, triggering alerts during emergencies. The platform also includes a camera for real-time monitoring and video conferencing. CareCamera improves patient quality of life, reduces transportation costs, and empowers medical personnel to care for more patients efficiently.</p>		

<b>TH-20</b>	<b>NAME(S)</b>	<b>Pornprapat (Pan) Jirapojaporn</b>
<b>ORGANIZATION</b>	Ruamrudee International School (RIS)	
<b>TITLE OF ENTRY</b>	<b>Saveomatic</b>	
<p>Saveomatic is an innovative and stylish portable solution designed to reduce the impact force from hitting the ground while falling. It incorporates cutting-edge technology such as a gyroscope and accelerometer to detect the onset of gravitational fall within a timeframe of 0.5 to 1 second. By swiftly responding to the fall, Saveomatic deploys a cushioning mechanism that utilizes gas to inflate an airbag, effectively safeguarding the body from injury. This revolutionary capsule ensures the safety of individuals, it caters to a wide range of users, including children, the elderly, and those with mobility challenges. Saveomatic was designed to be portable, fashionable, and effortless to wear. The capsule can be conveniently attached to any desired location on the body with a magnet mechanism. Furthermore, customization options are available for customers to personalize their Saveomatic experience. From a variety of vibrant colors and patterns to the option of adding names or personal touches.</p>		

<b>TH-21</b>	<b>NAME(S)</b>	<b>Nutvarit Manorotchatrong</b>
<b>ORGANIZATION</b>	Ruamrudee International School	
<b>TITLE OF ENTRY</b>	<b>Seaventure App. Marine Conservation Society</b>	
<p>SeaVenture is an app that aims to help marine life by addressing the problem of ghost gear, which refers to abandoned fishing equipment, such as nets, lobster traps, and lines. Ghost gear poses a significant threat as it can trap marine animals, pollute beaches, and destroy habitats. SeaVenture allows divers to not only form a community but to also help the ocean. It allows users to report any ghost gear they find that is too big or dangerous to clean up themselves. Once a report is submitted, volunteers will be able to join the effort to go out and collect that ghost gear. To motivate people, there will be a reward system where those who volunteer and report ghost gear will receive coins, which will unlock their membership and can be traded for perks such as discounts on certain items with partnered businesses. While its main function is to report ghost gear, it also functions as a logbook and a blog where people can share pictures of their dives.</p>		

<b>TH-22</b>	<b>NAME(S)</b>	<b>Mr. Kritpaul Prasattongsoth</b>
<b>ORGANIZATION</b>	Ruamrudee International School	
<b>TITLE OF ENTRY</b>	<b>Clinic Connect Application</b>	
<p>Clinic Connect: Revolutionizing Healthcare Access! Clinic Connect is a groundbreaking platform, connecting healthcare clinics, dental clinics, and pharmacies in your vicinity. Say goodbye to crowded hospitals and embrace timely treatments. Make online appointments, see real time queue at clinics/dental clinics or buy medicine and have it delivered to your doorsteps. All done on the palm of your hand with your smart phone.</p>		

<b>TH-23</b>	<b>NAME(S)</b>	<b>Chomchan Sittikit</b>
<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School	
<b>TITLE OF ENTRY</b>	<b>Ice-separated (Boba-licious)</b>	
<p>My innovation is used for separating the ice when you are eating boba tea. I evaluate this from my own problem which is the boba or the tropica pearl usually get stuck with the ice. I found it very annoying. Basically, this ice-separated works as a strainer which holds the ice. However, the pearl will be at the bottom as normal. In that way, this makes it easier to eat the pearl. About the material, I will use plastic because I want the user to reuse it.</p>		

<b>TH-24</b>	<b>NAME(S)</b>	<b>Prema Yugala</b>
<b>ORGANIZATION</b>	Shrewsbury International School Bangkok	
<b>TITLE OF ENTRY</b>	<b>Mosquitoes Away! Box</b>	
<p>The Mosquito Away Box presents an eco-friendly and sustainable solution for mosquito control in tropical regions. Utilizing a sustainable chemistry concept with the Ultrasound Assisted Extraction technique, it harnesses locally extracted essential oils to repel mosquitoes without harming other insects, ensuring the environment's natural balance. Additionally, the product repurposes the troublesome freshwater weed, water hyacinth, tackling two issues at once. This innovative approach seeks to revolutionize mosquito control practices while preserving delicate ecosystems, making it a promising and practical solution for effective mosquito management without environmental harm.</p>		

<b>TH-25</b>	<b>NAME(S)</b>	<b>Ratchapon - Sarunya Tajaya</b>
<b>ORGANIZATION</b>	Satriwithaya School	
<b>TITLE OF ENTRY</b>	<b>The application of broken glass to the invention of Thai ancient glass (Kriab mirror) for increase the value of international mosaic arts</b>	
<p>Thai ancient glass (Kriab mirror) is an invention that emerged from the concept by Restoration of knowledge of Thai arts and culture in the past together with the application of scientific knowledge in another dimension. Using waste glass as a component to produce an innovative thing, with environmental protection concept. "Turn waste into art" This material is useful in restoring and preserving Thai art and extending creativity and increasing the value of works of art in the ASEAN region. It is also a beautiful material of choice for "Mosaic art" in cultures around the world.</p>		

<b>TH-26</b>	<b>NAME(S)</b>	<b>Mr.Pannatorn Somsaruay / Miss Nanthiya Somsaruay / Mr.Direk Sueseenaek</b>
<b>ORGANIZATION</b>	Dhonburi Rajabhat University / Lampang Rajabhat University / Srinakharinwirot University	
<b>TITLE OF ENTRY</b>	<b>Bangkok's Khlong Bang Luang Art and Cultural Tourism Routes</b>	
<p>Khlong Bang Luang or Bang Luang Canal is located in Thonburi District; formerly a Siam's major city; of which long history and art and cultural diversity has been derived from three religions; which are Buddhism, Christianity, and Islam, there are Chinese temples. Easily accessible from various major roads; Khlong Bang Luang is popular with its shady riverside atmosphere. There are tourism routes based on traditional important days and events, unique way of life tours, community product promotion, and local dishes; all of which bring income to the community for being an art and cultural tourism attraction.</p>		

<b>TH-27</b>	<b>NAME(S)</b>	<b>Mr. Buddharak Sodtana</b>
<b>ORGANIZATION</b>	Naresuan University Secondary Demonstration School	
<b>TITLE OF ENTRY</b>	<b>The External Medicine Applicator</b>	
<p>Whether or not external application takes place in a position where people cannot individually reach or see it is the topic of concern. I have created an invention named "The External Medicine Applicator" to tackle this obstacle. Firstly, the applicator can be controlled by moving the arm using the mobile phone in the Blynk App. Subsequently, the camera is connected to the phone, allowing for real-time visualization of the wound on the screen. As a result, the data demonstrates that external drugs consisting of creams, gels, waxes, and liquids can be applied externally by the External Medicine Applicator.</p>		

<b>TH-28</b>	<b>NAME(S)</b>	<b>Master Apirat Pudduang / Master Suthiwat Paisalee / Master Archavin Rungruang</b>
<b>ORGANIZATION</b>	Srinagarindra the Princess Mother School Rayong	
<b>TITLE OF ENTRY</b>	<b>HDPE Artificial concrete /walkway</b>	
<p>Many plastic bottles are used for beverages. causing environmental problems from a large amount of plastic waste Block the drains and flow into the sea to destroy the environment in the sea. The makers therefore thought of using plastic caps as a substitute for concrete. Because concrete is obtained from mountain eruptions, it affects the environment by introducing Therefore, an artificial concrete project was created to reduce waste and preserve the environment. HDPE Artificial concrete.</p>		

<b>TH-29</b>	<b>NAME(S)</b>	<b>Miss Pinyapat Prisananuntakul / Miss Arachaporn Malimas / Miss Phannapat Promchan / Master Jirawat Kengka / Miss Papichaya Makpon</b>
<b>ORGANIZATION</b>	Chiang Mai University Demonstration School	
<b>TITLE OF ENTRY</b>	<b>Pelleted product for Pink lady rice which has anti-cancer activities to reduce risk of developing lung cancer</b>	
<p>Rice is the main food for Thais with properties and nutritional value that are beneficial to the body. According to research, it was revealed that black rice contains important chemical compounds such as anthocyanin, which has the effect of inhibiting many types of inflammation and anti-cancer. Pink lady rice is an interesting rice which is full of nutrients and benefits health especially anti-inflammation which is one of the processes developing cancer. Pelleted product from Pink lady rice is an innovation which reduces the risk of lung cancer and also helps consumers get enough essential substances for the body. It's a good choice for everyone who wants to take care of themselves to eat every day.</p>		

<b>TH-30</b>	<b>NAME(S)</b>	<b>Miss Wirada Rithikupt / Master Worrapop Kampafang / Master Pokpong Vichitsilp</b>
<b>ORGANIZATION</b>	Chiang Mai University Demonstration School / Montfort Collage / Wichai Wittaya School	
<b>TITLE OF ENTRY</b>	<b>Gel product from Moringa Oleifera Lam. Leaf extracts which has an anti-inflammatory effect of the skin</b>	
<p>Moringa Oleifera Lam. is a local vegetable that is widely grown. Studies have shown that Moringa Oleifera Lam. leaves have interesting medicinal properties especially the antioxidant effect. Moreover, it also contains important substances such as phenolics and flavonoids. That's why we want to process Moringa leaves into gel product to nourish the skin and reduce the risk of skin cancer.</p>		

<b>TH-31</b>	<b>NAME(S)</b>	<b>Mr. Nuntawat Ta-In / Mr. Nutthanon Suntigul / Mr. Poonpiti Pongsirirushkul / Mr. Prameachita Daolert / Miss Siripapha Panturaporn</b>
<b>ORGANIZATION</b>	Montfort College	
<b>TITLE OF ENTRY</b>	<b>Activated carbon encapsulated garlic extract solution for antibacterial in fish tank</b>	
<p>The potential of garlic (<i>Allium sativum</i>) extract using DI water and ethanol as solvent to control bacteria (<i>Aeromonas hydrophila</i>) in ornamental fish was studied. The garlic extracts were encapsulated with activated carbon. The encapsulated activated carbon contained garlic extract solution using 70% ethanol as solvent exhibited the best swelling ratio in water and the highest adsorption value from activated carbon. In addition, it showed the best antibacterial efficacy against <i>Aeromonas hydrophila</i> commonly found in ornamental fish.</p>		

