International Invention Innovation Competition in Canada

iCAN-TORONTO, CANADA

THE 2019 4TH EDITION CATALOGUE

WELCOME MESSAGES · EVENT INFO · LIST OF EXHIBITS

The 4th International Invention Innovation Competition in Canada, iCAN 2019

PROUDLY ORGANIZED BY

TISIAS

TORONTO INTERNATIONAL SOCIETY OF INNOVATION & ADVANCED SKILLS

"All creative people want to do the unexpected."

- Hedy Lamarr

"Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something."

- Steve Jobs

"Invention is the most important product of man's creative brain. The ultimate purpose is the complete mastery of mind over the material world, the harnessing of human nature to human needs."

- Nikola Tesla

"Before you reject an idea, find at least five good things about it. To have a great idea, have a lot of them. When you have exhausted all possibilities, remember that you haven't..."

- Thomas A. Edison

"Be strong in body, clean in mind, lofty in ideals."

- James Naismith

"Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world."

- Louis Pasteur

"It is possible to fly without motors, but not without knowledge and skill."

- The Wright Brothers

WELCOME

THE 4TH INTERNATIONAL INVENTION INNOVATION COMPETITION IN CANADA, iCAN 2019

"FOREWORD – THE ORGANIZER, TISIAS"

Time has wings as we have already arrived to another fruitful destination of iCAN 2019, celebrating its 4th annual edition and I can't express how grateful I am to be able to host you on this special occasion. Entering our 4th year, our goal was clear and simple; continue to push forward, give monumental efforts by all means necessary in order to enhance this global platform that we have established for worldwide inventors. Since the first iCAN edition in 2016, we experienced a myriad of new ideas and innovative concepts from vastly creative inventors, researchers and students from different culture and background. We see so much potential from them that it was our mission to figure out how we can provide better service and the best platform for them.

From the organizer's perspective, the most important outcome of the show is firstly how truly satisfied our attendees are and most of all, how they can use this opportunity derived through iCAN to further expand their landscape of activities, businesses and academics here in Canada. As much as we are passionate about your enthusiastic participation and support, we will push ourselves to exhaustion every summer to create a better show for all of you. We want everyone to take advantage of iCAN as a stepping stone to get one step, two steps closer to your biggest goals. I hope you enjoy the show.

Truly Yours,

Moonsuk Chang
Chairman & Chief Exhibition Officer
Toronto International Society of Innovation & Advanced Skills (TISIAS)
The Organizing Chairman of iCAN – Toronto, Canada

TISIAS
TORONTO INTERNATIONAL SOCIETY OF INNOVATION & ADVANCED SKILLS

International Invention Innovation Competition in Canada
ICAN - TORONTO, CANADA

"WELCOME BY BOB HUYBRECHTS"

Sixteen years ago, after I had sold the rights to my intellectual property, I received a contract and a well-deserved upfront payment that resolved all my financial worries at the time! I believe that all the inventors and contenders, who come together in Toronto to participate in iCAN, carry the seeds of a similar dream, a dream that will bring them financial success, or even create their life's legacy.

Global distances have shrunk and allow innovation to spread along continents, which will speed up the quality of life for everyone. I encourage you to keep pursuing new ideas, as innovation is the only factor that boosts the economy, not the stock market or real estate! Moreover, there is an overwhelming personal fulfillment involved: in the words of Nikola Tesla, who is often recognized as history's greatest inventor, he stated, *"There is no greater thrill for an inventor, than to see a mere idea become reality!"*

Thanks to Moons Chang's efforts, the annual iCAN initiative has become larger, better organized and more successful each year and I welcome all participants to this wonderful event.

Congratulations and it will be my pleasure to see you all on Saturday, August 24!

innovation initiative
A non-profit forum supporting innovative business

InventorsCircle.org

Bob Huybrechts
Inventor, Founder and President of Innovation Initiative Co-operative Inc. (2003)
Co-Chairman of the iCAN Jury Committee

“COMPLIMENTS TO iCAN 2019 IN THE GREAT CITY OF TORONTO”

I’d like to commend and thank Moonsuk Chang, along with his team, for yet again, producing another exceptional event. Thank you for giving us an amazing platform that allows both inventors and business owners to share ideas, learn, innovate, and collaborate.

As an innovator and a visionary, it is your ideas that advance, shape, and improve the world we live in. Though, it is not an easy task and load to bear, we do rely on your creative process, to propel us, as an ever-growing society, forward. It is through your continuous efforts and persistence in the faces of challenges, setbacks, and defeats that allows us all to learn, innovate, and grow.

On behalf of iCAN, I’d like to leave you with a final thought in the words of Orville and Wilbur Wright, *“If we worked on the assumption that what is accepted as true really is true, then there would be little hope for advance.”*

To each and every one participating, congratulations. You are one of the few courageous souls that seek and strive for greatness. “Inventors, welcome to iCAN!”

Sincerely,

Howard Lim
President of HOW Creative – USA
Co-Chairman of the iCAN Jury Committee

HOW CREATIVE
We Design Businesses

“MESSAGE FROM IFIA PRESIDENT”

In today’s technologically competitive world, invention and innovation are the key factors to ensure economic and industrial advancement in each country. The organization of international invention exhibitions where innovative technologies and products are showcased and visited by the businessmen, manufacturers and stakeholders will contribute to the application of such technologies in the industry and development of economy.

International Federation of Inventors' Associations (IFIA) whose aim has been to promote the culture of invention and innovation since 1968 highly supports the creation of an international platform where the world inventors get together, exchange innovative knowledge and display the fruits of their mind. This year’s iCAN 2019 is going to be organized with meticulous and strategic planning in order to offer the participants a good opportunity to discover the important and valuable Canadian market and bridge the gap between the inventors of various countries on one hand and the investors, businessmen and entrepreneurs on the other hand.

International Invention Innovation Competition in Canada, iCAN organized by Toronto International Society of Innovation & Advanced Skills (TISIAS) is a unique opportunity to create a network between the government and inventors, assist inventors to commercialize their inventions and give international recognition to the inventors. I hope all participants will enjoy this great event.

Sincerely Yours,

Alireza Rastegar
IFIA President

IFIA
INTERNATIONAL FEDERATION OF INVENTORS' ASSOCIATIONS

"MESSAGE FROM WIIPA PRESIDENT"

On behalf of World Invention Intellectual Property Associations (WIIPA), I would like to advance my appreciation to Toronto International Society of Innovation and Advanced Skills (TISIAS) for the great deal of effort they have devoted to organizing a big event such as the International Invention Innovation Competition in Canada (ICAN) which continue to thrive in the culture of innovation for five consecutive years. TISIAS is truly one of the biggest in the North American fair to be held in Toronto. Their dedication to bring inventors and entrepreneurs together while facilitating innovation in marketing, licensing and manufacturing of products is truly remarkable.

WIIPA supports this event as well as WIIPA's honorable member TISIAS, and urges all of the inventors as well as invention association, entrepreneurs, industry representative and manufactures to take the best advantage of this milestone in the trade show and play a significant role in the success that such event will bring about.

Manli Hsieh
President
World Invention Intellectual Property Associations

"WELCOME BY MIKE McFARTHING"

Welcome aboard all inventors from around the world!

Having had the pleasure and honour of being involved as 'Master of Ceremony' since the first Inaugural iCAN Awards, I have seen its growth in interest and community over the last 4 years.

I would like to thank Mr. Moonsuk Chang for his continued vision and leadership. I would also like to encourage all attendees, regardless of age, background, culture or nationality to build new friendships and collaborative opportunities that will enrich themselves and the entire growing 'Global Invention Community'!

Mike McFarthing
Director of Education, Innovation Initiative Co-operative Inc.

"ACKNOWLEDGEMENT FROM OFEED – MOROCCO"

On behalf of the Moroccan delegation at iCAN, I would like to express thanks to the prominent iCAN organizing team for another excellent event led by the Honorable Chairman and inventors' Great Friend Moonsuk Chang.

In tribute to his unique team behind TISIAS, resulting from a perfect blend of courage and perseverance leading to success for this colossal global project and honorable mission. Congratulations to all the participants for taking up the challenge, for their silent and intelligent work, for all the fantastic anecdotes worthy of adventure novels. Congratulations to all the winners for their magnificent achievements.

This honorable event will remain forever engraved in our history and I deeply believe in its perpetual and obvious success.

Majid EL BOUAZZAOUI
President of OFEED Morocco

"ACKNOWLEDGEMENT FROM MIIA – MACAO"

On behalf of Macao Innovation & Invention Association (MIIA), I would like to express my appreciation to Toronto International Society of Innovation & Advanced Skills (TISIAS) for the great deal of efforts, they have devoted to organize the 4th International Invention Innovation Competition in Canada, iCAN 2019. To persevere this well-established culture of innovation for 4 consecutive years.

iCAN is truly one of the biggest North American fairs to be held in Canada, a region of large and civilized Canada dedicated to bring inventors and entrepreneurs together and facilitate marketing, licensing and manufacturing of the products.

MIIA supports this event as well as urges all of the inventors, invention associations, entrepreneurs, industry representatives and manufacturers to take the best advantage of this professional and experienced trade show and play a role in the change that such events will bring about.

Yours Sincerely,

Mr. Danny Lai Pak Keong
President of Macao Innovation & Invention Association (MIIA)

澳門創新發明協會
Macao Innovation & Invention Association

"THE DELEGATION OF VIETNAM"

On behalf of Institute for the Promotion of Invention & Innovation, Vietnam (SANVIC), I would like to express my sincere thanks to Toronto International Society of Innovation and Advanced Skills (TISIAS) for the great efforts to organize the International Invention Innovation Competition in Canada (ICAN), which has been really one extraordinary event held in Toronto by both USA and Canada to promote invention and innovation activities of nearly 50 countries in the world for 4 consecutive years.

TISIAS has been extended more and more and has really become one of the biggest invention and innovation exhibitions in North America which brings inventors and startups a good chance in presenting new technical solutions, in progress of marketing their inventions, in licensing of patents and in cooperating to manufacture products. With the support of WIIPA, SANVIC and other partners all over the world participate in iCAN every year and TISIAS plays a significant role for the success of WIIPA.

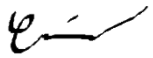
Dr. Phan Quoc Nguyen
Co-founder, President of Science Committee of SANVIC
Representative of WIIPA in Vietnam

SANVIC

"YOUNG INVENTORS OF INDONESIA REPRESENTED BY INNOPA"

On behalf of Institute for the Promotion of Invention and Innovation, Vietnam (SANVIC), I would like to express my sincere thanks to Toronto International Society of Innovation and Advanced Skills (TISIAS) for the great efforts to organize the International Invention Innovation Competition in Canada (ICAN), which has been really one extraordinary event held in Toronto by both USA and Canada to promote invention & innovation activities of nearly 50 countries in the world for 4 consecutive years.

To all participants, welcome to iCAN 2019 and congratulations on behalf of the Indonesian delegation on your winning! Remember that this is just the beginning of your journey because the world needs you more with your innovation. I wish you have a great result in the iCAN finals.



Erricha Insan Pratisi
President
Indonesian Invention & Innovation Promotion Association (INNOPA)

INNOPA
Indonesian Invention and Innovation Promotion Association

"THE ROMANIAN DELEGATION EXPANDS ACTIVITY IN iCAN 2019"

ROMANIAN INVENTORS FORUM

OFFICIAL DELEGATE FOR ROMANIA

Crossing the ocean to exhibit top inventions from Romania in Canada!

Inventions presented by:

"Gheorghe Asachi" Technical University of Iasi

Politehnica University of Bucharest

Romanian Association of Alternative Technologies Sibiu

"Lucian Blaga" University of Sibiu

"Dunarea de Jos" University of Galati

ROMANIAN INVENTORS FORUM (FIR) is a professional association with the purpose to support, stimulate, develop and valorize the scientifically, technically and artistically creativity of individuals or institutions from Romania and abroad.

Member of IFIA & WIIPA. Organiser of EUROINVENT. Coorganiser of CADET-INOVA, ICE-USV
Funding body for: International Journal of Conservation Science & European Journal of materials Science And Engineering.