TH-32	NAME(S)	Mr. Narit Nitjapan / Miss POUNGMANEE Phromchana / Miss Naphattra Pripwai / Miss Napaphat Datpratoom / Mr. Tananop Panyamoonwongsa
ORGANIZATION		Montfort College
TITLE OF ENTRY		Antifungal spray from basil leaves extract applied for handicraft products made from natural fibers
<p>The local handicrafts made from water-hyacinth fibre are easily deteriorated with scattered brown and black spots when stored in humid environment. The most common methods used to eliminate mold in these products are using Traetex 243, but these methods have a negative effect on chemical residues that cause allergies and are harmful to users. Sweet basil (<i>Ocimum basilicum</i> Linn) contains ocimene, alpha-pinene, 1,8-cineole, eucalyptol, geraniol, limonene, eugenol, methyl cinnamate, 3-hexen-1-ol, estragol which ability to inhibit a variety of microorganisms, bacteria and fungi. This is effective in inhibiting the growth of fungi, comparable to fungicide chemical such as hexaconazole.</p>		

TH-33	NAME(S)	Mr. Rapeepong Rairung / Mr. Kongpob Sathorn / Mr. Natthawat Samlee / Mr. Ratchakrit Prasitthimee / Miss Parachaya Muentabutra
ORGANIZATION		Montfort College, Bunyawat , The Prince Royal's
TITLE OF ENTRY		Developing driver doze off detection system
<p>According to WHO Global Report on Road Safety 2021, Road accidents are one of the major problems affecting the economy, society, and public health Thailand ranked second in the world in terms of road accident injuries and deaths. There have been proven accidents caused by "sleepiness" while driving a total of 1,270 times, with over speeding and head crashes in downtime ranking third. So wake sure was created to solve the problem of dozing off while driving. It is a device that monitors the driver's fatigue levels and alerts them when they are at risk of falling asleep, ensuring safer roads for everyone.</p>		

TH-34	NAME(S)	Mr. Tanawat Yenchan / Mr. Phusit Nanirattisai / Miss Thunwarat Sridang / Miss Natwalai Orachaipunlap / Mr. Putip Nganrungchotchoung
ORGANIZATION		Montfort College, Saint Gabriel's College, Dara Academy
TITLE OF ENTRY		High efficiency Pet odor absorbent pads made from waste materials
<p>This project explores the pet odor absorption efficiency of coffee grounds and chicken eggshells, which are waste materials. When there are many, it causes pollution problems for the surrounding environment. Then, our team put it to good use by collecting used coffee filter paper from coffee shops and our houses as a precursor. Firstly, soaking it in water to fester. Secondly, blend thoroughly and mix with coffee grounds, finely ground roasted eggshells, camphor, citronella essential oils. Finally, mix with the solder, knead well. The experiment was divided into 3 formulas. Formula 1 contains the main ingredients of coffee filter paper and herbs. Formula 2 contains coffee filter paper, coffee grounds and herbs. Formula 3 contains coffee filter paper, coffee grounds, finely ground roasted eggshells and herbs when tested for odor absorption efficiency by giving each formula a 1-week interval , it was found that formula 3 most effective.</p>		

TH-35	NAME(S)	Mr. Pongnakorn Kunapornchaipong / Miss Napatrapee Chaiwong / Miss Nutnicha Kumwung / Miss Paphada Pathommatikul / Mr. Panupong Uprajong
ORGANIZATION		Montfort College
TITLE OF ENTRY		Premium Herbal with Eggshells scrub toothpaste for coffee and tea stain removal
<p>This project has studied about the efficiency of eggshell which has some mashes similar to human bones and teeth. The eggshell is the waste from kitchen which is able to pollute the environment. The selected eggshells were taken to cleaning process, powdered, and blended into the toothpaste with Thai herbs, from both plants and animals, for instance, cuttlebone, Khoi bark, and clove. The selected herbs were from the standardized production source and separated as 2 formulations of herbal toothpaste, the original and the eggshell-blended. As a result, both types have a pH balance, and toothpaste texture and a cool, fresh scent as well. As being tested by 15 qualified volunteers who have no seafood allergy and drink tea and coffee every day, brush teeth twice a day, brushing teeth with the herbal toothpaste for 7 days and another 7 days with the eggshell-blended toothpaste. The satisfaction average of using the original the eggshell-blended toothpaste in highest score is 24.7.</p>		

TH-36	NAME(S)	Tanwalai Chirandorn / Uraiwan Phetkul
ORGANIZATION		Faculty Liberal Arts Rajamangala University of Technology Srivijaya (RUTS)
TITLE OF ENTRY		The extraction of beta-glucan from <i>Schizophyllum commune</i>
<p>The homopolysaccharide beta glucan (β-glucan) is composed of linked glucose molecules. β-glucan, also known as Schizophyllan in <i>Schizophyllum Commune</i>, is a single-chain polysaccharide. Its primary structure is made up of glucose, which is linked by a direct chain bond β-(1,3) glycosidic and β-(1,6) glycosidic, which is a short, water-soluble branch and a non-ionic substance. This form of polysaccharide has piqued the interest of the medical and pharmaceutical sectors.</p>		

<b>TH-37</b>	<b>NAME(S)</b>	<b>Miss Pattanan Chanhom / Mr. Thanaphat Utrakian / Miss Nutchanun Punyaso / Miss Thanchanok Chaimuangchuen / Miss Suthida Suriyayot</b>
<b>ORGANIZATION</b>	Chiang Mai University Demonstration School / Montfort College / The Prince Royal's College	
<b>TITLE OF ENTRY</b>	<b>Temporary burnt coconut husks charcoal hair dyed cream "Coco Charcoal Lock Color Hair Cream"</b>	
<p>Coconut husks are waste materials from industrial and household factories which able to become a breeding ground for germs, fungus, carbon dioxide emissions, methane and spawning breeders of beetles which are important pests of coconut farmers. Although, the most reduction is landfill but not all, there is still a lot of waste. We have an idea to use burnt coconut husks charcoal for gray hair. This project examined efficiency of temporary burnt coconut husks charcoal hair dyed cream compared with temporary chemicals hair dyed creams in the market. The selected coconut husks were dried and burnt completely to red charcoal. After that, grind finely until become black charcoal powder. Visual inspection of chemicals and physical characteristics such as pH, color, odor, solubility. Color extraction with 95% ethanol, evaporate and dry at temperature room. Then grind into a fine powder to get a dark black color. When mixed with a cream base, a black cream is obtained. Test the application of color to gray hair compared with temporary chemicals hair dyed cream. As a result, the temporary burnt coconut husks charcoal hair dyed cream more effective than temporary chemicals hair dyed cream.</p>		

<b>TH-38</b>	<b>NAME(S)</b>	<b>Asst. Prof. Khiensak Seangklieng, Ph.D., ASA.</b>
<b>ORGANIZATION</b>	Faculty of Architecture and Planning, Thammasat University	
<b>TITLE OF ENTRY</b>	<b>NORA PURA: A Sustainable Community with LCDs Design Approach</b>	
<p>The objective of this invention has been strongly created the radical philosophy of NORA (recognized as an Intangible Cultural Heritage-ICH by UNESCO) into the flagship project as a prototype of futuristic sustainable community. The design of NORA PURA is integrated with self-help and self-made using 10 award-winning innovations of Dr. Khiensak combined together in both radical indigenism of Nora Kriandech and key principles Low-cost Design Solution: LCDs theory. NORA PURA consists of Innovative architecture and built environment such as Nora Gateway, Living Museum, Car Far No Rare, Nora Pavilion and Innovative House. Bio-intensive Farming is also applied into research-based design project.</p>		

<b>TH-39</b>	<b>NAME(S)</b>	<b>Asst. Prof. Khiensak Seangklieng, Ph.D., ASA.</b>
<b>ORGANIZATION</b>	Faculty of Architecture and Planning, Thammasat University	
<b>TITLE OF ENTRY</b>	<b>LCDsongkhla: An Innovative PARK with Dynamic Sustainability</b>	
<p>The objective of this invention has been strongly intended and created a reverence for Pha-Prem Park. With the existing conditions of The General Prem Tinsulanonda Historical Park of Songkhla, the design of LCDSongkhla Park is integrated with self-sufficient philosophy and using 20 award-winning innovations and architectural design projects of Dr. Khiensak combined together in both local wisdom and tectonics of indigenous and vernacular-inspired methodology. The key principles of Low-cost Design Solution: LCDs theory is applied into master planning, site re-development. LCDSongkhla Park consists of Innovative architecture and built environment that is designed also by using research-based design approach.</p>		

<b>TH-40</b>	<b>NAME(S)</b>	<b>Mr. Chookiat Choosakul / Miss. Khwanchiwa Yongsata / Dr. Tawich Klathae / Dr. Suporn Rittipakdee / Asst.Prof.Dr. Prachoom Khamput</b>
<b>ORGANIZATION</b>	College of Industrial Technology and Management, Rajamangala University of Technology Srivijaya	
<b>TITLE OF ENTRY</b>	<b>Low Carbon Bricks</b>	
<p>"Low Carbon Bricks" is an innovative building material eco-friendly, cost-effective, low thermal coefficient and high temperature resistance. It is developed by using stone dust as a binder, reducing the use of Portland cement in the production process. The "Low Carbon Bricks" using stone dust to replace Portland cement by 50%wt. "Low Carbon Bricks" has unit weight, and water absorption lower than traditional bricks, making it a new innovation in Thailand that is suitable for the construction of energy-saving and environmentally friendly buildings.</p>		

<b>TH-41</b>	<b>NAME(S)</b>	<b>Dr.Sineenat Areekit / Asst.Prof.Chadaporn Kleangjan / Asst.Prof.Wasan Hayeeyahya / Miss.Thiyanan Suankool</b>
<b>ORGANIZATION</b>	Faculty of Science and Technology, Nakhon Si Thammarat Campus, Rajamangala University of Technology Srivijaya	
<b>TITLE OF ENTRY</b>	<b>Herbal ball extract cream for relieve of muscle pain</b>	
<p>The herbal ball has been used as a Thai traditional medicine for relieving many diseases including pain. The objective of this work was to utilize an herbal ball extract to formulate a cream for relieving muscle pain in the volunteers who suffered myofascial pain syndrome. The formulation of cream containing the herbal ball extract at concentration 1% w/w was prepared and applied to their shoulder and neck for 14 days. Clinical assessments included visual analogue scale (VAS) for pain score and cervical range of motion for the neck. The result showed that the VAS was significantly different from baseline. Interestingly, the herbal ball extract significantly increased the angle of neck flexion and extension within 5 days of application.</p>		

TH-42	NAME(S)	Siriyakorn SaeJew / Sirin Tansuwanarajana / Phrachya Kangonta / Apiwit Autchariensee
ORGANIZATION		Montfort College
TITLE OF ENTRY		<b>Comparative study of the efficacy in garlic, shallot, and onion on the Elimination of skull caterpillars for social and public benefit development</b>
<p>Around the organizer's house is a vegetable garden. There are many pests. Nowadays, products for pests which are chemicals may remain in the air and vegetables. Therefore, we use garlic, Shallots, and onions, make them into a solution, and spray to eliminate skull moth caterpillars. Test the efficacy between garlic, shallot, and onion. As well as provide the knowledge we've learned to share with the community.</p>		

TH-43	NAME(S)	Rachaneekorn Hongphanut
ORGANIZATION		Chulalongkorn University
TITLE OF ENTRY		<b>Metaverse Historicovator for History Learning Media to Promote Self-Directed Learning in The Bani Era</b>
<p>"Metaverse Historicovator" is a contemporary innovation for the new period in which the world of BANI is causing difficulties with learning loss and problematic conditions that affect learners' emotions, such as anxiety, depression, and disorientation. This historical invention was developed in accordance with the processes of self-learning. As a result of scientifically innovative historical media, "Metaverse Historicovator," which combines knowledge, curiosity, and entertainment, teachers and students were able to learn autonomously and lessen the negative emotional state of the BANI world through the use of historical learning tools that bridge the real world and the virtual one.</p>		

TH-44	NAME(S)	Associate Professor Dr. Rachaneekorn Hongphanut / Mr. Ratiwat Hongphanut / Mr. Thanawin Hongphanut
ORGANIZATION		Chulalongkorn University / Patumwan Demonstration School / Srinakharinwirot University / Chulalongkorn University Demonstration School, Secondary Division.
TITLE OF ENTRY		<b>Board Game for learning history "You Rock! Bangkokian Retracing the Way of the Bangkokian Taxpayer". (Thai and English)</b>
<p>Board game "You rock! Bangkokian "Retracing the Way of the Bangkokian Taxpayer" to enhance participation in learning Thai history. The game story is about the end of the Kingdom of King Rama III. There were Chinese communities all over Bangkok. A number of Chinese people assumed the duties of "tax officers" or "tax masters" collecting taxes for the government. In that year, a group of Chinese secret societies called the "Mafia Group" who arose secretly collecting taxes illegally. But among the members of the Associate Party, there is a hidden member!!! And who exactly is the villain among the good?</p>		

TH-45	NAME(S)	Prof. Dr.Noawanit Songkram / Assoc. Prof. Dr. Nutthakorn Songkram / Dr. Sarun Chattunyakit / Assist Prof. Dr.Narongpon Aulpajidkul / Dr. Supattraporn Upapong
ORGANIZATION		Department of Educational Technology and Communications, Faculty of Education Chulalongkorn University, Bangkok Thailand
TITLE OF ENTRY		<b>Khun Sean: Smartbot computational thinking and empowering to promote computational science skills for primary school students</b>
<p>Smartbot now introduces computer science and computational thinking (CT) to primary school students. Khun Sean: Smartbot was created to enhance computational science skills in young learners. This robot facilitates interdisciplinary learning, improves computational thinking, and actively engages students. It enables problem formulation, abstraction, algorithmic thinking, analysis, implementation, generalization, and problem transfer. With its pedagogical possibilities, the Smartbot supports learning and instruction in all five computational thinking domains, broadening students' academic knowledge and fostering their computational thinking skills.</p>		

TH-46	NAME(S)	Emika Wannaprateep / Thanyarat Rangabpit / Nasettapon Navapongsireetorn / Titirat Rangabpit / Kanchisa Wankanapol
ORGANIZATION		Montfort College
TITLE OF ENTRY		<b>The effect of temperature related to rate of foam-eating by Superworm</b>
<p>The research was made to determine the best temperature at which the Superworm can eat the foam in the most realistic environment. Starting from the design of the experiment, the Superworm were placed in 9 boxes of different temperatures, as follows; 3 boxes of cool temperature, 3 boxes of room temperature and 3 boxes of hot temperature by giving a variety of foams as follows; foam pellets, foam from real waste heaps and synthetic foam pigments. According to this research, this Superworm can help consuming the foam without using chemical reaction to change it into fertilizer and back to organic substance.</p>		

<b>TH-47</b>	<b>NAME(S)</b>	<b>Mr. Panat Asasuppakit</b>
<b>ORGANIZATION</b>	Montfort College	
<b>TITLE OF ENTRY</b>	<b>Hemp – Holy Basil+ Dental Floss</b>	
<p>We created a non-plastic dental floss with antibacterial effect and tested it for (a) physical effectiveness and (b) user satisfaction. In (a), a tensile testing machine was used for strength testing of hemp fibers and showed the average tensile strength was 325.7 MPa, which is sufficiently high. In (b), 40 participants aged over 20 used hemp dental floss coated with 1% holy basil essential oil. Results from a questionnaire showed satisfaction levels were (1) Excellent: strength and cleanliness (2) Good: softness and odor. Despite a need to improve fiber softness, the findings suggest a promising new alternative dental floss.</p>		

<b>TH-48</b>	<b>NAME(S)</b>	<b>Siseerot Ketkaew</b>
<b>ORGANIZATION</b>	Ramkhamhaeng University	
<b>TITLE OF ENTRY</b>	<b>Disinfection System By Pulse Corona Hybrid Technology</b>	
<p>This innovation research introduces methods for designing and constructing disinfection systems using hybrid corona pulse technology. Adopt the principle of corona discharge, combined with negative charge and desulfurization technology to maintain frequency. In high voltage circuits, using an IC#TL494 as a pulse generator can adjust the duty cycle by 8%, 16%, 33%, and 41%, and adjust the switching frequency to 20 kHz is used to drive the Power MOSFET#IRFP460 for control the operation of the high-voltage switching transformer at 1.0 kV, 2.9 kV, 3.2 kV, and 4.9 kV, using loads as electrode cells (cell corona for ozone gas generation and negative charge cell). Increasing the high voltage, the amount of ozone and negative charge will also increase. When testing at duty cycle 8%, high voltage 1.0 kV, ozone 1.28 ppm, and electric charge -1.2 kV. At duty cycle 16%, high voltage 2.9 kV, ozone 1.56 ppm and electric charge -2.6 kV. At duty cycle 33%, high voltage 3.2 kV, ozone 2.35 ppm and electric charge -3.8 kV, and duty cycle of 41%, high voltage 4.9 kV and electric charge 2.61 ppm and electric charge -4.5 kV can be used to remove microorganisms from the air to reduce their content and are tested in the computer room of the School of Engineering, Ramkhamhaeng University, with a room area of 100 square meters. The test result is disinfection system with hybrid corona pulse technology have analyzed the electrical leakage safety standard analysis (IEC60335-1) and tested total power consumption have been completed. Therefore, this research project can be further developed into commercial innovations in the future.</p>		

<b>TH-49</b>	<b>NAME(S)</b>	<b>PABHADA ASAWAKARN</b>
<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School	
<b>TITLE OF ENTRY</b>	<b>Dried Jelly Borax Test Kit</b>	
<p>A new model "Dried jelly borax test kit" is proposed for testing the food additive "borax" in healthcare food at home. This kit estimates the borax concentration in food samples by changing color from yellow to orange or red. If borax is present, indicating the food is unsuitable for consumption. The main ingredients are a dried mixture of curcumin and polysaccharide polymer. The kit offers advantages such as ease of use, easily observable color changes, and no need for professional assistance. Moreover, it is, environmentally friendly, made from natural ingredients, and safe for users.</p>		

<b>TH-50</b>	<b>NAME(S)</b>	<b>Kris Terdprisant / Prompiriya Jongrengpian / Sean Terdprisant</b>
<b>ORGANIZATION</b>	International School Bangkok	
<b>TITLE OF ENTRY</b>	<b>Robotics for Kids (R4K): Coach the Coach</b>	
<p>In the world of innovation of the 21st Century, robotics and programming knowledge is now more important than ever. However, the reality is many simply do not have opportunities to pursue this essential knowledge as can be seen firsthand in many local schools in Thailand and around ASEAN. Robotics for Kids (R4K) (<a href="http://www.r4kclub.com">www.r4kclub.com</a>) was thus founded to strive for technology equity by providing equal opportunities for robotics and programming knowledge to all children, developing the 'Coach the Coach' project to provide such robotics opportunities for all children with sustainable impact.</p>		

<b>TH-51</b>	<b>NAME(S)</b>	<b>Sittiporn Punyanitya / Sakkiti Punyanitya / Sakdiphon Thiansem / Rungsarit Koonawoot / Phanlob Chankachang / Warangkun Punyanitya / Chotika Punyanitya</b>
<b>ORGANIZATION</b>	Mae Fah Luang University	
<b>TITLE OF ENTRY</b>	<b>Preservation Of Rubber Latex By Nontoxic Method</b>	
<p>The invention aims to preserve field latex with food grade chemicals and medium temperature that are safe for humans and the environment. The process was; First, collecting field latex (Fig. 2) then mixing with water. Second, prepared solution of alkylbenzene sulfonate, NaOH, and NaCl (Fig. 3). All 3 types of solutions were put into latex in the ratio of 1:1:1 and stir for 30 minutes. Info graphic of boil latex as shown in Figure 1 which control the heat to not exceed 100 °C and stirred for 30 minutes. Finally, obtain latex that can be preserved for more than 60 days.</p>		

TH-52	NAME(S)	Sriyupa Bahalayodhin / Nayaphat Amrarong / Pichamont Jarukamjorn
ORGANIZATION		Prasarnmit Demonstration School Secondary
TITLE OF ENTRY		MicroDentalTip
<p>In the present, dentists have found many patients who have dental plaque which is a sticky substance made from leftover food and particles and saliva that mix in your mouth and if you don't brush it properly, it begins to form and build up on your teeth. This is very problematic because plaque contains microorganisms, which can contribute to tooth decay and gum disease. So, we invented a tool to help clean your teeth in the tiniest place possible called 'MicroDentalTip'. During the process, we came up with many different types of prototypes, from just a simple plastic stick with a hole for a toothpick to the final product, which is the most effective, efficient, and affordable.</p>		

TH-53	NAME(S)	Ms.Thitima Nawpraya / Mr.Wasawat tarapipattanakul / Mr.Pavared Sivatraron / Mr.Pokpong Thammaboot / Mr.Chawakorn Muangkaew
ORGANIZATION		Ratwinit Bangkaeo School
TITLE OF ENTRY		SOLARTEC PLUS
<p>Climate change and current global warming So we created an invention called SOLARTEC PLUS, which we took more than 1 year to develop. The sunlight will fall on the mirror, which has 100% reflective properties, after which the light will be reflected at the focus point, which is placed with sand batteries. The sand has the ability to store heat for a long time. When the sand battery is heated, the TEC plate or TEC1-12706 is a thermoelectric cooler, which generates electricity in a Seebeck fashion. effect based on physics The bottom part of the TEC sheet There will be a cooling sink so that the TEC sheet can cool down quickly and not deteriorate quickly. After that we maybe store it in the battery or use it. The purpose of doing so is to bring the heat from the global warming problem to be useful. Reduce some expenses such as lights in public places and most importantly, this project we developed by using equipment that is no longer used or discarded and then made into pieces to reduce waste problems as well.</p>		