EUROINVENT - 21-23 MAY 2020

12th Edition of
European Exhibition of Creativity and Innovation

President of FIR:
Assoc.Prof.PhD.Eng. Andrei Victor SANDU

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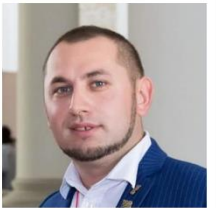

"SMART CARE TECH (SCT) CELEBRATES iCAN NO.4"

On behalf of the Sudanese delegation at iCAN since 2017, I would like to congratulate Mr. Moonsuk Chang and the entire iCAN Committee and Team for an excellent event once again held in Toronto for world inventors. Smart Care Tech (SCT) is to support iCAN every year and represent Africa.

Abdalbasit Ibrahim Adam Abdalla
President of SMART CARE TECH (SCT) – SUDAN

"MESSAGE FROM THE POLISH ASSOCIATION OF INVENTORS"

On behalf of Association of Polish Inventors and Rationalizers (SPWiR), I'd like to extend my sincere congratulations to the organizing committee of the International Invention Innovation Competition in Canada (iCAN) for contributing to the promotion of creativity for 4 consecutive years.

Association of Polish Inventors and Rationalizers highly appreciates and supports the attempts made by the Toronto International Society of Invention and Advanced Skills (TISIAS), to bring the inventors from all around the world together providing them a golden opportunity to get acquainted with the polish innovations and exchange innovative knowledge.

Inventors require to be internationally recognized and their main purpose of participation in the international exhibitions is to commercialize their fruits of mind. I am pleased to announce that iCAN has a successful record of marketing, licensing and commercializing the inventions during its past annuals and I am certain that inventors will enjoy numerous opportunities during the event.

I wish all of you an enjoyable time both in iCAN and Toronto.

Michał Szota
President / Association of Polish Inventors and Rationalizers (SPWiR)

"MESSAGE FROM THE THAI ASSOCIATION OF INVENTORS"

I would like to congratulate the organizing team for holding the 4th International Invention Innovation Competition in Canada, iCAN 2019! Congratulations to TISIAS for accomplishing all aspects to hold this marvelous event and wish you numerous congratulations on your next iCAN too.

Congratulations for all winners at iCAN this year. You have finally won the competition! Congratulations and this most likely calls for celebrations.

This mission is accomplished! Keep up the spirit and enjoy!

All the Best to All Participants

Dr. Unchalee SANGUANPONG, Assoc. Prof.
President / Association of Thai Innovation and Invention Promotion (ATIP)

"MESSAGE FROM SINGAPORE DELEGATION"

Congratulations Toronto International Society of Innovation & Advanced Skills (TISIAS) on the successful organization of the 4th iCAN in Toronto. It was an honour to have been part of your show this year and our teams are grateful for the opportunity and platform to showcase their work in Canada.

Citzen Innovation is delighted to have you host our innovator's works at your annual event, and we believe that our ties can only grow with time. As always we look forward to our continued cooperation in the future.

Yours Sincerely,

Tan Wei Kok
President / Citizen Innovation – SINGAPORE

GENERAL INFORMATION

TITLE OF EVENT
The 4th International Invention Innovation Competition in Canada, iCAN 2019

DATES
iCAN 2019 “The Preliminaries” January 15 – July 15 (Online Registrations)
iCAN 2019 “The Finals” August 24 (Exhibition, Seminar and Awards Ceremony)

VENUE
North York Memorial Community Hall (5110 Yonge Street, North York)

ORGANIZED BY
Toronto International Society of Innovation & Advanced Skills (TISIAS)

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
Accent on Skills Consulting
AHA2RICH – Canada
Afghanistan Inventors Association (AIA)
American Society of Sciences and Arts Convergence (ASSAC)
Arabian Invention and Innovation Company (AIIC) | Egypt
Association of British inventors and Innovators
Association of Polish Inventors and Rationalizers (SPWiR)
Association of Thai Innovation and Invention Promotion (ATIP)
Canada”IN”
Citizen Innovation | Singapore
Education University of Hong Kong
EUROBUSINESS-Haller | Poland
First Institute of Canadian Inventors (FICI)
First Institute of Researchers and Inventors in Iran (FIRI) | Iran
HOW Creative | USA
imMaker Education | Hong Kong
Indonesian Invention and Innovation Promotion Association (INNOPA)
International AI Convergence Creative Olympic (AIJAM)
International Innovation Club “Archimedes” Salon | Russia
International Invention & Design Leader Awards (IIDLA)
INVENTARIUM SCIENCE – SRD Security, Research & Development | Portugal
Inventors College Organization | Canada
Iraqi Invention and Innovation Society (IIIS-IRAQ)
Junior Achievement Moldova
Korea Invention Academy (KiA)
Korea Invention News (KINEWS)
Korea University Invention Association (KUIA)
Lodz University of Technology
Lisbon Council for Peace, Tolerance, Innovation & Science
Lucian Blaga University of Sibiu
Macao Innovation and Invention Association (MIIA)
National Association of Inventors of Macedonia (NAIM)
OFEED – Morocco
Romanian Association for Alternative Technologies Sibiu - A.R.T.A. Sibiu
Romanian Inventors Forum (FIR)
SANVIC Institute for Promotion of Invention and Innovation
Shun Tak Fraternal Association – Yung Yao College
Smart Care Tech (SCT) – Sudan
Sri Lanka Inventors Commission (SLIC)
Taiwan Invention Intellectual Property Association (TIIPA)
Union of Arabian Academics (TUOAA)
University Politehnica of Bucharest
Vietnam National University
Vision in Green | Canada
YELIM Initiative | Nigeria

ABOUT THE EVENT

INTERNATIONAL INVENTION INNOVATION COMPETITION IN CANADA, iCAN

iCAN has now become the premier event of Canada for worldwide inventors and innovators where its program features the international exhibition of inventions, speaker's seminar, and award ceremony for the invention competition of creative ideas and innovative projects by students, individuals, and companies. As a whole, iCAN provides an all-around program full of new opportunities for both local and overseas participants to exhibit and showcase their finest ideas from diverse industries through creative invention, innovation, scientific research, new products and technologies at an international level staged in Canada. The competition goal is to reach out to the global community of innovators in every way possible and provide a platform of new opportunities extended here in Toronto, Canada.

"THE FINALS" PROGRAM

August 24th 9:30 – 6:30 @ North York Memorial Community Hall

Time	Activity Details
09:30 – 10:30	Participants Arrival & Check-in
09:30 – 11:00	Exhibits Set Up
11:00 – 12:00	Opening Remarks & Jury Introduction
12:00 – 12:30	Short Break & Jury Meeting
12:30 – 16:00	Exhibition & The Finals Jury Evaluation
16:00 – 17:00	Featured Speaker's Seminar
17:00 – 18:30	iCAN 2019 Award Ceremony
18:30 – 19:00	Group Photo & Tear Down

* The schedule may be subject to slight changes *

INTERNATIONAL JURY

Joint Committee of Jury from 10 Countries around the World

Bob Huybrechts The Inventors' Circle / Co-Chairman of the Jury	**Howard A. Lim** HOW Creative / Co-Chairman of the Jury
Mike McFarthing The Inventors' Circle / Vice-Chairman of the Jury	**Amedeo Pozzebon** The Inventors' Circle / Vice-Chairman of the Jury
Michał Szota Association of Polish Inventors and Rationalizers	**Adam Rylski** Lodz University of Technology
Masoud Shafaghi International Federation of Inventors' Associations (IFIA)	**Babak Khodaparast** The First Institute of Canadian Inventors (FICI)
Raymond Lawson McCrory The Inventors' Circle	**Otto Schmidt** Accent on Skills Consulting
Victoria Ramzy Habib Attia Invention Education Specialist	**Wagdy Rizk Ghali Rizk** Invention Education Specialist
Hok Ming Kwan The Education University of Hong Kong	**Phan Quoc Nguyen** Vietnam National University
Mihail Aurel Titu Lucian Blaga University of Sibiu	**Augustin Semenescu** University Politehnica of Bucharest
Dave Boyle The Inventors' Circle	**Ihsan Edan Abdulkareem Alsaimary** University of Basrah
Fernando Maldonado Lopes Inventarium-SRD	**Nidham Jamalludien** University of Basrah
Murat Durkaya Yahya Kemal College	**Yilmaz Deliktas** Yahya Kemal College

AWARDS

iCAN 2019 "The Finals" Award Ceremony Features the Following Awards

● Grand Prize ● Semi-Grand Prize ● IFIA Best Invention Award ●
● Best Young Inventor Award ● Best Female Inventor Award ● Best Product Design Award ●
● Best Invention Awards ● Special Inventor Awards ● International Delegations' Special Prizes ●
● Gold, Silver, Bronze Medals ●

** Some prizes may be exempted from the function due to absence and missing participants / jury's decision **

iCAN 2019

LIST OF EXHIBITS

50 Countries in Participation for iCAN 2019 "The 4th Edition"

** Some information in the abstract may have been edited/modified for catalogue formatting purposes **
** iCAN 2019 Catalogue PDF file is also available online at www.tisias.org **

AFGHANISTAN

AF-01	NAME(S)	Ezatullah Qaderi
ORGANIZATION		Juzjan University
ENTRY TITLE		**Security system, checkpoints, water energy vehicle**

Security system could be used for provide security of offices, houses and other compounds. This system will alarm if anyone enter the compounds. It also connects with a smart phone and automatic make a call for police station. Vehicles stop checkpoints this system will stop those cars and vehicles that are flew from checkpoints. Water energy vehicle this innovation will changed water to hydrogen and oxygen and liquid will use generate fuel for car.

AUSTRIA

AT-01	NAME(S)	**Mehdi Farzpourmachiani / Yaghoob Badrikoohi / Ali Farzpourmachiani / Simin Naghibi Masouleh / Mahmoodreza Gorji / Majid Latarani / Mohammadjavad Badrikoohi / Nina Ghalandari / Parisa Shahini / Jamshid Pourmirzahosain / Mohammad Hashemi Hashin / Ibrahim Ghulam Murad Ali / Elma Tabari / Mahmoud Daneshfar / Salar Basiri / Abdulla Ibrahim Ghulam Murad Ali**
ENTRY TITLE		**A Method to Produce Drinkable Water in Emergency Situations**

(1) This method could be used to produce drinkable water in emergency situation and disaster like flood and earth quake. In this situations. (2) By using this invention, it could be possible to produce drinkable water in suitable PH range in less than 5 minutes. (3) This is an environmental friendly invention.

CAMBODIA

KH-01	NAME(S)	**Prof. Chan Sok Khieng / Mr. Luy Mithona / Mr. Chhoeung Rachana / Mr. Rom Channrith / Ms. Sovanmonynuth Heng**
ORGANIZATION		Norton University
ENTRY TITLE		**NU Eco-Smart Fan (Mr.360)**

To discover how modern technologies change the way of living and figure out the benefits of modern technologies to people in our society to determine the impact of using them on their life performance.

CANADA

CA-01	NAME(S)	**JUNG-SOO KO**
ORGANIZATION		York University
ENTRY TITLE		**METHOD AND SYSTEM FOR TRADING VIRTUAL CARD FOR RENTAL AND LEASE CONTRACT**

A virtual card trading (or circulating) market system and a trading method thereof is associated with a virtual card purchase reservation receiving and transmitting module and a personal credit information providing agreement receiving and transmitting module and circulates an automatically created virtual card in association with sales information of a seller and lease information of a lessor by trading the virtual card in a lease market as a means for information effect based on the Internet, in an information asymmetry situation of a sales object and a leasehold object of the seller.

CA-02	NAME(S)	**SUNGYEON KIM**
ORGANIZATION		University of Waterloo
ENTRY TITLE		**SMART RACQUET**

Athletes are constantly looking for ways to improve their performance. The scope of our project is to improve the way players swing their racquet in sports like tennis. The goal is to create a racquet that analyzes the swing and presents it in a useful, such as a graph or chart. The proposed system will implement vibration sensors that detect the location of impact of the ball on the racquet head.