TH-54	NAME(S)	FOURTHCHEM TRADING CO., LTD.
ORGANIZATION		FOURTHCHEM TRADINGD CO., LTD.
TITLE OF ENTRY		A new formulation of insecticidal : Synergistic effect of <i>Piper ribesoides</i> and deltamethrin
<p><i>Aedes aegypti</i> is the primary vector of dengue virus in tropical country, causing millions peoples of deaths each year. Moreover, deltamethrin have been found effectiveness against <i>Ae. aegypti</i>. However, it lead to a permanent residual effect thought food chains, harmful to humans and non-targeted organisms. This study aimed to evaluate the insecticides potential of deltamethrin combined with <i>Piper ribesoides</i> extracts that have a toxic on <i>Ae. aegypti</i>. The mixtures of deltamethrin and <i>P. ribesoides</i> (methanol extract) showed synergistic effect there were highly toxic to <i>Ae. aegypti</i> larvae at 15 min (LC<sub>50</sub> = 62.10 ppm) and LT<sub>50</sub> = 41.37 min. The mixture showed the increase mortality at 120 min with a LC<sub>50</sub> =5.41 ppm. Thus, current study found the mixture decreased dosage of deltamethrin for 3 times. Deltamethrin combined with <i>P. ribesoides</i> there were toxic to <i>Ae. aegypti</i> adults at 30 min (LC<sub>50</sub> =44.85 ppm). The highest insecticide presented at 120 min (LC<sub>50</sub> = 7.60 ppm), LT<sub>50</sub> was observed there against <i>Ae. aegypti</i> with a LT<sub>50</sub> of 51.30 min. Current study suggests that allelochemicals had promising insecticidal activity and effective alternative to chemical insecticides. This study was supported by National Science and Technology Development Agency, Thailand and Fourthchem Trading Co.,LTD., . At the present, a new insecticide was provided the patent by Department of Intellectual Property (No.2303001571) and commercial produced by Fourthchem Trading Co.,LTD.</p>		

TH-55	NAME(S)	Assistant Professor Dr. Jariya Romsaiyud / Mr. Naraphatra Saemram / Yorkoon Osot Co., Ltd. / Siamprai Plus (INTER) Co., Ltd.
ORGANIZATION		Department of Chemistry, Faculty of Science, Ramkhamhaeng University
TITLE OF ENTRY		Thai CoolSoothe Herbal Massage Cream with Nano Encapsulation Technology
<p>Introducing the innovative Thai CoolSoothe Herbal Massage Cream of Siamprai Plus brand, a blend of traditional Thai herbal knowledge and modern technology. Utilizing advanced Nano Encapsulation Technology, this cream offers deep penetration for more effective relief and relaxation, all while maintaining the aroma's integrity. What sets our innovative massage cream apart is the Nano Encapsulation Technology that allows the cream's therapeutic properties to penetrate deep into the skin, providing faster and more effective relief. The cooling effect offers additional relief, while the encapsulation process ensures the rich, aromatic fragrance of the Thai herbs is maintained for a sensory, therapeutic experience.</p>		

TH-56	NAME(S)	Mr.Narandet Rueangsri / Mr.Supakorn Chuthathep / Ms.Hakeema Prathanchai / Ms.Arsia luksanaphirom / Ms.Luanruthai Chuarchompo
ORGANIZATION		Wichai Wittaya
TITLE OF ENTRY		Underground Air Cooler
<p>An invention that will make cool air as opposed to an air conditioner. The amount of cold will depend on how deeply we bury. By applying the principle of physics to the innovation, it can be made to operate without costing as much as an air conditioner and can also be utilized with 12V solar panels. Can also filter the pm2.5 dust.</p>		



<b>TH-57</b>	<b>NAME(S)</b>	<b>Thanadol Wangwijit</b>
<b>ORGANIZATION</b>	Shrewsbury International School Bangkok Riverside	
<b>TITLE OF ENTRY</b>	<b>Power Generator Module for Elephant Tracker</b>	
<p>This research studies the development of an energy generator module that is used with the tracking devices for wildlife conservation by The Royal Forest Department Thailand. The module consists of three components: energy generation module, energy storage module, and energy measurement module. The energy generation module includes a flexible solar panel and 3 sets of horizontal copper coils. The research on animal movement was used to design and develop the energy production module. The electricity-generating module invention can generate sufficient electricity for the 24-hour operation demand for the device. This addresses the problem of 1 year battery lifetime of the device by extending the operational time to at least 8 years to save cost and increase the efficiency of the non-reusable tracking devices.</p>		

<b>TH-58</b>	<b>NAME(S)</b>	<b>Troy Wynn Horton / Jirakorn Ketpradit / Sutthida Techathummanan / Phatthadon Kamnasak / Chanawee Chingchayanurak</b>
<b>ORGANIZATION</b>	Montfort College Secondary Section	
<b>TITLE OF ENTRY</b>	<b>"AI-PDx: Advancing Parkinson's Disease Diagnosis through Intelligent Analysis of MRI Images"</b>	
<p>This project aims to develop the Parkinson's MRI Image Classification (PMIC) Web Application, leveraging Artificial Intelligence (AI) technology to assist in the diagnosis of Parkinson's Disease (PD) based on MRI brain scans using Machine Learning techniques. The dataset comprises 60 brain images (30 from PD patients and 30 from non-PD individuals). The evaluation of the PMIC model yielded promising results, including an accuracy of 77.41%, precision of 85.71%, recall of 100%, F1 score of 92.31%, and specificity of 75%. These evaluation metrics provide valuable insights for future enhancements, with the ultimate goal of becoming a diagnostic tool for medical professionals.</p>		

<b>TH-59</b>	<b>NAME(S)</b>	<b>Pongsakorn Lohasiriwat / Jirakit Jiraoenrat / Panich Kamalaporn / Sorachai Sae-Lim / Pitak Chuawong</b>
<b>ORGANIZATION</b>	Mahidol Wittayanusorn School	
<b>TITLE OF ENTRY</b>	<b>A simple assay to determine the type and quantity of alcohol in hand sanitizer</b>	
<p>The invention used the stem of <i>Morinda citrifolia</i> L. to determine whether the hand sanitizers may not have a standard alcohol concentration and may be adulterated with methanol. The invention is expected to reduce testing cost compared to the advanced instrument usually required. Damnacanthal (an anthraquinone isolated from the plant) was used as a reagent solution to react with hand sanitizer samples. The resulting colors of the solids and liquids can be visually distinguished by the naked eye, allowing for accurate classifying alcohol type and concentration in hand sanitizers within approximately 5 minutes. This method is cost-effective.</p>		

<b>TH-60</b>	<b>NAME(S)</b>	<b>Patarapol Lorsomradee / Nititorn Thiyanan / Chayotid Yachawanna / Pratch Khonsung / Pasittass Kumkiat</b>
<b>ORGANIZATION</b>	Wichai Wittaya	
<b>TITLE OF ENTRY</b>	<b>Self-Filtering Powered Safety Helmet for Bicycles and Motorbikes</b>	
<p>Air pollution has become an alarming problem worldwide, especially PM2.5. PM2.5 are microscopic particles measuring 2.5 micrometers or smaller in diameter. These tiny particles originate from sources such as industrial and vehicular combustions. This poses a significant risk to public health. To reduce the damaging effects of PM2.5, air filter helmets have emerged as creative personal protective devices. The helmets are installed with built-in air filtration systems that effectively terminate PM2.5 particles and other pollutants from the inhaled air. This equipment has the potential to protect the well-being of individuals in polluted areas and reduce health risks.</p>		

<b>TH-61</b>	<b>NAME(S)</b>	<b>Miss.Namthip Yuichantuek / Miss.Kanokwan Taenkaew / Miss.Kanchanasuda Phandee /Mr.Kitsada Hong / Mr.Thapakorn Poopewmake</b>
<b>ORGANIZATION</b>	Weerawatyothin School	
<b>TITLE OF ENTRY</b>	<b>SOUVENIRS SAVE WORLD</b>	
<p>The "Souvenirs Save the World" project aims to achieve three objectives: (1) to study the effectiveness of using kaffir lime essential oil as a solvent for polystyrene foam dissolution, (2) to reduce the amount of foam waste through environmentally friendly recycling methods, and (3) to assess the efficiency of crafting sustainable souvenirs. The experimental results revealed the following: (1) using 20 grams of kaffir lime essential oil can dissolve 7 grams of polystyrene foam, (2) within a 5-week period, the project successfully reduced foam waste from 61.2 kilograms to 1.3 kilograms, and (3) one sheet of eco-friendly material can produce an average of 20 souvenirs. These crafted items are durable, heat-resistant, waterproof, and can repel insects within a 1-meter radius.</p>		

<b>TH-62</b>	<b>NAME(S)</b>	<b>Miss Nanticha Supmool / Miss Alice Pattanapin</b>
<b>ORGANIZATION</b>	Satriwithaya and Samsenwittayalai	
<b>TITLE OF ENTRY</b>	<b>MediWatch</b>	
<p>There are many technological advancements available, but only a few of them cater to physical and mental needs of customers. The concept of "MediWatch" is designed to give patients easy-access to their personal health data through a watch-like device that can be used anywhere and anytime. This product is reliable and can benefit medical care professionals by reducing their workload when people take better care of their health before getting sick. We have implemented state-of-the-art AI technology, utilizing convolutional and recurrent neural networks for data analysis and interpretation. Join us on this extraordinary journey and experience the power of MediWatch.</p>		

<b>TH-63</b>	<b>NAME(S)</b>	<b>Patcharipa Jeerapat</b>
<b>ORGANIZATION</b>	Ruamrudee International School	
<b>TITLE OF ENTRY</b>	<b>Ama Wheels</b>	
<p>Ama Wheel, named after a Thai word "Grandma," is a developed rollator walker made from metal pipe at a low cost. In today's world, rollator that meets the medical standards are expensive and aren't accessible to all groups. Ama Wheels aim to integrate security systems such as an auto brake wheels and unique functions laser that are precisely selected to suit the needs of all elderly.</p>		

<b>TH-64</b>	<b>NAME(S)</b>	<b>Kandit Kornmatitsuk</b>
<b>ORGANIZATION</b>	Chulalongkorn University Demonstration Secondary School	
<b>TITLE OF ENTRY</b>	<b>3D-printed UV light-emitting diode (<i>Culicoides</i>) trap</b>	
<p>The invented trap comprises of three parts: body, light part/fan, and collection part. Its body is made from seven 3D-printed objects assembled with screws. Nine UV LEDs are applied in the light part, equipped with a particular printed circuit board (PCB). The collection part includes a no-see-um net bag and a cup added with a sorting-out screen. Although the trap is aimed for collecting <i>Culicoides</i> midges (with two custom-designed 3D-printed objects, a honeycomb part and the sorting-out screen), but can be adapted for other insects. Further, it demonstrates several advantages i.e., ease of repair and customization, and long-term cost saving.</p>		

## TUNISIA

<b>TN-01</b>	<b>NAME(S)</b>	<b>Hatem SLIMANE / Alaa BOUHAOUEL</b>
<b>ORGANIZATION</b>	Tunisian Association for the Future of Sciences and Technology (ATAST)	
<b>TITLE OF ENTRY</b>	<b>Renovation of olive cultivation sector using artificial intelligence</b>	
<p>Olivy is a website designed to aid farmers in detecting diseases that affect olive crops using artificial intelligence and machine learning techniques. Through advanced algorithm olivy analyzes the health status of the tree with the help of the image of the tree, using two AI models developed with large amount of data, in case of disease detection, it promptly generates reports about the detected disease that contain comprehensive information. Also, olivy shows a map, and highlights dangerous zones or infected areas, using a database to store the coordination, which serves as a valuable resource for other users or for the government to better plan for olive disease management. More than that, olivy provides valuable reminders to farmers to remind them to irrigate their trees, in case of dry weather, after detecting the increase of the temperature levels and the decrease of the precipitation rates.</p>		

## TURKEY

<b>TR-01</b>	<b>NAME(S)</b>	<b>YIGIT KAAAN KIZLIER</b>
<b>ORGANIZATION</b>	IZMIR ATATURK HIGH SCHOOL	
<b>TITLE OF ENTRY</b>	<b>PREPARATION OF LIPOSOMS FOR USE IN THE TREATMENT OF GLOBLASTOMA AND IN VITRO STUDIES</b>	
<p>In this study, it is aimed to create a drug transport system that can effectively provide brain tumor treatment by loading doxorubicin, a drug used in cancer chemotherapy, into liposomes that can pass through the blood-brain barrier. Liposomes were prepared by thin film technique and the size and chemical structure of the liposome were analyzed. It is seen that the peaks obtained because of the liposome FTIR analysis are compatible with the structure of the lipids. In addition, peak values are also found in literature data (Briglia et al., 2015, Güler et al. 2016). As a result of the size analysis, it was determined that the liposome had a size of 140.9 nm.</p>		

<b>TR-02</b>	<b>NAME(S)</b>	<b>Seyed Javad Roudehchi Tabrizi</b>
<b>ORGANIZATION</b>	Ankara University	
<b>TITLE OF ENTRY</b>	<b>Smart Safety-Enhancing Mobility Components ((SSMC))</b>	
<p>Motorists enjoy the perks and drawbacks of driving. It should be examined whether complete security, convenient access to always-on electricity, peace of mind from minimal damage to the car during a fire, etc., are desirable in both new and older cars. Are they intentional? To make cars safer, increase alertness, benefit from old cars without contemporary features, and build driving confidence, car flaws should be decreased and to a world with better and more advanced automobiles, even without modern technology. Consider The car always has an energy generator, an engine heating controller to prevent fires, and a smart belt to monitor the driver's health and the approaching car's speed and odometer. Side mirrors boost driving pleasure and safety and enable clever safety devices for vintage cars.</p>		

<b>TR-03</b>	<b>NAME(S)</b>	<b>Seyed Javad Roudehchi Tabrizi</b>
<b>ORGANIZATION</b>	Ankara University	
<b>TITLE OF ENTRY</b>	<b>The Metaverse Smart Students' Desk</b>	
<p>A height-adjustable desk with a digital book display on the right, a notepad and headphones on the left, a camera in the top right corner, a drawer in the right leg, the necessary sockets on the left, the screen in the front of the desk, a power cable and electronic circuit embedded in the desk, and fins make up this sleek and contemporary Metaverse desk.</p>		

<b>TR-04</b>	<b>NAME(S)</b>	<b>Ali Mousavi / Mohammad Sekhavat / Liza Najar / Ali Kaviani / Mohsen Birjani / Hossein Tahourian</b>
<b>ORGANIZATION</b>	TOUSAN	
<b>TITLE OF ENTRY</b>	<b>A device designed to alleviate muscle pain in individuals suffering from knee Osteoarthritis</b>	
<p>Osteoarthritis, commonly known as joint friction, refers to a condition where the cartilage that exists between joint bones to prevent friction has been destroyed. This disease can occur in any joint in the body, but is more commonly found in joints that bear a lot. Our invention is a muscle pain relief gadget for individuals with knee osteoarthritis, which increases blood circulation in the area of the injured tendons and muscles using electrical pulses of weight, such as the knee, arm, upper arm, and spine.</p>		

<b>TR-05</b>	<b>NAME(S)</b>	<b>Nematollah Saidiani Sanandaj / Sepideh Saidiani Sanandaj</b>
<b>ORGANIZATION</b>	Turkish Inventors and Innovators Association	
<b>TITLE OF ENTRY</b>	<b>Calculator software with the ability to calculate 5 million digits with ordinary LAPTOP in short time with advanced genetic algorithm</b>	
<p>This algorithm can perform common mathematical calculations for 5 million digits in a very short time with a genetic algorithm that is designed. Given that mathematical operations are performed by supercomputers with the number of digits, this numbering technique can be computed up to 5 million digits.</p>		

<b>TR-06</b>	<b>NAME(S)</b>	<b>Prof.Dr.Mehrdad Fojlaley / Seyed Sepehr Moosavi Almaleki / Dr Seyed Mohsen Moosavi Almaleki / SM GLOBAL COMPANYY</b>
<b>ORGANIZATION</b>	Turkish Inventors and Innovators Association	
<b>TITLE OF ENTRY</b>	<b>Microwave dryer for vegetable and fruits</b>	
<p>The new technology in this project is the dryer. This machine uses high energy microwaves to change the polarization of the water in the products to be dried and warm the product. Thanks to this heat given to the product, the water vapor coming out from the center of the product is transferred out of the device with a rapid air flow.</p>		

## UKRAINE

<b>TR-01</b>	<b>NAME(S)</b>	<b>Olha Solomakha</b>
<b>ORGANIZATION</b>	Gymnasium 172 "Nivyk"	
<b>TITLE OF ENTRY</b>	<b>"Investigating and Innovating Plastic Processing Methods"</b>	
<p>The work is dedicated to the study of polyethylene processing methods and applications. The classification of polymers, polymerization reactions, and polycondensation are disclosed. Polyethylene terephthalate has been extensively studied, including its physical and chemical properties, applications, and secondary recycling. Through the analysis of polyethylene terephthalate processing methods, the best method for its recycling has been proven. During the research, a new method of polyethylene terephthalate utilization was discovered, and an experiment was conducted to obtain a valuable material for construction purposes - assembly foam.</p>		

## UNITED ARAB EMIRATES

<b>AE-01</b>	<b>NAME(S)</b>	<b>Saeid Ahmadi / Ruhallah Amandi / Mahmood Amandi</b>
	<b>ORGANIZATION</b>	ANDIA
	<b>TITLE OF ENTRY</b>	<b>Smart 4D Sense Verse</b>
<p>A virtual smell can generate different types of scent including flowers, rain, snow, perfume, and lots of others. In this work we introduced a new type of our solution. Using included computer vision and artificial intelligence system users can easily use device in form of plug-and-play and attach it to any type of VR headsets and normal laptops. It can be used in different applications like Metaverse, Cinema in home. This is bridge for new sense just by connect to your device.</p>		

<b>AE-02</b>	<b>NAME(S)</b>	<b>Ruhallah Amandi / Parivash Faham</b>
	<b>ORGANIZATION</b>	ANDIA
	<b>TITLE OF ENTRY</b>	<b>LH heartical</b>
<p>We proposed smart heart signal monitoring using optical analysis and light emission. We used signal reconstruction by a multimodal model in the distance. Our contactless schema can be used for large-scale applications. We reconstruct blood pressure and EKG from emissions and use them to analyze heart information related to people and applicable in different places. The reconstruction process was designed using a mixed method of Markovian analytics and integrated knowledge. In the Data Analyze step, all information is fed into Machine Learning (ML) to find the knowledge as much as possible. Recognition and extraction of arrhythmias, tachycardias, and blood pressure disorders are the main steps for the ML pipeline.</p>		

<b>AE-03</b>	<b>NAME(S)</b>	<b>Romina Shirazi / Rozhina Shirazi / Ruhallah Amandi</b>
	<b>ORGANIZATION</b>	ANDIA
	<b>TITLE OF ENTRY</b>	<b>Smart Drug Box</b>
<p>Smart drug box proposes innovative way to keep drugs in safe place and smart reminder which allow us to categories all drugs based on time it will be used. Using smart applications we can connect it to the nurse station, collaborator and teams. Drug box application detects some major conflicts and prohibit clients from probable side effects. Reminder for expiry using single time scan, adaptive for blind and other specific groups and available in portable version.</p>		

<b>AE-04</b>	<b>NAME(S)</b>	<b>Mahmood Amandi / Ruhallah Amandi / Saeid Ahmadi</b>
	<b>ORGANIZATION</b>	ANDIA
	<b>TITLE OF ENTRY</b>	<b>RampX</b>
<p>In the current era lots of economic elements control the market price for stock, crypto. Due to the growing complexity of these metrics in most cases it can't be controlled by business/users so in most cases the trade win-rate decreases exponentially. RampX is a type of Artificial Intelligence services that includes Market watcher, direct and indirect economical metric monitor, advanced analytics tool. It gets more than 96% success rate in Gold, Bitcoin, Litecoin and Ethereum price prediction. More than 180 economic metric and 100+ topic based fundamental/technical/deep features included in feature set. It also helps large scale business to get better economic decision.</p>		

<b>AE-05</b>	<b>NAME(S)</b>	<b>Ruhallah Amandi</b>
	<b>ORGANIZATION</b>	ANDIA
	<b>TITLE OF ENTRY</b>	<b>AI Actor</b>
<p>AI actor is the platform to generate scenario, actors/actress. The AI system learned to search, index, and analyze different scenes. Shot, scenes, frame level learning included in the system. The current system trained with more than 3000 video archives to provide base level architecture to reuse in next movies with minimum human intervention. To provide a higher level of serendipity we trained a system to generate new scenes based on machine learning models. Character generation and copyright protection scheme included in the system and each actor/actress can join to it with higher speed of production and better earning.</p>		

<b>AE-06</b>	<b>NAME(S)</b>	<b>Siavash Zafar Esmaeili</b>
	<b>ORGANIZATION</b>	SIYAVOS
	<b>TITLE OF ENTRY</b>	<b>The Mind-Controlled Artificial Leg and Knee</b>
<p>The Mind-Controlled Artificial Leg and Knee is a groundbreaking scientific invention that combines advancements in brain-machine interfaces and artificial intelligence. It utilizes the analysis of brain activity patterns associated with leg and knee movements, leveraging deep learning algorithms and neural networks to optimize artificial movement and functionality based on mental commands. This innovative system not only detects and interprets brain signals but also incorporates advanced control mechanisms to respond to environmental stimuli such as pressure and force. The Mind-Controlled Artificial Leg and Knee holds tremendous potential for improving the quality of life and restoring mobility for individuals with lower limb impairments. By enabling a seamless integration of mind and machine, this invention opens new possibilities for enhanced motor control and rehabilitation strategies.</p>		