CA-03	NAME(S)	**Avia Annemarie Lee / Anthony Alphanso Lee**
ORGANIZATION		The FlipNDrip Server™
ENTRY TITLE		**The FlipNDrip Server™ : Combined Salad Bowl Drainer**

The FlipNDrip Server™ is a 2-tiered bowl serving system consisting of a solid bowl and a strainer. The design is light weight, fun, and easy to use. Great for home, cottage, camping use and more. The FlipNDrip Server™ makes rinsing, straining and drip-drying of foods, sink optional. Never reach for another bowl when making salads or pasta dishes. The FlipNDrip Server™, with its easy locking mechanism, allows bowls to lock in place and rotate 360 degrees. Simply flip, drip, and serve food in the FlipNDrip Server™. This creative, next generation product helps home cooks as well as food service professionals reduce both food waste and time to prepare fruits, salads, vegetables and pastas with ease and convenience.

CA-04	NAME(S)	Dr. Afshin Rahimi / Mr. Farshid Bazmi
ORGANIZATION		University of Windsor
ENTRY TITLE		New Method for Improving Speed and Accuracy of Power Assurance in Helicopter Turboshaft Engine

Most turboshaft engines, employed to drive helicopter rotors, usually operate at a fixed speed, within a narrow revolution per minute (RPM) range. One of the main reasons for such a design is the fact that the performance of free power turbine (FPT) deteriorates in off-design conditions. In order to minimize the power needed for the rotation of blades, the speed of the main rotor must be adjusted based on the commanded speed required by the pilot, in addition to the weight and altitude of the helicopter. In other words, every flight condition is characterized by a specific optimal rotor speed. However, it seems impossible to match the optimal main rotor speed with the optimal engine speed while using a fixed-ratio transmission. The benefit related to optimal main rotor operation may be eventually cancelled by substantial deviations from FPT designed speed, leading to higher turbine efficiency losses and higher fuel consumption. Research on varied-rotor-speed rotor engines represents a promising field for further investigation on improving the performance and fuel consumption of turboshaft engines. A possible suggestion to overcome this problem can be a proper redesign to achieve less sensitivity to RPM variations in the compressor and turbine. This solution focuses on the new design methodology to obtain upgraded efficiency in the turbine at off-design and to avoid a stall in the compressor rotors. In this model, main rotor conditions and turboshaft engine models are combined to set an optimized overall helicopter performance. The running line of the engine is broken down to several operation areas and according to the helicopter's flight maneuver, the optimal point in each range is chosen. More advanced technology, higher precision, power assurance, higher efficiency, lower engine fuel consumption, reduced weight and complexity of the gearbox design, and a longer flight range are the benefits of this method.

CA-05	NAME(S)	Majid Latarani / Mahmoodreza Gorji / Mehrnaz Gorji / Moones Latarani / Mehrsa Gorji / Marjan Latarani / Azita Nobakht
ENTRY TITLE		Multi Stage Air Conditioning System

This system utilizes various proven technology to increase performance and efficiency of air conditioning units in warm, hot and dry weathers and places. Design and implementation of system is based on combined cycles and stages, so energy consumption is decreased despite performance and efficiency increase. Due to proposed modular design not only efficiency and performance have increased, but also water consumption has been decreased. Finally, due to utilizing minimum moving parts in design and fabrication of the system failure ratio and repair costs are decreased meaningfully.

CA-06	NAME(S)	Doug Bisson
ORGANIZATION		Integrity P.P.E.
ENTRY TITLE		The T-Helmet

Hard-Hats provide Life-saving protection when worn properly, and the act of Not Wearing them, has been the only answer to-date on the Topic. Exempting Laws that draw upon years of learning and evolution. We are bringing a product to market that will have thousands of people wanting to wear this Symbolic piece of equipment. The Helmets interior is covered in Prayers. Acknowledging the Faith and Cultures of Turban-wearing people around the planet.

CHINA

CN-01	NAME(S)	Hoi Yan Zoe Cheung / Ka Man Yung / Lixia Yi / Jiaxu Chen
ORGANIZATION		School of Traditional Chinese Medicine, Jinan University
ENTRY TITLE		M.O.P.C Upper Limb Rehabilitation Training Instrument

“M.O.P.C Upper Limb Rehabilitation Training Instrument”, “M” means Modern Technology; “O” for Orthopedics & Traumatology; “P” refers to Physiatrics; “C” defined of Chinese Medicine. Our point to departure is using modern technology, and combined Orthopedics & Traumatology, Physiatrics and Taditional Chinese medicine, to build up a new rehabilitation equipment can training patient’s upper limb muscles to avoid muscle atrophy; And starting point from patients' sense of autonomy, comprehensive consideration can be made in terms of training angle, intensity, and even feeling; And reducing patient’s fear of rehabilitation physiotherapy, enhancing their self-confidence, and enhancing the modern rehabilitation instrument with humanized design.

CN-02	NAME(S)	Ka Man Yung / Hoi Yan Zoe Cheung / Ian I Leong / Shujie Tang
ORGANIZATION		School of Traditional Chinese Medicine, Jinan University
ENTRY TITLE		A New Orthopaedic Rehabilitation Walker In Preventing Osteoporotic Injury

This invention will mainly focus on the difficulty of walking in elderly patients with osteoporosis, and with the concept of "prevention of fracture", design a modern exoskeleton technology as the core, with certain stability and good concealment. It also includes wearable, anti-injury, and protective features. Not only can be used to shield the impact of external forces on the patient's bones effectively, but also reduce the series of fall and trauma caused by osteoporosis and the secondary damage by the patient.

CN-03	NAME(S)	Zhuotong Liang / Xufu Liu / Anqi Jin / Jiangyan Quan / Hoi Yan Zoe Cheug
ORGANIZATION		School of Traditional Chinese Medicine, Jinan University
ENTRY TITLE		**A modern simulation acupuncture teaching model**

Acupuncture teaching model is an important acupuncture teaching aid. The current acupuncture teaching models are far from the real human body, and it is only for students to observe and memorize but cannot perform acupuncture practice training. With the acupuncture teaching activities being carried out globally, the modernization and promotion of acupuncture teaching models are of great significance. This project plans to use modern simulation materials combined with electronic wireless transmission technology to develop a more simulated, practical, modern acupuncture teaching model, facing the Acupuncture learners and establishment of Chinese medicine acupuncture courses at home & abroad.

CN-04	NAME(S)	Lu Zitian / Zhang Poling / Yang Zibing / Wei Weizhiyao / Li Xuan Le / Gee Marie Binag
ORGANIZATION		Guiyang No. 1 High School-Sino-Canadian Program
ENTRY TITLE		**Sea Lavender (Limonium sinuatum) plant extract as Acid-Base Indicator and determinants of their pKa value**

Commonly used indicators for acid-base titrations are synthetic, and this work was focused to identify the eco-friendly natural indicators and to determine their pKa values. The analytical potential of the flower extracts is very promising as seen in its application in acid-base titrimetry. This sea lavender as an acid-base indicator is totally new, no other researched conducted. This flower extract was found to perform well in titrating strong acid-strong base than in weak acid-strong base. The researcher have obtained a sharp and clear colour change from red to brownish yellow for acids and for base is light pink to purple.

CN-05	NAME(S)	Shuchun Gao
ORGANIZATION		Dalian University of Technology
ENTRY TITLE		**Preparation and application of mini-molecular hyaluronic acid**

A method of preparing low molecular weight hyaluronic acid, that can make the molecular weight of hyaluronic acid between 20 and 100kDa.

CN-06	NAME(S)	Wang jingning
ORGANIZATION		Guorun biotechnology (shenzhen) co. LTD
ENTRY TITLE		**HPV protection products**

Targeting technology into the body, from cellular level against HPV virus attacks targeting inactivated through targeted destruction by the membrane of HPV infection cell, outside the cell membrane surface form bubbles, the cytoplasm, inhibit the respiration potent anti-inflammatory to reduce proinflammatory cytokines TNF alpha, beta, IL - 1 IL - 8 and the generation of PGE2 rebuild barrier to inhibit tyrosinase single phenol enzyme and enzyme activity, hydroquinone antiseptic antiphlogistic, reduce the vaginal dysbacteriosis enhanced HPV infection pathogenic force, adjust the body immunity, refactoring vaginal microenvironment of dynamic balance.

CN-07	NAME(S)	YANG HAOXUAN / YIN QI / LIANG HAORAN / LIU YAN / WANG ZIWEN / LV JING
ORGANIZATION		Sino-Canada Academy, Chengdu Foreign Languages School
ENTRY TITLE		**Organic Vegetation Fertilizer**

This fertilizer is made from the waste of various forms of vegetables, fruit and food. It can make use of leftovers thoroughly. We realized that the leftovers like vegetable leaves and fruit peels actually still contain a large amount of nutrition which is absorbable for plants. We chose peels from apples, pears, kiwi fruits, oranges, eggs, cucumbers and cabbages. We put them into a juicer and then shredded them. To test the efficiency of our fertilizers. We chose two evenly growing Peperomia Tetraphylla, one with our fertilizer while the other was left as the control group. After that, we put them under the same sunlight conditions and watered them evenly. 1 month later, the plant with fertilizer grew much faster than its counterpart.

CN-08	NAME(S)	YANG HAOXUAN / YIN QI / LIANG HAORAN / LIU YAN / WANG ZIWEN / DU BEIXI
ORGANIZATION		Sino-Canada Academy, Chengdu Foreign Languages School
ENTRY TITLE		**Water Mist Projected Traffic Lights**

The Projected Traffic Lights on Water Mist Screen uses water mist as the screen with light projection instead of LEDs. Similar to normal traffic lights, the colours red and yellow are used to signal the cars when crossing time is up. Differently, cars receiving the signal to go when the projection is off and the water mist screen disappears. To reduce the velocity of cars approaching the crossroads, speed bumps are used in accordance with this traffic light. We considered elaborately and we concern about the recycling of water resources. The water sprayed to create the water mist screen will be directed to the green belt along the road.

CN-09	NAME(S)	Wai-kit Ming / Haihao HUANG / Shinning YU / Guoqing Yan / Dewei Huang
ORGANIZATION		Jinan University, Guangzhou, China
ENTRY TITLE		**Kare**

Kare is an app that aims to screen the growth and developmental problems of infants, toddlers, and children and to provide instant and accurate health services to their parents based on artificial intelligence (AI). Our app offers services including real-time monitoring, sleep assistance, and nutrition tracking. The core function of the app is the AI, which can investigate whether those children have growth problems or are slower than the average (do not meet the clinical development milestones based on the pediatric clinical guidelines). The app can analyze the data that the parents and devices input, and the AI system gives advice. It provides a cutting-edge, innovative approach to personalized guidance during childcare.

CROATIA

HR-01	NAME(S)	Stipan Orčić
ENTRY TITLE		**Antigravitacy impulsor with carriers under the armpits**

Antigravitacy impulsor with carriers under the armpits is an alternative to medical aids for movement. Impulsor emits antigravitation impulses in stabilizers and probes, which are integrated into the porters, which the user places under the armpits. The stabilizer pulses help the user to get up or lower at of the selected position. The front and rear impulses of probes help the user to move in the desired direction.

CYPRUS

CY-01	NAME(S)	Dr. Catherine Demetriades
ENTRY TITLE		**Autizmo**

A robot prototype that is able to dissect and understand conglomerations of masses in biophysical computational thought processes that build up and are unreadable by humans. It can dissect straight forward behaviours as well as confusing complex ones. The subatomic particles which carry out genetic commands used to be undetectable with microscopic technology and hadn't reached the stage where it can find, much less decipher, the automatic emotional blueprints programmed into the DNA-RNA. Autizmo is the breakthrough in Quantum Robotics and solves problems consistently and will do as much as its master commands.

EGYPT

EG-01	NAME(S)	Seifeldin Mohamed Abdelmoneim Mohamed / Dina Ahmed Abouelmagd Abdelaal / Mohamed Ibrahim Mohamed Ibrahim
ORGANIZATION		Suez STEM School for Petrochemicals
ENTRY TITLE		**Algae Energy**

The world faces many problems. The most dangerous among these are environmental pollution and energy shortage. Our research is trying to find a new design to solve these problems together. Firstly, Cultivation of microalgae can be a great source for clean energy and algae can suck (co2) during growth, so it's environmental cleaner. Secondly, using our project, we can easily extract biodiesel, natural fertilizer and biogas from microalgae. Our device (Exgester) can also purify the biogas by separating acidic gases such as CO2 and H2S and by separating acidic gases, the methane gas became more efficient and its calorific value increased more than 90%.

EG-02	NAME(S)	ABDALLA YASSER ELSAYED MOHAMED ABDELWAHAB / GALAL MOHAMMED IBRAHIM GHEIT / ADEL MOHAMED IBRAHIM GHIT
ORGANIZATION		EGYPTIAN INVENTOR SYNDICATE
ENTRY TITLE		**Solar box**

Solar box is used for protecting the solar cell from the dust or snow or any other environmental factor which may affect the cell. The box contain a periodic program for cleaning the cell at the break. The box is closing over the cell at the night or at an unsuitable time (bad weather, cloudy sky, etc.

EG-03	NAME(S)	ABDALLA YASSER ELSAYED MOHAMED ABDELWAHAB / GAMAL MOHAMED GAMAL ELMAHALAWY / Adel Elsaid Elmohamady Sanouh
ORGANIZATION		EGYPTIAN INVENTOR SYNDICATE
ENTRY TITLE		**New way for using solar energy by laser.**

The main concept of this way depends on some energy transformations for collecting the solar radiations. The first one is to convert the solar radiation into a stimulated emission and pass it through the intersteller to the target point. The second transformation is to exploit the radiation at the target by converting it into other types of energy mostly it will be the electrical energy.

EG-04	NAME(S)	Rahma Salah El-din Omar Hamoda
ORGANIZATION		El-Shohada Secondary School for Girls
ENTRY TITLE		**Developing highly accurate simple device for animal tranquilizing for the safety of the biologists in the premature places**

The Animal Tranquilizer Watch is a device that takes the shape of a wrist watch and is used to temporarily put to sleep predators by launching needles that contain psychedelic dedicated designed specifically for animals through the use of a simple hand mechanical movement. This device will help scientists and researchers protect themselves and also to catch the predators for research. The Animal Tranquilizer Watch has a lot of added advantages such as a watch, torch, and compass. The main advantage is that it reduces trauma caused to the animals and provide a safe alternative for scientists to use compared with other weapons.

EG-05	NAME(S)	Abdullah Gamal Moustafa Elafifi
ORGANIZATION		Youssef Jadallah Official Language School
ENTRY TITLE		**The relation between rheumatoid arthritis and Tumor necrosis factor (TNF) Is treatment**

Scientific research on a new method in the treatment of rheumatoid arthritis with chemicals with minor side effects. In a short time, when modifying the tumor necrosis factor (TNF) in the cell causing the disease (based on scientific research that says the disease comes from this matter) , Experiments were performed to determine the success of the hypothesis

EG-06	NAME(S)	Ahmed Badr Shaker / Nada Hamdy Mohamed
ORGANIZATION		Stem Gharbiya
ENTRY TITLE		**Technology in New Vision "Robex Robot"**

Robot Robex is a robot programmed with artificial intelligence to reproduce itself and program its children to be equally intelligent. Robex's goal is to get rid of cancer forever and by self-propagating within the human body to be an army of its sons to fight this malignant disease and eradicate it, we are talking about millions of smart robots in small sizes friendly to the aid system, all mission is to eliminate cancer forever.

EG-07	NAME(S)	Ahmed Fawzy Hassan Shahat Hussein / Toka Mohamed Kamel Mohamed
ORGANIZATION		Nile University
ENTRY TITLE		**Anti-Toxic Robot**

The project prevents accidents caused by leakages of toxic gases resulting from petroleum and petrochemicals companies which cause threat to people's lives and the environment, so we thought of how to get rid of toxic gases and treat them chemically to convert the toxic gas to eco-friendly and unharmful gases by exchanging the human resource with a robot. We made a gas sensor circuit to identify which place leak the toxic gas and the concentration. When the concentration of the toxic gas increases, the gas sensor circuit produces a warning signals to the workers and the control room, at the same moment, to call the robot to come in to the leakage area.

EG-08	NAME(S)	Dr. Zaky Abd Ellatif Zaky Abd Ellatif
ORGANIZATION		Suez Canal Authority
ENTRY TITLE		**An automatic device for the transfer of the patient from the trolley to the bed after the major operations**

It is a powerful electric motor that can withstand the weight of a human body up to 300 kg and is installed on the automatic gearbox which is very small, strong and connected to a horizontal metal column installed on the bases in the bed and this column is connected to a safety belt connected to a leather mattress under the patient after the exit of the operations. These belts are installed in places dedicated to that leather mattress, which is under the patient. Then the motor is automatically operated, so the metal column will pulled these belts, thus the patient is withdrawn easily and safely by only one person, as well as, these equipments (electric motor and the horizontal column) are not fixed in any bed, but can be moved from one bed to another depending on the need to transfer the patient, only the small bases are fixed on the bed.

EG-09	NAME(S)	Weam fawzy Mohamed ahmed abouokeil / Maha ibrahim el sayed hassan
ORGANIZATION		Egyptian Inventors Syndicate
ENTRY TITLE		**An Earthquake resistant building using a hemisphere base**

Nothing is valuable than human life being when disasters happened, earthquake one of the most horrible disasters, so we think and try to create new construction method to help people and as we are architects we try also to save buildings because we believe that the building of now will be our heritage tomorrow. The invention idea is about a building resist the earthquake using its swinging hemispheric base equilibrium by using the weights located down of it during the earthquake building shaking, that equilibrium occurs with the help of rubber base isolators which are fixed at the outer perimeter of the hemispheric base causing the building swing damping .

EG-10	NAME(S)	ADEL SABER AHMED SHEHATA
ORGANIZATION		ARABIAN INVENTION
ENTRY TITLE		**Anti-sliding for car On Snow**

Is a 2-column installed at the end of each gear column installed each of them in one of the sides of the rear tire axis of the car and connected to the brake oil department and when the brakes are pressed strongly and before the car begins to crawl The gears are lowered to stop the car in the ground with the force of friction with asphalt and prevents Sliding cars on snow or ice fully and effectively.

EG-11	NAME(S)	Assem Mohmed khattab / Amir Ahmed Helmy
ORGANIZATION		Gharbia Stem School
ENTRY TITLE		**The smoulder: the thickset smoke of brick's factory**

Egypt is one of the African countries that have a large amount of wasted energy. So, we try to solve one of these problems, and the problem how to solve the energy in the title of "use the alternative energy". So, our project helps to use the smoke which is wasted energy by drying the bricks and generate electricity by the rotation of the fans that distribute the heat of smoke on the bricks and we also generate electricity by the heat of smoke. Thus, we can say Egypt "use the alternative energy" using our project.

EG-12	NAME(S)	Eslam hamada lotfy Mohamed mansour abdeen
ORGANIZATION		Elshahed Mohammed and elfatah
ENTRY TITLE		**ESELA**

ESELA is a means of transportation that can walk on the ground and on the rails and at sea. After manufacturing and using the device, we will solve the following problems: 1) high prices of oil and electricity and lost, especially as it is not renewable energy, 2) increase the proportion of accidents and theft, 3) high prices of transportation, especially electrical, 4) Difficulty of long-distance mobility, 5) The inability of Zoe special results on mobility and also the ability to work, 6) Environmental pollution, 7) Length of charging period, 8) The costs for the construction of electric stations.

EG-13	NAME(S)	Mohamed Ramadan Elyamany
ORGANIZATION		Information Technology School – Egypt
ENTRY TITLE		**Use Technology to Reduce Drowning (U.T.R.D)**

It is a device that worn by a swimmer when he goes to the water and when the sinking sends a distress signal accompanied by the location and health status to the label accompanied by the savior the sensor is connected to the sensor. When the sensor signals are synchronized with the signals stored in the Micro Control, it sends a signal to the application accompanied by Savior by Sim Module, adding that it is running Motor responsible for opening the airbag and water surface to ensure survival in all cases.

EG-14	NAME(S)	Gamal Ahmed Abo mslam Nada
ORGANIZATION		The Inventors Syndicate in Cairo
ENTRY TITLE		**Sweeping to remove mines**

Minesweeper can get the job done safely where cleanse the earth at a rate of 2 kilometres square meters per day per machine and the minimum speed if quickly went normal step for man.

EG-15	NAME(S)	Gamal Ahmed Abo mslam Nada
ORGANIZATION		The Inventors Syndicate in Cairo
ENTRY TITLE		**Couric self-Super automatic hydraulic to lift the car**

Coric is a self-propelled car for lift and all kinds of cars. Used during replacing the damaged tire of the vehicle. And raised during maintenance or stumbled in a clay or sandy area. Mounted in the bottom of the chassis. It has one hydraulic and one telescopic head. One korek for each side of the car. It works via a keyboard either by pressing or touch or by remote control of the car's leader by all means of security/safety.

EG-16	NAME(S)	Gamal Ahmed Abo mslam Nada
ORGANIZATION		The Inventors Syndicate in Cairo
ENTRY TITLE		**Coric is fixed in the car automatically to lift car**

Coric to raise the car and replace the frame in the absence of the adoption or damage of two frames. Coric is close to each frame and has the ability to lift the car from any hand during maintenance or while stitching the car in mud or sand. Coric replaces the damaged tire by a wheel at its tip that has the possibility of moving the car until it reaches the nearest maintenance center or changing the damaged tire. Coric operates with a hydraulic circuit that does not work unless the engine circuit is closed.

EG-17	NAME(S)	Gamal Ahmed Abo mslam Nada
ORGANIZATION		The Inventors Syndicate in Cairo
ENTRY TITLE		**Scaffolding to carry the concrete roof**

Scaffolding works hydraulic or manual rising and falling as the height of the bishop has arms that can accommodate the size of the roof. Leave the ceiling smooth and with bold and glowing shapes. Suitable for hard work of the dome and bridges and buildings as well as the stability of the soil when it is made to work sewage pipes.

EG-18	NAME(S)	Michael Amgad Youssef Ghaly / Yassa Fikry Riyad Bekhit
ORGANIZATION		Science and Technology Exploration Center, Sohag
ENTRY TITLE		**AI Mind Reader – analyze**

It's a device that uses artificial intelligence algorithms and machine learning to classify and analyze respiratory waves in try to read the brain activity. The device establishes a theory that imposes breathing as a part of conscious mind activity and that it is closely related to the thinking area. It helps Fight Infectious Diseases and Disability, and may also be used in criminal investigations (alpha version).

EG-19	NAME(S)	Talal Ibrahim Mohamed / Abdel Hamid Ahmed / Mohamed Essam / Mohamed Alaa
ORGANIZATION		Science, Technology, Engineering and Math (STEM) October High school for boys
ENTRY TITLE		**AUTO-PLANT-MICROBE INTERACTION FOR GENERATION OF GREEN ENERGY**

Nowadays, the world has a lot of grand challenges that face and threat it like: pollution, urban congestion, the shortage of energy, etc. This happen due to some factors. For example, the production of energy all over the world has decreased significantly in the last years and the consumption has increased spontaneously. Egypt's exportation of energy has decreased, Egypt's exportation of energy has decreased; therefore, it has to solve this problem because the world has to strive to meet its own needs. It makes us insist on solving this problem.

EG-20	NAME(S)	Omar Ahmed Abd El-Shafi Ahmed Mohamed / Abd El-Rahman Galal Abd El-Rahman
ORGANIZATION		Suez Advanced Technical Industrial School
ENTRY TITLE		**Dumb Person Speaks !!**

We help people with disabilities, especially who can't speak. We work on treatment brain waves and sign language into voice. The first axis is receiving the brain waves which generated by thinking by device like headset which equipped with electrodes to measure the change in difference voltage between neurons and after that the signal transfer to the circuit of amplifying and filtering and finally to processing circuit which understands the signals. The second axis is a smart glove translates sign language movements into an electrical signal that we can control. Finally the device will speak the word in speakers.

EG-21	NAME(S)	Phelopater Ramsis Fahmy
ORGANIZATION		STEM 6th October high school for boys
ENTRY TITLE		**Water is elixir of our life**

Nowadays, the world faces numerical grand challenges that affect its aspirations to be a developed like; water shortage, recycling and increase the agriculture and industrial bases. These challenges influence the economic, environment, industry and social life. The increase in water usage with a standard source will affect the quality of nutrition in the upcoming years that affects the public health for people. This prototype was constructed to achieve some chosen design requirements that was tested to make evidence "results". The chosen solution is filtration using new membrane and irrigation using aeroponics smart system with nutrients sensor.