## UNITED KINGDOM

<b>GB-01</b>	<b>NAME(S)</b>	<b>Mr Salah Eldin Mustafa Ali Hussein / Mr Kheiry Kheiry Ahmed Eltahier</b>
	<b>ORGANIZATION</b>	HIoT UK
	<b>TITLE OF ENTRY</b>	<b>Fault Smart Reporting System - Magic Drainer (MD)</b>
<p>The Fault Smart Reporting System, or Magic Drainer (MD), is an innovative electronic device designed to detect and clear blockages in air conditioning systems. With its vibration motor technology, IoT integration, and remote-control capabilities, the MD prevents water damage, reduces maintenance costs, and improves energy efficiency. Its market potential lies in addressing a common problem, establishing industry partnerships, expanding into smart homes/buildings, and penetrating international markets. The MD represents a significant advancement in HVAC solutions, offering convenience, sustainability, and long-term benefits for users.</p>		

## UNITED STATES OF AMERICA

<b>US-01</b>	<b>NAME(S)</b>	<b>Sophia I. Hartwick</b>
	<b>ORGANIZATION</b>	BEL+CH™
	<b>TITLE OF ENTRY</b>	<b>BEL+CH™</b>
<p>BEL+CH™ is an Infant Gas Relief Belt. It's a safe, effective, easy-to-use, non-ingestible method of Infant Gas Relief. The BEL+CH™ wearable device! And is the first non-ingestible method of infant gas relief. Unlike any of the over-the-counter remedy, which are currently available, BEL+CH™ requires no drugs (simethicone), synthetic substances, or harmful chemicals- such as dyes, and won't cause allergic reactions.</p>		

<b>US-02</b>	<b>NAME(S)</b>	<b>Scot Adrian Schuler</b>
	<b>ORGANIZATION</b>	VIZR
	<b>TITLE OF ENTRY</b>	<b>The Shield</b>
<p>Windshield brush. Allows the driver to clean the outside of the windshield from inside the vehicle. Allows the driver to clean the outside of the windshield from inside the vehicle without getting their hands dirty. Small footprint, can leave unattended, doesn't need batteries, aesthetically appealing, can withstand temperatures of 150 above to 150 below Celsius. Saves time and effort to clean the windshield. Keeps hands clean, simple to use. Perfect for the trucking industry.</p>		

<b>US-03</b>	<b>NAME(S)</b>	<b>Sara Sheikhlary</b>
	<b>ORGANIZATION</b>	The University of Arizona
	<b>TITLE OF ENTRY</b>	<b>Herbostrioidine: An Herbal-Based Radioprotective Drug Against I-131 and Sr90 Radioactive Elements with Dual Actions</b>
<p>This invention is called "Herbostrioidine", an extended-release herbal radio protective drug, formulated using multi-layer noisome nanocarrier containing two groups of pharmaceutical compounds working together simultaneously to provide a strong radioprotective drug against I-131 and Sr90: (1) Compounds for which the radioactive elements have high affinity to bind, form chelate, scavenge them efficiently and get removed from the body through the kidneys, (2) Compounds that recover the adverse effects of the radioactive exposure, through various mechanisms (i.e., blockage I/Na symporter and Ca2+ channel blockages in thyroid glands and bones; boosting body's antioxidant system; temporally reduction of cell cycle speed; and DNA repair inductions.</p>		

<b>US-04</b>	<b>NAME(S)</b>	<b>Dr Ashour Ghelichi / Fred Asli</b>
	<b>ORGANIZATION</b>	HIAT,Inc
	<b>TITLE OF ENTRY</b>	<b>Rapeseed platform using wind wall technology and controlled guidance of the product at harvest time</b>
<p>Canola is a very light and dry crop, which mostly falls to the ground when harvested. So, until today, a harvesting mechanism that can minimize the wastage of this product has not been made. This product is one of the best vegetable and food oils in the world. Therefore, planting, keeping, and harvesting it is of special importance for human societies. But until today, there is no efficient harvesting system, so a lot is wasted during harvesting. So, this invention will cause more cultivation of rapeseed in the world. In this invention, by using the technology of creating a wind wall, we were able to collect a significant amount of the product that was.</p>		

<b>US-05</b>	<b>NAME(S)</b>	<b>Seyed Parsa Alavi</b>
	<b>ORGANIZATION</b>	University of Arizona
	<b>TITLE OF ENTRY</b>	<b>Smart Health Toilet</b>
<p>Smart Health Toilet is an invention installed and replaced with traditional toilets and can conduct medical analysis using urine and stool samples. Using this product, people are regularly tested within the comfort of their home and thus this invention keeps them informed about their general health. Test results are released digitally. People usually get laboratory tests when illness has progressed and signs have come up, but smart health toilet is a prevention health device. This will have a significant impact to avoid disease progression as people will instantaneously visit doctor before the disease dominates them.</p>		

## UZBEKISTAN

<b>UZ-01</b>	<b>NAME(S)</b>	<b>Matyakubova Paraxat Mayliyevna</b>
<b>ORGANIZATION</b>	Tashkent State Technical University	
<b>TITLE OF ENTRY</b>	<b>Capacitive moisture meter for oil, oil products and bulk materials</b>	
The purpose of the invention of a capacitive moisture meter for oil, oil products and moisture in bulk materials is to create a device for determining the moisture content in liquid and solid materials, with high measurement accuracy, to increase the reliability of the device and expand the functionality of the measuring device, reduce its overall size.		

<b>UZ-02</b>	<b>NAME(S)</b>	<b>Matyakubova Paraxat Mayliyevna</b>
<b>ORGANIZATION</b>	Tashkent State Technical University	
<b>TITLE OF ENTRY</b>	<b>Energy saving and energy efficiency: Modern experience in Uzbekistan and foreign countries</b>	
The main feature of the electric power industry - the coincidence in time of the processes of production and consumption of energy - determines the dependence of the mode of energy production on the mode of its consumption. This means that the demand for energy at each moment of time must be covered in strict accordance with the load schedule of a particular consumer. Such schedules are widely used in the practice of production planning, pricing, operational and technological (dispatch) management.		

## VIETNAM

<b>VN-01</b>	<b>NAME(S)</b>	<b>PHAM ANH TUAN</b>
<b>ORGANIZATION</b>	Vietnam Institute of Agricultural Engineering and Post-Harvest Technology	
<b>TITLE OF ENTRY</b>	<b>Vacuum frying equipment system works continuously</b>	
Vacuum frying is the process of frying food with oil in an enclosed environment at high temperature and low pressure. The simultaneous frying process creates 2 dehumidification dynamics (i) Thanks to the frying oil at a high temperature above the boiling point of water; (ii) Thanks to the vacuum pressure in the frying medium, creating a partial pressure difference from the center of the fried material with the partial pressure at the surface of the material and the frying medium. Thanks to that, the mutant dewatering process creates a snack product with unique crunchiness and attractive flavor that is suitable for consumer tastes. The current popular vacuum frying equipment systems using the intermittent batch working principle have many limitations: Loading and unloading products is labor-intensive, frying oil is frequently exposed to the air periodically. Fast-oxidized products can be loaded and released, which can create acrylamide, which is harmful to human health, on the other hand, it is difficult to control and monitor the automatic frying process... The system of continuous vacuum frying equipment has been basically overcome the limitations of the intermittent frying system.		

<b>VN-02</b>	<b>NAME(S)</b>	<b>NGUYEN HOANG MINH / NGUYEN DIEP ANH / TRAN GIA HUY / DO DUC ANH</b>
<b>ORGANIZATION</b>	LAO CAI HIGH SCHOOL FOR GIFTED STUDENTS	
<b>TITLE OF ENTRY</b>	<b>SMART ATM ONLINE</b>	
Online shopping (online purchases) is becoming more and more popular because of its flexibility and convenience. Online stores have no holidays, no closings, or any other problems. For those who are busy and do not have much time to shop, this is considered the advantage of the online shopping service. However, there are still difficulties in the delivery process between the shipper and the buyer. To overcome these difficulties, we embarked on a research project called "SMART ATM ONLINE" to solve those difficulties and make Shipper convenient delivery even when the shopper is not at home.		

<b>VN-03</b>	<b>NAME(S)</b>	<b>NONG THUY LINH / DAM HUYEN TRAN / DO CHI BACH</b>
<b>ORGANIZATION</b>	LAO CAI HIGH SCHOOL FOR GIFTED STUDENTS	
<b>TITLE OF ENTRY</b>	<b>Applying artificial intelligence AI to create traffic light system according to real time and moving priority in Viet Nam</b>	
In Vietnam nowadays, along with the economic development, urbanization is also rapidly increasing, which leads to the rise in number of vehicles circulating in urban areas. Therefore, it is essential to keep traffic in the area stable, especially at road junctions. To make it easier for traveling at road junctions, currently we can rely on the warning of some countdown traffic lights at the three-way or four-way crossroad or assistance of traffic police and other forces. However, types of traffic signals in Viet Nam have just halted at being able to countdown in a certain time and certain quantity, which is not consistent with traffic flow in reality. This leads to traffic jams, makes it hard to travel, particularly medical and fire services in emergency situations. Seeing the problems need solving, we have started researching this.		

<b>VN-04</b>	<b>NAME(S)</b>	<b>DANG CHI BANG / VU VIET NGUYEN / LA NGUYET AN / VU KHANH UYEN</b>
<b>ORGANIZATION</b>	Chu Van An High School / Hanoi-Amsterdam High School for the Gifted / Nguyen Thi Minh Khai High School	
<b>TITLE OF ENTRY</b>	<b>MODEL OF DEVICE WHICH APPLIES ULTRASONIC WAVES TO CONCENTRATE HONEY AND FISH SAUCE AT LOW TEMPERATURE</b>	
<p>This invention is to enhance the quality of honey and fish sauce by concentrating honey and fish sauce at low temperatures. The model of device is compactly and simply built and assembled, easy to operate, suitable for many production models, high water separation capacity, can be heated to increase the moisture separation efficiency. The materials and accessories are easy to buy and can be applied on an industrial scale to increase the value of honey, fish sauce - typical agricultural and aquatic products of Vietnam.</p>		

<b>VN-05</b>	<b>NAME(S)</b>	<b>Le Thao Uyen / Nguyen Le Viet Hoang</b>
<b>ORGANIZATION</b>	Tuyen Quang Gifted High School	
<b>TITLE OF ENTRY</b>	<b>Flame-retardant hydrogel from renewable sources of material - natural compounds</b>	
<p>Research into flame-retardant materials is necessary to tackle fires problem and hydrogel is a material with great potential for development among them. However, its previous generations have certain limitations. In this project, we synthesize a super-absorbent polymer from tapioca starch with other organic compounds and fabricate the flame-retardant hydrogel. Results from internal and external laboratory experiments show that the hydrogel has a high-water absorption capacity (&gt;400 times), and good adhesion which creates a coating on the material's surface to prevent combustion. Hydrogel is made from renewable, cheap and abundant materials, so it is highly economical and practical.</p>		