EG-22	NAME(S)	Mohamed Ayman Hafez Ahmed
ORGANIZATION		Saint Fatima Abbassia language School
ENTRY TITLE		**How to improve your visual system using software application?**

This project solving the vision impaired problem (Myopia, hyperopia, astigmatism) by using a software program that can be displayed on pc and mobile. This software program is developed based on the methodology on William bates and Leo anger in order to relax eye muscles and regain the vision. The aim of that project to know if we can improve our Vision system using a software application and its application. I have tested the project on 50 people and I find out that their vision impaired reduced except for 1 patient.

EG-23	NAME(S)	Suhaila elmetwalli elmetwalli
ORGANIZATION		Alexandria STEM School
ENTRY TITLE		**Bones lightweight structural system**

Where concrete or steel can collapse under a weight of ton, a bone can resist collapsing under much more weight. It's due to the shape of the bone which resists collapsing under intense tension and compression. The idea is to design a bone-shaped concrete to be hollow and curved as a bio-mimicry for bone resistance. By using this shape, we can use only 70% of the currently used amount of concrete to lift the same weight efficiently, with less lb. of carbon annual emission. And due to its light weight, it's resistant to earthquakes of strength of 6 Richter.

EG-24	NAME(S)	Fatma Ayman Hassan Zahran / Ghadeer Ahmed Rekaby / Mohamed Ebrahim Ahmed / Heba Ahmed El_Sawy / Aliaa Omar Ali
ORGANIZATION		STEM School.
ENTRY TITLE		**Plant your light**

The global energy crisis is one of the threatening challenges to the Earth, the proposed project to solve is energy generation from living plants, depending on the soil's eubacteria which feed on the excess glucose produced by plants as a by-product, the feeding process results in electron production within the soil, so an electron harvesting system was conducted to generate electricity for domestic and industrial uses. Numerous modifications were added to increase the efficiency, such as adding special effective compounds to the soil (artificial glucose and biofertilizers) and replacing the rod-like bacteria in the soil by sphericuccus bacteria that possess larger stomach diameter to produce more electrons to harvest, altogether the modifications increased the produced voltage by 124% which converted the idea from a theory to an applicable science.

EG-25	NAME(S)	Hassan Tarek Hassan / Mohammed Hesham / Makarious Tharwat / Osama Ahmed
ORGANIZATION		The Red Sea STEM School
ENTRY TITLE		**Rescue Signal**

World health organization reported that nearly 1.3million people die in road crashes yearly.In Egypt,traffic accidents create an enormous economic toll as the price tag for the crashes stood at EGP 30.5 billion.Delayed emergency station response plays significant role in car accident fatalities. We thought of a way to quicken emergency station response and arrival by calling them automatically and instantly with radio waves. To ensure the driver and car safety, we added the second part, which is made of two devices designed to stop fuel and sparks from reaction. These two parts are activated by means of accelerometer sensors. However,the prototype was constructed using IoT.

EG-26	NAME(S)	Amira Ali Ali Mustafa ELGendy
ORGANIZATION		Faculty of Pharmacy, Mansourah University
ENTRY TITLE		**Wastewater Power**

The system has an ability to purify any type of water and turn it into a mineral water. In addition, it contributes solving energy problem as it provides an electric energy, biodiesel, glycerol, oxygen and nitrogen gases as well. Also It can produce natural gas, but I put it in my future plan. The processes are abstracted following: First process is screening device its pores about 7 cm to remove large suspensed materials like plastic bags, rugs and so on and I used arduino to enable the device work automatically.

EG-27	NAME(S)	Herz Mohamed Taher Eldahrany
ORGANIZATION		KafrSaad Secondary School
ENTRY TITLE		**Study on anti-diabetic effect of local (Agaricus spp.) mushrooms on alloxan-induced diabetic rats**

Diabetes is one of the most prevalent diseases in the world. In this study, a local mushroom (*Agaricussp*) was studied as a safer and natural alternative treatment. It showed an anti-diabetic effect on the experimental ratslowering blood sugar level. This mushroom contains many chemical elements which stimulate the pancreas to produce insulin, as chromium, zinc and selenium. It also contains many important acids, vitamins, enzymes and sugars as beta-glucan, which have an effective role in regulating blood sugar levels. Also, the shape and number of insulin-producing beta cells, liver and kidney cells were improved in the mushroom-treated rats.

EG-28	NAME(S)	Haneen Abdullah Gharieb Mohamed
ORGANIZATION		Maadi STEM school for girls.
ENTRY TITLE		**SAN (Sonnenblumen aus Nanopartikeln)**

About 24% of energy consumed globally. So, the aims of the project are about saving energy and getting it from sunflowers, saving and purifying water and soil. In order to that, I've worked on sunflowers (as they're hyperaccumulator plants). I've used Nanosilver and Nanopesticides (they're antibacterial to purify the water, they increase food production, and eliminate the insects and diseases).

EG-29	NAME(S)	Muhannad khaled zaki rabee / Abdelrahman kamal ismail
ORGANIZATION		Menofia stem school
ENTRY TITLE		**Blind eye stick**

At first, I and my group desire to find solution or innovation that help the blinds to move freely and go to all their destination without needing for any help. So, we made our research and we find that we can make an invention that it is very light and easy to use and also can help them move freely without crushing. We did the best to get this project and make tests on it to make it better. We use sensor and design for stick and app that work as GPS that help them to reach their local and national destination. We made the app that it is easy for blind to use it.

EG-30	NAME(S)	Mariam Hesham Abdelkareem Abdellatief / Salma Mahmoud Mohamed Abdullah
ORGANIZATION		Maadi STEM school for girls
ENTRY TITLE		**Moth solar cell**

The eyes of a moth are covered with a natural antireflective nanostructured film which reduces reflection by creating an effective refractive index gradient between the air and the medium. The structure of moth eye is applied on the glass of solar cells to decrease light reflection and increase solar cell's efficiency and power production. The Nano cones are applied by a new way of etching and is of low cost.

EG-31	NAME(S)	Sohaila Mohamed Abdelraheen
ORGANIZATION		Alexandria STEM school
ENTRY TITLE		**Enzymatic therapy against retroviruses: a new hope for a full cure**

Hepatitis has been one of the most dangerous infectious diseases on the planet, searching for a solution was necessary. But although medications are available. Intense Side effects and long medication time caused a big problem. But using a new technique (based on lipoprotein lipase that reduces the infectivity rate, monolaurin that breaks down the viral capsid, and ionomycin that induces apoptosis in the infected cells) was proved to kill a viral infection in only 3 days instead of the normal duration of the present medication (28 weeks). It was proved to be safe for pregnant, kids and elderly as well.

EG-32	NAME(S)	Fatma Mohamed Bahaa El din Mohamed Afifi
ORGANIZATION		Maadi STEM school for girls
ENTRY TITLE		**The wealth of garbage**

The wastes of a house will increase as the people living in it increases, so more landfills areas will be used. And they may dispose the wastes by combusting or throwing it in the water, which will cause more pollution and may cause lung and vital diseases and allergies. This project works on solving energy, water amounts and consumption, and waste disposal with the generation of crude oil and commercial salts, to be exported and save foreign currency. The project contains mainly three stages (desalination, pyrolysis and filtration) using the input of sewage or seawater and daily wastes including plastic.

EG-33	NAME(S)	Rana hussien said hussien / Habiba Mohamed ahmed ail / Rana reda Mohamed taha
ORGANIZATION		Sharkya stem school
ENTRY TITLE		**Fuel from waste**

As we know the price of fuel is increasing every day and The plastic has a high ratio of waste so our project will utilization this ratio of waste to generate fuel. We made a small device from stainless steel as a shape of container. We burned the plastic to generate fuel. We put the waste of plastic in the container, and a lid and locked it rigidly, then but a fire under the container. In the container we made a pipe to condense the vapor and the fuel that produced and get it out of the container. We concluded that 1kg of plastic waste produce 1 liter of fuel.

EG-34	NAME(S)	Sawsan Kassem / Vassmen Ali
ORGANIZATION		The Red Sea STEM School
ENTRY TITLE		**CWS**

Egypt faces many challenges and we are working hard to find solutions to these challenges. The main challenges facing Egypt is the pollution of water (discharge sewage, industrial and agricultural waste into rivers and lakes) Therefore, we exploit pollutant water and convert it to clean water sources suitable for agriculture through the wetland system that has been built. This system is purified by entering the water for the first time on a layer of gravel to remove oil and grease, then passing it through the roots of the plant where the bacteria accumulate on the root of the plant and remove the organic and heavy metals then pass through the soil to remove some chemicals. After that, the water becomes free of contaminants and is suitable for agricultural use.

EG-35	NAME(S)	Mohamed khatab Ali khatab
ENTRY TITLE		**Fumigation Device**

The agency addresses a widespread problem in Arab, African and Gulf countries and concerns companies, Which is engaged in the production and sale of air conditioners for those countries. The problem is that more than got 90% of the buildings in these countries do not have outlets for water out of a unit. The internal air conditioning is produced by the cooling process, causing several problems for the customers, of which they have to collect water and dispose of it several times during operation of the air conditioner, and this causes them. Permanent nuisance cannot find a final solution, as well as leakage of water on the outside walls of the buildings. Distorting them and forcing them to be repaired. A small plastic, sheet or aluminum device that collects water inside it And then dispose of it automatically by pressing it and pushing it out of the device after turning it into water rugs. It is mixed with air without causing any problems, and it is supplied with electricity with a 12 volt motor.

EG-36	NAME(S)	Aya Mehrez / Nada Hazem / Remon Mishil
ORGANIZATION		Maadi STEM School
ENTRY TITLE		**Disabled helper**

All the people want to live a normal life and reach their goals. Disabled people feel a lot of racism and disappointments during their lives. They just dream to be normal and their common solution to reach that is wheelchairs but a lot can't find their suitable chair and others don't have money to pay for it as it is quite expensive. About 600 million people in the world experience disabilities of various types. 80% of the world's disabled people live in low-income countries. So our wheelchair solves this with the sensors and the untraditional methods with special electronic circuits.

EG-37	NAME(S)	Amr Ahmed ABOBAKR Mahmoud
ORGANIZATION		Egyptian Inventors Syndicate
ENTRY TITLE		**Automatically lock the oil brake in Damaged wheel**

When damage occurs in one of the joints connecting the brake oil to the wheels. This causes the brake oil to leak completely and this causes the driver to be unable to stop the vehicle. Innovation is a device connected to sensors that measures the movement of the oil flow in each wheel of the vehicle. In the event of a leak in one of the wheels, the oil flow to this wheel and the corresponding wheel is closed by a clutch so we keep the brake oil to flow to the wheels and stop the car with a warning to the driver of the damage In order to fix it as soon as possible.

EG-38	NAME(S)	Mahmoud Mahmoud Mohamed Saad El-Seidy
ORGANIZATION		Integrated study in computer science
ENTRY TITLE		**Computer software and multimedia shop manager**

Working with the team - Respond to customers and meet their demands - Presentation of the company's services and products - Working to provide the best level of service to the client.

EG-39	NAME(S)	Youseef Ayman Ragab
ORGANIZATION		Ain Shams Top Students High School
ENTRY TITLE		**Recycling Space Junk (RSJ)**

Space junk are objects that produce from the disintegration the parts of the satellites. Australia's economy depends on satellites so its economy is in danger. NASA's scientists were forced to move the ISS three times because of space junk. My way of space junk collection depends on the space shuttle that was designed after placing amendments to Antonov ann-124. It has been modified under the supervision of an aviation expert engineers. There are a robotic arm and bitter electromagnet. The space shuttle will collect the space junk through the bitter electromagnet and will land on the ground normally.

EG-40	NAME(S)	EMAD ZAYET KAMEL RIZKALLA
ORGANIZATION		Egyptian Inventors Syndicate
ENTRY TITLE		**Relaxing Beds**

It is a bed of several layers and is coated with a layer of lining when it wants. The person relaxes it and the machine works to massage the body from the bottom. The lining through the movements of circular and vertical and horizontal, which leads to relaxation.

EG-41	NAME(S)	Ahmed Shaaban Refaey / Samaa Gharieb Ali
ORGANIZATION		Suez University Faculty of Engineering
ENTRY TITLE		**Increasing The Efficiency of Vertical Wind Turbine**

Make wind turbine for home use without needing any other electricity sources by developing type of vertical wind turbine called savonius turbine and it's non-common type of wind turbines but it's suitable for the idea. The main idea is making fixed fan that consist of 12 blades each two blades make a shape like a nozzle start with a large area which decreases to increase the velocity of air that reaches to turbine.