<b>VN-06</b>	<b>NAME(S)</b>	<b>Ly Han Minh / Vu Hoang Minh / Hoang Anh Tuan / Dang Tran Nhat Minh / Dang Tran Bao Anh</b>
<b>ORGANIZATION</b>	HUS High School for Gifted Students, Hanoi	
<b>TITLE OF ENTRY</b>	<b>Carrier screening for alpha thalassemia reveals a rare variant in Vietnam via Multiplex ligation-dependent probe amplification (MLPA) analysis</b>	
<p><math>\alpha</math>-thalassemia is an inherited blood disorder almost caused by deletion mutations in the <math>\alpha</math>-globin gene cluster. Identification of individuals with mild disease or carriers, prenatal screening, and counseling are key to increasing awareness of the disease, with the potential for reducing transmission. Therefore, the detection of the <math>\alpha</math>-globin gene is an important premarital examination item, especially in areas endemic to thalassemia. MLPA assay is known as an effective, simple, and specific method for the detection and characterization of deletions and duplications, including triplication of alpha-globin gene mutations. For the program, a total of 38 couples with reduced levels of mean corpuscular volume (MCV) lower than 80fl and mean corpuscular hemoglobin (MCH) lower than 28pg were determined of the <math>\alpha</math>-thalassemia carrier status by DNA analysis using MLPA essay.</p>		

<b>VN-07</b>	<b>NAME(S)</b>	<b>Nguyen Tuan Ngoc / Tran Dinh Hien / Tran Thien Lam / Le Khanh Ngoc / Nguyen Thanh An</b>
<b>ORGANIZATION</b>	Phan Huy Chu High School / Thai Thinh Secondary School / Phan Chu Trinh Secondary School / Giang Vo Secondary School.	
<b>TITLE OF ENTRY</b>	<b>The role of rare earth ion Nd<sup>3+</sup> on the properties of BFO multiferroic materials</b>	
<p>In this study, we investigate the role of rare earth ions Nd<sup>3+</sup> on the structural, electrical, and electromagnetic properties of the Bi<sub>1-x</sub>Nd<sub>x</sub>FeO<sub>3</sub> material system (x = 0.0; 0.1; 0.2 and 0.3) that were fabricated by high-energy ball mill method. The results show that all the samples are single phase without any strange phase. As the concentration of Nd<sup>3+</sup> ions increase, the samples are strongly ferromagnetic with the maximum magnetic value at the magnetic field value H = 1 Tesla increasing significantly.</p>		

<b>VN-08</b>	<b>NAME(S)</b>	<b>Tran Van Huong / Nguyen Quynh Mai / Tran Gia Phat / Han Tran Huyen Nhi / Phung An Hieu</b>
<b>ORGANIZATION</b>	Nguyen Du Secondary School / Giang Vo Secondary School / Viet Duc High School / Nguyen Binh Khiem High School	
<b>TITLE OF ENTRY</b>	<b>The influence of ferromagnetic phase on the properties of multiferroic CFO/BTO materials applied in converters</b>	
<p>Composite multiferroic materials are widely used in electromagnetic transducers, piezoelectric sensors, and gas sensors. Basic and applied research on this family of materials has increased significantly in recent years. Current studies aim to improve the ferromagnetic properties of materials by combining two different structural phases and have obtained quite interesting results. Therefore, in this report, we present the multi-ferroic composite materials with composition xCoFe<sub>2</sub>O<sub>4</sub>/(1-x)BaTiO<sub>3</sub> (x = 0 - 0.4) that have been investigated.</p>		

<b>VN-09</b>	<b>NAME(S)</b>	<b>Pham Dang Phuc Duong / Nguyen Ngoc Van Oanh / Le Ngoc Minh Chau / Phung Khoi Nguyen / Le Lam Anh</b>
<b>ORGANIZATION</b>	Nguyen Trai Gifted High School / Nguyen Du High School / Thai Thinh Secondary School / Ngo Si Lien Secondary School / Giang Vo Secondary School	
<b>TITLE OF ENTRY</b>	<b>SYNTHESIS OF ZnO QUANTUM DOT AND APPLICATION IN DETERMINATION QUINOLONE ANTIBIOTIC</b>	
<p>Antibiotics, though essential for health, can pose environmental risks due to their persistence and non-biodegradability. Particularly concerning are quinolone antibiotics. Current methods for detecting these residues can be complex and costly. This research proposes a novel, more effective method for identifying quinolone residues using the fluorescence-enhancing ability of quantum dot ZnO. Initial results show that the presence of ZnO boosts the fluorescence intensity of the solution proportionally to the antibiotic concentration, offering a more sensitive detection limit. Furthermore, quinolone-modified ZnO exhibits blueshifts in the fluorescence spectra, which could improve the analytical method's qualification limit.</p>		

<b>VN-10</b>	<b>NAME(S)</b>	<b>Pham Minh Duc / Nguyen Thanh Minh / Tran Ba Nhat Minh / Phung An Hieu / Nguyen Phuong Linh / Nguyen Minh Son</b>
<b>ORGANIZATION</b>	Luong The Vinh High School / Nguyen Binh Khiem Secondary School / Ngo Si Lien High School / Lake Forest Academy, USA	
<b>TITLE OF ENTRY</b>	<b>Advancing the Design of an Automated Nuchal Translucency Measurement Method and its Implications in Prenatal Screening for Congenital Malformations</b>	
<p>This study showcases the successful integration of artificial intelligence in assessing prenatal birth abnormalities via nuchal translucency (NT) measurement using ultrasound. A deep learning model, trained on a database of over 1000 ultrasound images from the National Hospital of Obstetrics and Gynecology in Viet Nam, was developed. The model demonstrated nearly perfect sensitivity and specificity when compared to expert manual measures. This achievement suggests that AI-enhanced NT measurement could become a useful tool in prenatal screening, potentially replacing manual doctor measures and aiding sonographers in their work.</p>		

<b>VN-11</b>	<b>NAME(S)</b>	<b>Nguyen Dang Minh Quan / Tran Huyen Tram / Dang Ngoc Lam</b>
<b>ORGANIZATION</b>	Ngo Van So Secondary School / Lao Cai High School No.3	
<b>TITLE OF ENTRY</b>	<b>Machine Helps Blind People Read Text in Books and Website</b>	
<p>According to the World Health Organization (WHO), as longevity increases, the issue of declining vision and blindness caused by degenerative diseases is also rising. Currently, there are approximately 314 million people with low vision or blindness worldwide, with an estimated 45 million blind people, 80% of whom are over 50 years old. Additionally, every five minutes a person becomes blind, and every minute a child becomes blind, with 90% of blind people living in developing countries with limited access to healthcare services. Vietnam is one of these countries. According to the Ministry of Health, there are approximately 2 million visually impaired and blind people in Vietnam, and one-third of them are poor and unable to improve their vision." It seems that visually impaired people face many difficulties in learning, communicating, and working because they cannot observe anything around them. The only way for them to read and study is Braille. Therefore, they must learn how to use Braille. However currently, the documents which are presented in Braille, are limited. Thus, my team decided to design a "Machine Helps Blind People Read Text in Books and Website" which can read text in books and website for the Blind, and it can also translate to other languages to help blind people approach many resources around the world.</p>		

<b>VN-12</b>	<b>NAME(S)</b>	<b>Nguyen Thi Quynh Anh / Dinh Ngoc Minh Chau / Dang Hoang Ngan / Nguyen Gia Nhi / Hoang Quoc Trung</b>
<b>ORGANIZATION</b>	Le Quy Don Junior High School	
<b>TITLE OF ENTRY</b>	<b>Translator for the Mute and the Deaf</b>	
<p>The device we invented brings to the disabled people, including the mute and the deaf the best way to communicate and integrate to community perfectly. The equipment can translate sign language to text and voice and translate voice to text and image. It can also translate to other languages. It has three blocks: camera and microphone for input block, Raspberry for CPU and loudspeaker and screen of Raspberry for output block. To invent the device, we used python 3.9 and open-source Teachable. Machine. The device we invented has two functions: translating sign language to text and voice; translating voice to text and image. The sign language will be recorded by a camera, and transferred to CPU which recognizes the sign language and produces corresponding audio and text, then transmits to loudspeaker and screen of Raspberry. The voice will be recorded by microphone and transferred to CPU which the produce text and image and translates to other language and transmits to screen of Raspberry.</p>		



VN-13	NAME(S)	THIEN LUONG NGUYEN / DIEU ANH LE / SONG THU LE / LYN NGUYEN / DAI NAM ANH HOANG
ORGANIZATION	Hanoi-Amsterdam High school for the Gifted, Hanoi, Vietnam / Waterloo Collegiate Institute, Waterloo, ON, CANADA	
TITLE OF ENTRY	<b>Graphene Oxide-Based Material: A Green Adsorbent for Sustainable Development and Renewable Energy</b>	
Removal of antibiotic unasyn (UNS) from solution using novel hybridized graphene oxide (NHGO) modified with polymer. UNS is a combination of two antibiotics: ampicillin and sulbactam. Ampicillin is an antibiotic that kills bacteria by preventing them from making their own protective covering, and sulbactam, a beta-lactamase inhibitor, takes in blocking enzymes that contribute to antibiotic resistance. Original graphene oxide was modified with aqua amonia (NH <sub>4</sub> OH) at various concentration to enhance the amine surface functional groups.		

VN-14	NAME(S)	Tue Nam
ORGANIZATION	Reigate grammar school of Vietnam	
TITLE OF ENTRY	<b>Creating spore-probiotic solution with preservative-free nasal spray to help kids with cleft lips</b>	
This invention applies the preservative-free spray technology with the available spore-probiotic product, Livespo Navax to have a more reliable alternative to antibiotics and enhances its features. LiveSpo Navax is a spore-probiotic spray for assisting in the treatment of respiratory infections. Currently, the product couldn't apply as preventing respiratory infections because the spray clogs if stopped using for 3 days, due to mold building. For it to be able to be used to prevent respiratory infections, it must be redesigned. I propose the idea of using preservative-free nasal spray technology to elongate usage of the product from 3 days originally to 30 days or more and allow it to be used to prevent respiratory infections, especially in children with cleft lips.		