EG-42	NAME(S)	INAS BUSHRA YACOUB ABDELMASEEH / DAVID EMAD ZAYET KAMEL / KATHERINE EMAD ZAYET KAMEL
ORGANIZATION		Egyptian Inventors Syndicate
ENTRY TITLE		**Electronic arm for patients with muscular atrophy**

The device is Electronic arm for patients with muscular atrophy. An aerobic muscle is attached to the area of the other muscle in the shoulder before the muscular more area. The aerodynamic muscle sends signals to the arm to move when the patient needs movement and tries to move his arm.

EG-43	NAME(S)	Amir Shawky Arafa / Wael Gamal Ahmed
ORGANIZATION		STEM High School for Boys, 6th of October
ENTRY TITLE		Spark

The Oxy-hydrogen generator (H2O) generator is a device that depends on the electrolysis of water into oxygen and hydrogen and uses the hydrogen as a source of energy for the car engine. A catalyst of KOH was used in order to reduce reaction time, thus increasing the device efficiency. If a text can say 100 words, then a video will say 1000.

EG-44	NAME(S)	Basant Yasser Bahnas Mohamed / Dina Abozaid Elhlaly Omar
ORGANIZATION		Maadi STEM school for girls
ENTRY TITLE		Super Integrative Car System (SICS)

Our aim is to increase the efficiency and decrease the cost of the electrical vehicles (EVs) to fully replace the conventional petrol car with them. Therefore, we made innovative mechanism to the AC induction motor (EV's motor), which is the superconductivity. We use high temperature superconductors (HTS). Compared with the conventional motors, (HTS) motors have the advantages of small volume, high efficiency, and less expensive to operate. In the HTS induction motor, the superconducting material is applied to the stator part. We fixed special cryogenic cooling system (nitrogen gas) below 70 K with the method of gas extraction and decompression.

EG-45	NAME(S)	Yasmin ahmed sayed ahmed / Yasmeen Mohamed ehsan ebrahim
ORGANIZATION		Suez Advanced Industrial School
ENTRY TITLE		Waste power

This research attempts to solve the energy crisis and the problem of accumulation waste. Recently, the technology of converting plastic waste into fuel has been emerged by a process called pyrolysis. But this technique has faced many problems. So we designed a new reactor to solve these problems In addition to treats two types of waste (plastic and agricultural) and extracts energy from them. This reactor does not depends on using electrical energy to complete the process, treats the problem of PVC pyrolysis by 80% and The use of a new catalyst led to increase the efficiency of fuel produced.

EG-46	NAME(S)	MOHAMED EBRAHIM MOHAMED EBRAHIM ELSHEIKH
ORGANIZATION		Egyptian Inventors Syndicate
ENTRY TITLE		Car exhaust box reduces environmental pollution

The new invention consists of a main box, a front elbow visor for the motor, a double open box, a front face receptacle, an insulator, a distribution system, a second side heart, a thrower, and finally a closed box with carefully calculated distances and lengths.

EG-47	NAME(S)	Sharif Naji Sharif Hashem
ENTRY TITLE		Future of Solar Power (SBSP)

In simple terms, we would put some mechanism in outer space to capture the sun's energy almost continuously and transmit that energy to Earth. This would happen day or night, rain or shine. Once we have received the energy on Earth at a rectenna (a special antenna for receiving energy), we can then easily distribute the power through our normal methods. Easy enough.

EG-48	NAME(S)	Engy M. Sofan / Rahma M. Abdullah
ORGANIZATION		Maadi STEM School for Girls
ENTRY TITLE		From Filth to Wealth

Our sewage water treatment system consists of 3 main stages: The first stage is targeting insoluble matter. The second stage (Spirulina algae) is targeting the excess amount of the phosphorus, nitrogen as well as the bacteria. The third stage (Cilantro) is responsible for the extraction of the excess amounts of the harmful heavy metals.

EG-49	NAME(S)	Omar Ahmed Omar / Youssef Wael Salah
ORGANIZATION		Top Students High School-Ain Shams
ENTRY TITLE		TED – The End of Desertification

Famine is one of the biggest threats, millions are dying annually that is caused by desertification and nothing gives a full solution. By looking further, Agrobacterium, a genus of bacteria that has the ability to enter tumor genes to plant cell. By studying Agrobacterium Ti-plasmid, there is an ability to represent the plasmid with gene of interest instead of tumor gene using CRISPR-Cas 9 technology to replace the gene. Next stage is dropping plant seedlings and modified Agrobacterium by TED-4 model, an integrated adaption system designed for degraded land equipped by AC, moisture condenser and more. That will resist Agrobacterium tumor and give ability to enter genes easily.

ETHIOPIA

ET-01	NAME(S)	Abdikayr saleban mohamed
ORGANIZATION		Jigjiga university
ENTRY TITLE		**Iqra business center**

Business proposal. Marketing, production processing and Budgeting.

FRANCE

FR-01	NAME(S)	Majed Merched ALAZZAWI
ORGANIZATION		Bright Inventors
ENTRY TITLE		**Alginate Impressions Preserver**

A new dental device to preserve the Alginate impressions until they are delivered to the dental technician. PS: (Alginates are Dental materials used to make impressions to the dental and oral tissues for further dental prostheses. They are known by the problem of continuous loss of water until becoming shrinked and losing of the accuracy and elasticity). This device achieved the ideal preservation condition according to the experiments as it contained: 1- A humidity sensor connected in series with a thermal coil. 2- Water drunk cotton which was heated by a coil that ensured water vapor that was preserved by a thermal bag of steriopoor. 3- A small water tank.

GERMANY

DE-01	NAME(S)	Mehran Olyaee / Payam Sarikhani
ENTRY TITLE		**Rescue – Foldable Ladder - Unilateral and Bilateral with the ability to increase the length to the desired extent**

Design and invent a kind of ladder, which, besides being folding, lightweight, has very convenient transportation conditions, it also has the ability to increase unlimited height and also in emergency situations as a stretcher And the bridge can also be used. It can also be used both unilaterally and bilaterally, and in addition to all the features provided, unlike other ladders, which are only used to climb a surface or just to come down from a place, the inventive ladder can easily be both Has the capability and collected the total benefits mentioned on a ladder.

HONG KONG

HK-01	NAME(S)	Cheung Siu Cheong
ORGANIZATION		Hong Kong Invention Association Ltd.
ENTRY TITLE		**Weather controller**

Can successfully control the weather, making people happy and happy! Good harvest of food production! Good weather! Not afraid of climate change! Not afraid of floods, droughts! Simply, there are many radio-controlled air vehicle (large ones). And connected with them to form a large bracket, enough to make the air whirlpool, like a human typhoon like the whirlpool, make the sky somewhere cloudy! With the attraction of this air vehicle we can drag man-made clouds to where it is going to rain, and then shoot dry ice with an anti-air vehicle gun to make clouds rain!!! Aircraft can also be used to dry the ice, so that clouds rain!!! When it's sunny, you can also use multiple air vehicle around the clouds to dissipate the clouds with suction and make the clouds clear!!!

HK-02	NAME(S)	Chung Wing Lam / Kwong Hau Shing / Lam Nga Wai / Joleen Hung
ORGANIZATION		City University of Hong Kong
ENTRY TITLE		**Talk Tag**

A low-cost NFC reader/writer designed for visually impaired persons to be used for audio reminders/identifying everyday objects. It allows users to associate NFC stickers, which are cheap and can be stuck to many surfaces, with audio reminders set by the users themselves. The reminder set will be played back when the device is simply placed in near proximity of the NFC sticker. This has a wide variety of applications including assisting in the identification of sensitive personal items, especially those with similar shapes, such as cards in a wallet, to everyday items.

HK-03	NAME(S)	PUN Chi Sum, Summy
ENTRY TITLE		**Omnidirectional Precise Slow-cooker**

This invention incorporates Chinese-styled siu mei (barbecued chicken, goose, etc) with Western-styled cookery – slow-cook. Slow-cook is exceptional at keeping the food tender and chewy without altering its odour through oxidation. This invention can achieve it, especially when cooking (Chinese) meat, where the extent of how well it is done can be precisely controlled.

HK-04	NAME(S)	Cheng Yin Chi / Ko Shing Him / Lee Ka Lam / Ko Shing Chun
ORGANIZATION		Shun Tak Fraternal Association Yung Yau College
ENTRY TITLE		**SMART Game makes the elderly smarter**

The rising ageing of the population has caused many elders in the society. Our product is helping the elderly to reduce brain degradation and functional degradation. The product uses artificial intelligence technology in gaming. The elderly needs to use their fingers to show out different patterns in front the camera. The artificial intelligence will judge the patterns correctly. Besides, different fingers' patterns are corresponding English letters. In the process, the elders can learn English while playing the game. To conclude, it can alleviate the stiffness of the hands and reducing brain degeneration.

HK-05	NAME(S)	Lau Chiu Yeung / Leung Ching Fung / Leung Man Hin
ORGANIZATION		Shun Tak Fraternal Association Yung Yau College
ENTRY TITLE		**Eyes Walker**

We used Raspberry Pi Camera to identify user's face, searching for the position of the eyeballs, and further processing the image through the program, then learning and identify the data of image through the artificial neural network, so as to send corresponding signals to control the wheelchair. Therefore the people who are suffered from ALS can live freely as they will need less help from their assistants for living. For example, if their eyeballs are upwards, the car will move straight. Different positions of eyeballs are corresponding to different movement of wheelchair.

HK-06	NAME(S)	To Wing Kwan / Law Ming Sam / Lam Kwok Wing
ORGANIZATION		Shun Tak Fraternal Association Yung Yau College
ENTRY TITLE		**Touching Bus**

Bus and minibus are important public transport operators in Hong Kong and some problems are common when we using them. Some drivers skip the station when someone is waiting for the bus, while they will stop when no one is waiting which slower the driving speed. In addition, visually impaired people often encounter more difficulties when using bus and minibus. As a result, we invent a smart bus station system - Touching Bus, in order to eliminate the problem of pass up station, improve driving efficiency and reduce difficulties when visually impaired using bus and minibus.

HK-07	NAME(S)	Dr Di Zou / Dr Haoran Xie
ORGANIZATION		The Education University of Hong Kong
ENTRY TITLE		**Personalized Vocabulary Learning System Based on The Checklist of Technique Feature Analysis**

This system promotes effective and fun vocabulary learning because it personalizes different users' learning experiences based on their needs, preferences and learning histories. As word knowledge is the foundation of other language skills and the development of language learners' general proficiency levels, this system is conducive to the enhancement of other English skills like reading, listening, writing, and speaking. It is of special value for self-access learners since these learners need more help for selecting learning materials (e.g., authentic reading materials like texts from books, videos and so on) and tasks than students with teachers' guidance.

HK-08	NAME(S)	Dr Tse Ka Ho
ORGANIZATION		The Education University of Hong Kong
ENTRY TITLE		**Chinese: Take a photo and Learn**

Chinese characters are logogram. It is not easy for Chinese learners to look up characters. Even for common characters "亞 aa3, 凸 dat6, 發 faat3", their pinyin, strokes and radicals are not easy to learn, not to mention obscure characters such as "冚 luk6, 牖 jau5". Combining optical character recognition technology and our Chinese corpus, this design allows users to look up a character by taking a photo of it and selecting it in the picture. Then, the programme will display its basic information (e.g. stroke order, pronunciation, meaning etc).

HK-09	NAME(S)	Dr Winnie Lam Wai-man
ORGANIZATION		The Education University of Hong Kong
ENTRY TITLE		**GMoodle: Online Evidence-based Assessment System for Student Group Activities**

An Online Evidence-based Assessment System called GMoodle is developed for collaborative learning. Instead of assessing the final outcome, the process of collaboration is recorded. Students can keep track of the progress of individuals and their group members. Whereas teachers can make use of the progress report to set assessment criteria and identify free-riders. As it is not easy to ensure all students are actively contributed and collaborate with each other in group projects, this system can provide an objective measure to reflect the actual contribution of each student. It is also useful for students to review their learning goals.