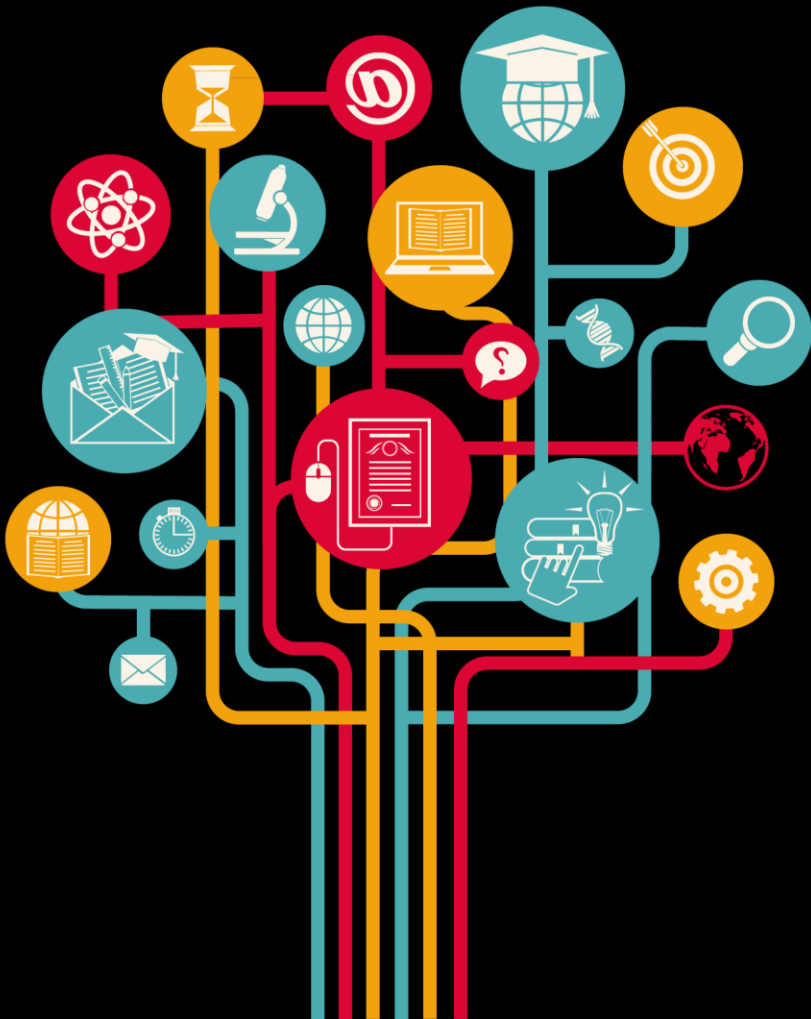
VN-15	NAME(S)	Trần Đan Khánh / Vũ Tuệ Nhi / Nguyễn Quốc Anh / Lê Hương Giang / Phạm Minh Hà / Nguyễn Ngọc Bảo Hân
ORGANIZATION	Hanoi University of Science & Technology (HUST)	
TITLE OF ENTRY	<b>Attracting FDI to Vietnam amidst the impact of the COVID-19 pandemic</b>	
The research objectives: (1) Systematize the theoretical framework regarding FDI and the factors influencing the FDI shift to a country. Specifically, clarify the impact of the Covid-19 pandemic on FDI attraction in various countries, and emphasize the necessity of enhancing FDI attraction in Vietnam post-Covid-19. (2) Analyze and comprehensively evaluate the current situation of FDI attraction in Vietnam in recent years, highlighting the achieved results as well as existing challenges. (3) Propose recommendations and solutions to leverage advantages in order to strengthen FDI attraction to Vietnam and effectively manage FDI capital.		

VN-16	NAME(S)	Cao Diệu Anh / Đặng Khánh An / Lê Ngọc Bảo Trí / Lê Gia Bảo Châu / Nguyễn Mai Bảo Châu
ORGANIZATION	Hanoi University of Science & Technology (HUST)	
TITLE OF ENTRY	<b>The process of metabolism in the human body</b>	
Research objectives: (1) To gain a comprehensive understanding of the metabolic processes that occur in the human body, (2) To explore the factors influencing metabolism, such as genetics, diet, physical activity, and hormonal regulation, and (3) To examine the impact of metabolism on overall health, including energy balance, weight management, and disease prevention. The research aims to: (1) Provide a detailed overview of the different metabolic pathways and their connections, (2) Investigate the role of enzymes, hormones, and other molecules involved in metabolism, and (3) Analyze the impact of nutrition, exercise, and lifestyle choices on metabolic rate and efficiency.		



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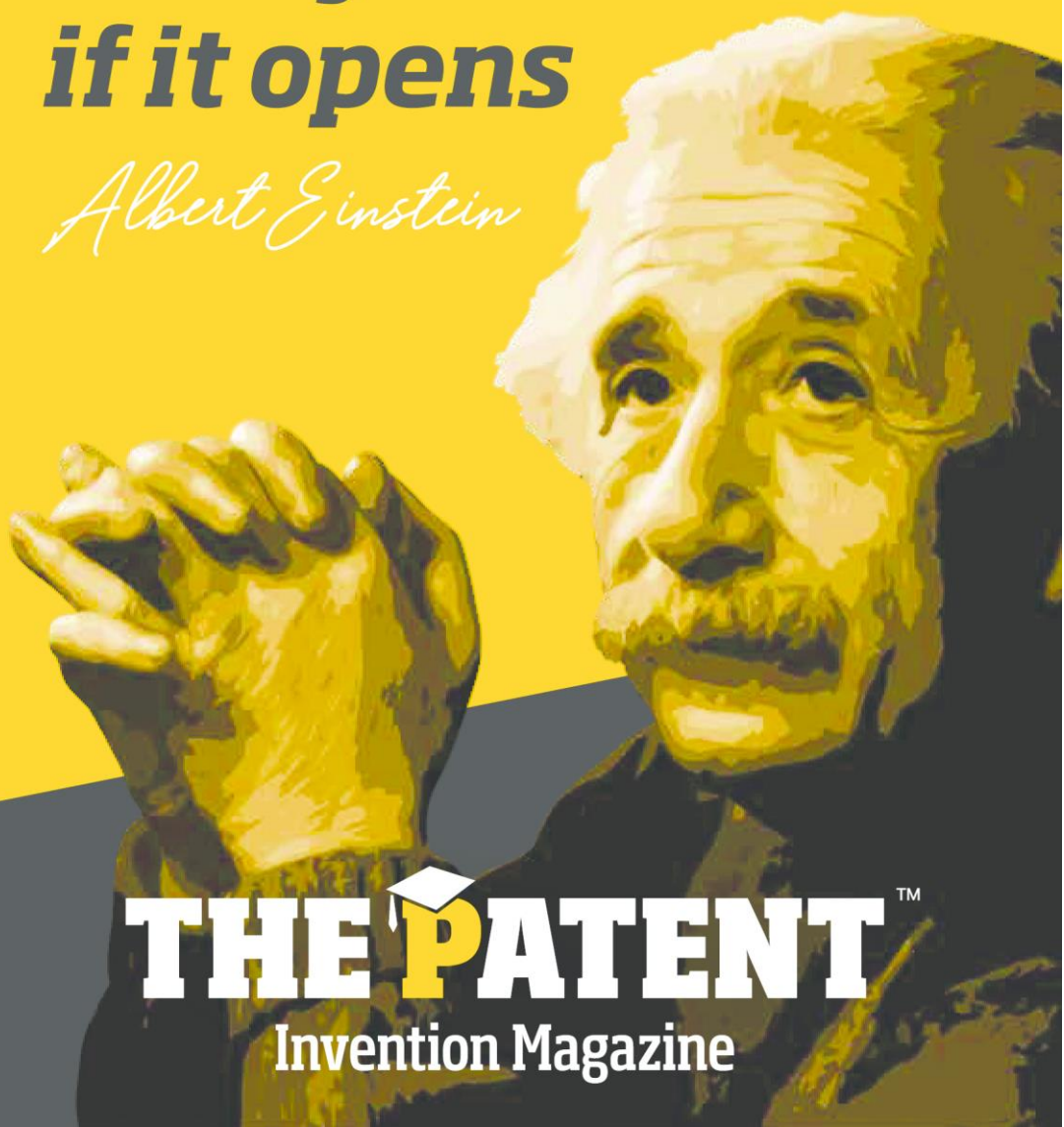
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a parachute:  
it only works  
if it opens***

*Albert Einstein*



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As a studio marketing executive of Disney and then DreamWorks, over the years I have had the pleasure of working with HOW Creative of highly creative, innovative professionals of a variety of projects.

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Holly Beverly, Vice President Marketing

Howard and his team showed us how to articulate our company brand vision, philosophy, values, position and brand promise into a solid core brand essence, including our brand identity, website, trade show display, printed collateral and other critical touchpoints. The result was ATI won #41 on the "Inc. 500" list of fastest growing privately held companies the following year.

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Thanks, Howard.



Nancy Ridge, Vice President

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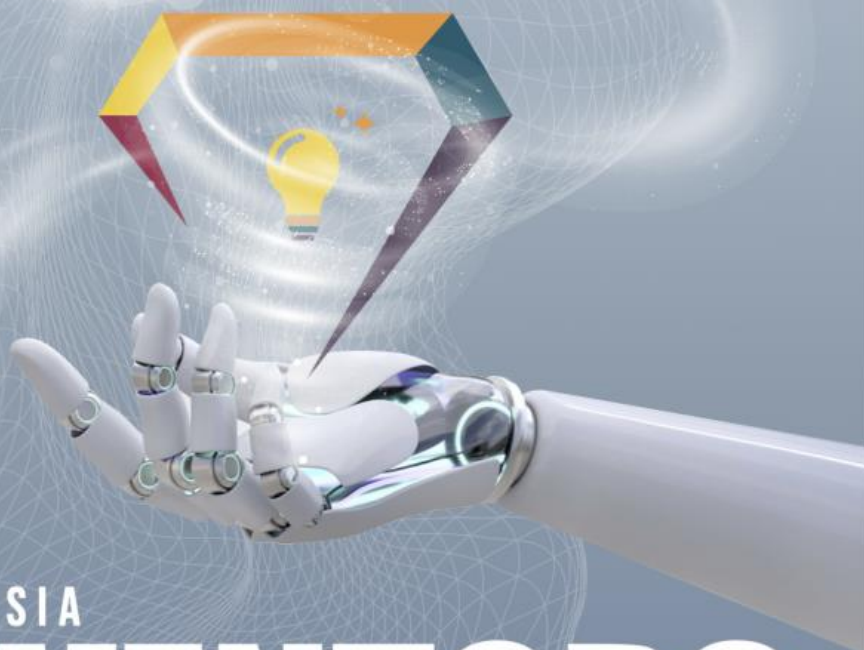
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In 2010, it was founded by Mr. Hsieh Hsin-Ming. At the moment, 50 member countries and partners have joined the "WIIPA Family" with the goal of promoting invention, innovation and intellectual property rights around the globe.

#### Founder

Since 1993, Mr. Hsieh Hsin-Ming has formed "TIPPA" Successfully, opened up a way for Taiwan's products to be in line with international standards and also laid the foundation for the establishment of WIIPA.

#### History

In 2000, Mr. Hsieh Hsin-Ming felt that the main axis of TIPPA is limited to Taiwan. With a vision to gain access in the international stage, he dedicated his time and effort to gather transnational forces to put his vision at work.

Fueled with a vibrant ideology, he continued to open doors of opportunities for young and talented inventors to a global level and thrived on gaining international attention for the establishment of WIIPA as a multinational organization.

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WIIPA upholds the spirit of globalization and extends its vision across the globe. With technology, using network interface allows a fluid communication pattern for a more innovative exchange of ideas and information among stakeholders.

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