HK-10	NAME(S)	Dr Susanna Yeung Siu-sze / Dr Ng Mei-lee
ORGANIZATION		The Education University of Hong Kong
ENTRY TITLE		**A Literacy Play Kit for Supporting Young Children's English Learning**

This literacy play kit on English language learning are for parents' use at home. The kit, composed of a play manual, learning materials and a website, enhances language learning experience and motivation, and provides training for parent on play.

HK-11	NAME(S)	Choi Ching Lam
ORGANIZATION		Diocesan Girls' School
ENTRY TITLE		**Elesafer: Security With Machine Learning**

Elesafer is an Artificial Intelligence 3-in-1 (recognition, alert, tracking) invention that revolutionises building safety management, by eliminating armed-crime (e.g. Kidnapping, rape, robbery) in areas with CCTV coverage. It firstly, detects that a weapon is being used to commit a crime from realtime CCTV footage; secondly, alerts security by raising an alarm; thirdly, uploads & synchronizes details about suspects (facial features, physique, outfit) via a Cloud database; finally, tracks suspects in real-time via Facial Recognition across different cameras of the building's network, to map out offenders' escape routes. State-of-the-art architectures of YOLOv3 (You-Only-Look-Once) amd one-shot-learning Siamese Neural Network are implemented.

INDIA

IN-01	NAME(S)	R.Arunprasad
ORGANIZATION		N/A
ENTRY TITLE		**PENDULO ELECTRIC POWER GENERATOR**

WHEN SUPPLY IS FED TO ELECTRO MAGNET, IT ACTIVATE THE PENDULUM TO AND FRO OSILLATION. DUE TO TO AND FROM MOTION OF PENDULUM THE GEARS ROTATE IN ONE DIRECTION. GEARS ARE CONNECTED TO COUPLER AND THE COUPLER IS CONNECTED TO GENERATOR SHAFT. GENERATOR [MADE IN WEIGHTLESS ALUMINUM] ROTATES AT 1500 RPM ARE LESS. AN OUTPUT OF 10V IS INDUCED AT THE OUTPUT OF GENERATOR. WHICH IS X. A SENSOR IS PROVIDED TO SENSE THE OUTPUT. COMPARATOR ARE PROVIDED IF THE OUTPUT X<10 IT ACTIVATES TIMER IN 2-3 SECONDS. IT IS FED TO BATTERY AND THE ELECTROMAGNETS IS ACTIVATED. CONTINUOUSLY POWER IS GENERATED AT THE OUT. 10V IS STEP UP BY USING TRANSFORMER.

INDONESIA

ID-01	NAME(S)	Deri Gustian / Zamlarini / Hang Nude Sania Sani / Wyna Dwi Lestari
ORGANIZATION		SMA IT Iqra'
ENTRY TITLE		**Instant Noodles from Seed of Durians as a High Nutrition Food with No Preservatives**

The key innovative is Durians. Durian is king of fruit. Waste of durian is seed. The seed will be make of noodles. Instant Noodles from Durian seed give the big influence in Indonesia, especially in Poor people. This noodles has a cheap price and healthy impact to body (no preservations). Now, we have commercialized in traditional market and in our school. We hope can next the marketing more widely.

ID-02	NAME(S)	Sabrina Fitria Saraswati / Sitadhira Prima Citta
ORGANIZATION		Pribadi Bilingual Boarding School
ENTRY TITLE		**Proteolytic Enzyme Extracted from Mealworms Larvae (*Tenebrio molitor*) as Rapid and Ecofriendly Plastic Biodecomposer**

Plastic is a material that is very commonly used in human life. This study uses mealworms as biodecomposers for plastics and derivatives such as styrofoam. The polymers decomposing enzymes can decompose plastic because plastic is a synthetic polymer. The method used in this study was an experimental method using live mealworms as plastic biodecomposers and also in vitro testing using polymer decomposition enzymes extracted from mealworms. The results showed that plastic and styrofoam decomposition occurred significantly in the observation period of 72 hours. The reduced plastic mass is 100 mg whereas the reduced styrofoam is 1070 mg.

IRAN

IR-01	NAME(S)	Mohsen Jafarzadehgharehziaaddin / Alireza Ebrahimzadeh / Ramin Rasi
ORGANIZATION		Tabriz Valiasr Hospital, Department of Psychology
ENTRY TITLE		**Brain Waves Self-regulating Hats for Depressed, ADHD and Attention Deficit Patients**

Nervous feedback "By using a brain electrical wave record and giving feedback to the patient, it attempts to induce a self-regulating individual to the patient's brain or an impairment. Feedback can be induced by the voice or the image into the brain of the individual, and in some way a conditionalization in the brain's waves by the brain itself. And through this, a good change in the activity of brain waves. In this 64-hole cap, the electrodes are designed and embedded that a person with a disorder can use it to stimulate a non-invasive electrical brain that is harmless. And depending on the type of disorder that is, the type of the waves and their amplitudes in their brain returns to the normal range, and all of these actions are automatically taken by the hat selection by selecting the button to determine the disorder. The electrodes inside the cap are strategically placed on key areas on the skull and record brain wave activity and then apply the necessary changes. The designed hat has inspired its foundation of neurotic attacks and attempts to improve its function by making patients use it for its patients, in order to reduce the costs of stress and the environmental conditions of psychiatric and psychiatric clinics. Reduce. Another advantage of this hat is to provide a center for collecting data for research purposes, as well as to create conditions for tracing psychologists and psychiatrists from their patients.

IR-02	NAME(S)	Sayed Alireza Moosavi / Hamidreza Rohani / Pouya Molana
ORGANIZATION		Zino Food and Health Company
ENTRY TITLE		**A New Formula for Preparing Mayonnaise Sauce**

Powder, including the most stable formulation of emulsion and quite natural materials in order to prepare mayonnaise sauce. Produce mayonnaise with very good quality without need of advanced equipment.

IR-03	NAME(S)	Amir Jalalinejad / Sayeh Safavai / Mohammad Farokhzad / Hoda Jalalinejad
ENTRY TITLE		**Implant placement robotic arm with image processing**

Precise and smart placement of dental implant has an important role in increase of durability of it, and also decrease total price in placement of dental implants. Smart robot of placement of dental implants is a robotic arm that perform action of placement of implants automatically without use of any hand under management of relevant dentist, and all processes are controlled by dentist and may be modified via camera of robotic arm and processing image.

IR-04	NAME(S)	PARS LANEH RESEARCH AND CONCRETE PRODUCTION COMPLEX
ENTRY TITLE		**Flexible Reinforced Concrete Encrusted New Jersey Barriers Designed to Prevent / Minimize Human Loss and Material Damage in Cases of Vehicle Accidents**

The design and development of this new generation of highway reinforced concrete Jersey barriers will considerably minimize or prevent the human loss or vehicle damages caused by driving accidents. This particular type of New Jersey Barrier or "Jersey Walls' is constructed in the form of a Nano-technology- developed, highly resistant and durable concrete filaments forming a crust layer round the barrier frame. The frame is filled with a special mix of soil material which absorbs the force and intensity of the impact energy. Apart from it being highly resistant at the time of accident or collision impact, it acts like an energy dissipater which reduces the effects of the impact and causes the vehicle to slow down rapidly and veer back safely in its original line of traffic. Its highly flexible structure and the characteristic capability to absorb the intensity of the impact at the vehicle/barrier collision is an exceptional feature of the New Jersey Barriers developed by us.

IR-05	NAME(S)	Sepideh Radmehr / Saeid Radmehr / Hamidreza Pourfaraj / Shima Ahle Imani
ORGANIZATION		Mohammad Otaredian and Associated General Partnership Co. / Willowdale High School, Toronto, Canada
ENTRY TITLE		**Design and Production of Crystalline Water – Proof Penetrative for Concrete by Nano Technology**

Crystalline water – proof penetrative by Nano is a special chemical compound with some its components that have considerable permeability. Concrete protection is started as a result of reaction of different elements in solution when contacting the surface of concrete. These materials deeply penetrate the concrete through capillary cavities of concrete and using osmotic pressure mechanism. Crystals, formed as a result of reaction of different chemicals with each other and water, block the capillary cavities of concrete and cracks resulting from shrinkage and drive the moisture out. This process occurs because of water pressure or against water pressure. When there is no moisture, the components of penetrating material will inactively remain in the environment and when water penetrates, the penetrating material will contact the moisture and will be activated, and the chemical reaction and sealing process will be automatically repeated and will progress in concrete more deeply. The components of penetrating material will continuously do sealing and re-sealing according to their chemical nature.

IR-06	NAME(S)	Afshin Adabiabkouh / Sara Adabiabkouh
ORGANIZATION		Mohammad Otaredian and Associated General Partnership Co. / Willowdale High School, Toronto, Canada
ENTRY TITLE		**Enhanced endoscopy system using animals bionic features**

In this invention we create a new endoscopy system by combining BIONIC features of some specific animals. This invention is a small bulb that can be swallow. In the structure of this invention we use a kind of healthy and safe polymer that is secure against the Stomach Acids. The monitoring system is come from chameleons' eye for getting full around view. The body of this invention is equipped by mole cricket mechanism for floating on the water for floating on the Stomach liquid. The monitoring of this invention is connected with the server by WI-FI and use a battery for working till 2 hours. After endoscopy processes the bulb can be excretion as Feces.

IR-07	NAME(S)	Niki Ghobaei / Mahroo Mansouri
ORGANIZATION		Shahid Mahdavi International Complex (IB)
ENTRY TITLE		**Preparation of biodiesel from renewable resources and household waste**

Biodiesel is evolving to be one of the most employed biofuels for partial replacement of petroleum based diesel fuel, especially in recent years. Biodiesel has become more attractive recently because of its environmental benefits and the fact that it is made from renewable resources. The cost of biodiesel, however, is the main hurdle to commercialization of the product. In this work, biodiesel production from the used cooking oils are used as raw material. Adaption of continuous transesterification process and recovery of high quality glycerol from biodiesel by-product (glycerol) are primary options to be considered to lower the cost of biodiesel. Also the most widely used feedstocks for biodiesel production are vegetable oils. The most commonly used method is transesterification of vegetable oils and animal fats. The transesterification reaction is affected by molar ratio of glycerides to alcohol, catalysts, reaction temperature, reaction time and free fatty acids and water content of oils or fats. The mechanism and kinetics of the transesterification show how the reaction occurs and progresses.

IR-08	NAME(S)	Milad Semyari Roudbari
ENTRY TITLE		**Self-aware modular architectural system with the ability to navigate and adapt to the environment**

This design is inspired by the cells and their placement together. Here is a living and thought-out architecture. The modular system is self-aware that it is moving around the environment after reviewing the conditions and making the decision without any restrictions. They are constantly restructuring and reinventing itself. This invention consists of individual units with a specific geometry for easy movement that is connected to other units via wireless. After collecting environmental data and sending it to the central AI, the correct decision has been made and the units create the optimal shape appropriately. The system's propulsion system is powered by a central motor that supplies its energy through solar cells. Because each of these units are alive, they are made of recycled plastic and can resistant to environmental factors.

IR-09	NAME(S)	Behrokh Hatami
ENTRY TITLE		**Sleeping Mandibular Fixer**

One of the common diseases that today is noticed a lot, is the sleep-disordered breathing that causes night-time snoring and many side effects such as feeling tired and drowsy during the day, morning headaches, decreased oxygen levels, blood sugar, blood pressure and etc. One of the causes of this disease is the anatomy of the body, which the airway is narrowed or obstructed in some people due to being the back of the mandible or swelling and obesity in the throat. The current treatment options are surgery or the using continues positive airway pressure devices (CPAP). The surgery has many side effects for the patient, and using CPAP can be difficult while sleeping. In this project, we are seeking to make a piece that can be used to keep the mandible ahead of the routine in sleep to keep the airway open and the person can breathe easily. The above sample already has been made, but in the produced designs for each patient, a patient-specific segment should be produced by a 3D printer after taking a photo of the jaw and teeth and molding it. This process is very time consuming and costly. In this design, the texture of the piece is flexible and it fits on a variety of tooth models and does not need to be molded. And also the outer part of the piece that pushes the jaw forward, can be resized and adjusted for each patient at the time of purchase depending on the size&shape of the same patient's jaw. As a result, this piece is designed to be used by all patients.

IR-10	NAME(S)	Behrokh Hatami
ENTRY TITLE		**Hospital Smart Trash Bin**

Separation and packaging of hospital trash is very important due to the being infectious hospital trash and the presence of sharp objects such as needles, surgical blades, etc. in these trash. Currently, the separation of hospital trash is done by hospital staff at the source. But sometimes due to the importance of speed of operation and the lack of time in providing medical services, this separation has problem and may be mistaken. On the other hand, chance of injury for hospital service staff is not impossible when packaging the trash. In this project, we are seeking to design an intelligent trash can to minimize the above mentioned problems and to provide the safety of hospital staff and at the same time the trash separation is done very carefully. in designed smart trash bin when the user is in front of the bucket, the bucket door opens automatically, then after the trash enters the bin in the first step, trash passes through a metal detector sensor, here if it is detected the metal trash, It is considered the sharp garbage and it is automatically directed to the sharp trash tank immediately. If the trash is not metal, it enters the next stage where the moisture sensor detects that the trash is wet. If the trash is wet, it is infectious and is transported to the infectious trash tank. Otherwise the trash is detected non-infectious trash and is transported to the non-infectious trash tank. In all the way passed through the trash, UV lamps are used to disinfect the inner surfaces of the bucket. After each trash tank is filled, it is automatically packaged and the system gives the user a tank drain alert. The whole process of bucket operation is smart and minimizes users' exposure to trash.

IR-11	NAME(S)	Shima Shahidi Zandi / Ehsan Marzban Shirkharkolaei
ENTRY TITLE		**Hydrotherapy wearable**

The present invention is a smart wearable that offer situations to enhance the great of hydrotherapy modality in dry land. It is designed by way of pneumatic equipment to apply all of the forces to be had at the body. All situations, which include temperature, forces, and floatation, are absolutely underneath managed.

IR-12	NAME(S)	Aslan Foroutan
ENTRY TITLE		**Vitamins skin patch**

This skin patch contains vitamin b6 and vitamin c. These two vitamins play an important role in maintaining skin health. At first, A Bluetooth controller is put on path, so the two vitamins in our app are controlled and will be released when required. There is a micro-heater in the smart patch that mollifies & administers vitamins to the skin.

IR-13	NAME(S)	Seyededhfatemehzahra Hashemiteroujeni
ENTRY TITLE		**Fixed joint aspiration syringe with ultrasound probe**

This invention is related to field of medicine and medical engineering and can be use in medical centers by the use of small ultrasound probe to determine the exact location of the articular fluid and discharge the aspirated fluid in generated bag by valve at the end of the syringe without having to remove the syringe.

IRAQ

IQ-01	NAME(S)	ABDULRAHMAN NABEEL YOUNUS / MOHAMMED HAJI
ORGANIZATION		Iraqi Inventors and Innovators Society (IIIS)
ENTRY TITLE		**Gyroscopic Stability Control System**

This is a New type of stability control systems in vehicles used just the mechanical and physical powers to keep the vehicles stable, comfort and safe. This system is a unique interconnection shock absorbers system.

IQ-02	NAME(S)	FALAH KAMAL MOHAMMED AL-KARAMANJEE / SANAA SALIM NAJM AL-DANEEN
ORGANIZATION		Ministry of Sciences and Technology / Ministry of Higher Education and Scientific / University of Babylon
ENTRY TITLE		**Design of new machine for controlling of Al-Nile flower More efficient and less pollutant to environment when controlling**

Al-Nile flower is one of the flooding weeds snice it floats on the water, It is considered one of the most dangerous flooding weeds and affects water resources of many countries. This plant is originated from the river basin of Amazon – Brazil, South America and spread out to 70 countries including Iraq. The invented control machine depends on the idea of capillary and gravity in order to spread the systematic poison to AL- Nile flower plant by loosen cotton threads by which the leaves of plants, intended to be controlled are wiped.

IQ-03	NAME(S)	NIBRAS RIDHA MOHAMMED
ORGANIZATION		AL-Turath University
ENTRY TITLE		**Elimination swarming phenomenon of Proteus spp. and purification of Pseudomonas aeruginosa by using natural propolis produced by honey Bees and by used Propolis found as powder**

Elimination swarming phenomenon of *Proteus spp.* and purification of *Pseudomonas aeruginosa* by using Propolis produced by honey Bees, as well as by using propolis present commersially as powder, by use different concentration of propolis (0.7, 0.8,0.9, 1, 1.3, 2, 2.5, 3), this result is efficient to killing *Proteus spp.* by added propolis to media and efficient to purification of all bacteria that grown on agar and purification of *P.aeruginosa*, the result improved that elimination swarming phenomenon of Proteus spp. in different concentration of Propolis and confirmed by Urease test ,oxidase test and Vitek GN-ID and different biochemical test to ensure growth of *P.aeruginosa* is purified without contamination of *Proteus spp.*

IQ-04	NAME(S)	NIBRAS RIDHA MOHAMMED
ORGANIZATION		AL-Turath University
ENTRY TITLE		**Detection of gene mexX responsible for resistance of MexXY efflux pumps for Colistin in Pseudomonas aeruginosa**

mexX gene encode for MexXY efflux pumps responsible for resistance of Colistin antibiotics of Pseudomonas aeruginosa ,improved by detection of this gene by Conventional PCR and study of gene expression of *mexX* gene by using qRT-PCR (Quantitative real time PCR) after added certain concentration of colistin powder.

IQ-05	NAME(S)	PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / Dr. MAHA KHALIL ALMALLAK / Dr. Nasir a. Almansouri / Dr. Zahida miran Hussein
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**An advanced technique for inducing and treating diabetes in the pregnants with butanolic extracts of celery and their effects on mothers and their fetuses with molecular characterization and gene expression of related genes**

In this study the diabetes mellitus (DM) is induced in experimental rats (Rattus norvegicus) by intraperitoneal single dose of Streptozotocin. Results of study on the macroscopic and microscopic observations on tissues (pancreas, ovaries, uteruses, placenta, and fetuses) of diabetic rats referred to symptoms of diabetes disorders due to use single intraperitoneal dose of Streptozotocin (60 mg/kg of body weight).

IQ-06	NAME(S)	PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / Dr. kawther H.Mahdi / DR. Khalil I.Alhamdi / Dr. Sundis S.Bakr
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**An advanced technique for inducing and treating diabetes in the pregnants with butanolic extracts of celery and their effects on mothers and their fetuses with molecular characterization and gene expression of related genes**

A new technique of five steps were used to isolate, purify, identify and characterize the Staph .aureus exotoxin (staphylogen / or staphylogenic protein as a superantigen), where its purity and molecular weight were evaluated by using Polyacrylamide gel electrophoresis (PAGE 7.5%). A high purified single band protein of Staph .aureus exotoxin has a molecular weight of 9 47.315) Kd , and eight purified bands of all Staph.aureus antigens have a molecular weight ranged from (13.567 – 549.540)Kd.

IQ-07	NAME(S)	**Dr. Reem abdul Raheem Mirdan alsaad**
ORGANIZATION		College of medicine – University of Babylon
ENTRY TITLE		**Determination of hormone concentrations in rats treated with Myrtus communis extracts**

The study of effects of Myrtus communis extracts on rat hormones such as TSH, T3, T4 and Testosterone after serial period times of injection with various concentrations. In general, the results showed that there are increase in all of studied hormones(TSH, T3 , T4 and Testosterone), and this increasing in the hormones level was greatest with the long time period after injection with Myrtus communis extracts and the greatest increasing was recorded in the 15 days after injected with plant extracts, in other view the present study revealed that the highly concentration 1000mg/kg was gave a highly effects on the hormones concentration followed by 750 and then 500 mg/kg. According to statistical analysis, the results illustrate that there are statistical differences between concentrations of all hormones in the studied period times depending on extract concentrations. P<0.05.

IQ-08	NAME(S)	**PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / Prof. Dr. Wafaa sadoon shani / Dr. Nisreen waleed Mustafa**
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**Extraction and purification of specific antigens using in the diagnosis of hydatid diseases**

This study aimed to prepare different antigens for detecting their efficiency in hydatodosis diagnosis in human which caused by larval stage of Echinococcusgranulosus as following: A) Antigen B (AgB) was purified from hydatid fluid by anion exchange chromatography technique then treated electrophoretically to isolate its bands (8 kDa, 16kDa and 24kDaAgB) using them as antigens, in addition to antigen purified from protoscoleces, (protoscoleces soluble somatic antigen PSSA). B) Prepared anathorantigen from protoscoleces, (protoscoleces soluble somatic antigen PSSA).

IQ-09	NAME(S)	**PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / Dr.falah maarof mutlak / Dr. Noori mohammed Luaibi / Dr. Adil edan alsaimary**
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**RECOVERY AND EXTRACTION OF A NEW AGENTS HAVE BIOLOGICAL ACTIVITY FROM SOME MARINE INVERTEBRATES**

Biological extracts (hydrolysis, alcohol extracts, total protein extracts, total alkaloids extract) were extracted from a number of marine invertebrates: Astropecten polyacanthus polyacanthus, sea urchin Ecinometra mathaei, Portunus plagicus shrimp Metapenaeus affinis. Some of the above extracts are effective against germs Gram - positive bacteria more than Gram - negative and some of them are effective against gram - negative bacteria greater than its effectiveness against gram positive isolated from burns.

IQ-10	NAME(S)	**PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / PROF DR. JASSIM ALDHIAB / MR. JASSIM M.ABD ALI / PROF DR. SUNDIS S.BAKR**
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**SYNTHESIS OF A NEW international MOUNTING AGENTS**

SYNTHESIS AND recovery of a new internationally mounting agents for preparation and preservation of histopathological and microbiological slides Five new mounting agents were recovered and named: BASMED 1 ، BASMED 2 ، BASMED 3 ، BASMED 4 ، BASMED 5. The load efficiency of these five circles was compared with the commonly used industrial loading media - Canada balsam, DPX and Hardner - and studied its important and formative properties after a long period of time (more than 100 days) by the specialist in this field. Distinct and similar to the efficiency of loading the industrial media while others have shown relatively good efficiency can be adopted in the future to overcome their disadvantages and disadvantages limited

IQ-11	NAME(S)	**PROF.DR.IHSAN EDAN ABDULKAREEM ALSAIMARY / Dr. MAHA KHALIL ALMALLAK / MAHDI M. THUAINI**
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**Using of advanced drugs in treating pulmonary fibrosis**

In this patent pulmonary fibrosis (PF) was induced in experimental rats (Rattus norvegicus) by bleomycin drug (BLM) with adose 15mg/kg of body weight. The activity and efficiacy of dexamethason losartan and alteplase were established in this study against (PF) induced by (BLM),the findings identified these drugs as inhibitory agents on scar and fibrous tissue formation. Administration of dexamethason, losartan and alteplase caused significance increased with oxidative enzymes (SOD,GSHpx) in blood serum of rat when used in combination with (BLM) drug ,also level of hydroxyl prolin(HYP) increased significantly in serum of (PF)group while conversely the level decreased when using these drugs.

IQ-12	NAME(S)	**Prof. Dr. Ihsan Edan Abdulkareem Alsaimary / Dr. Wijdan Hussein Abdulsahib / Dr. Kawther H.Mahdi / Dr. Ahmed Abid Burgal**
ORGANIZATION		UNIVERSITY OF BASRAH
ENTRY TITLE		**Using of Nitrate Reducing Bacteria isolated from Basrah oil fields for controlling the biogenic formation of hydrogen sulfide (H_2S) produced by Sulfate Reducing Bacteria**

This study includes the used of Bio-Competitive Exclusion technology (BCX) to control biogenic production of hydrogen sulfide H2S by Sulfate Reducing Bacteria SRB in batch cultures and bioreactors. The injection of nitrate NO3 and nitrite NO2 promotes the growth of Nitrate Reducing Bacteria NRB which outcompete SRB on carbon sources. A total of 40 samples were collected from produced water of oil production facilities in Basra including Nahran Omer and Al -Lahis oil fields in a period time of 6 months from August 2013 to January 2014. Mix cultures of SRB and NRB are isolated from these sample, the results show that the number of SRB in produced water of both oil fields are higher than the numbers of NRB. The level decreased when using these drugs.

JORDAN

JO-01	NAME(S)	**FARAH AMJED BANI MUSTAFA**
ORGANIZATION		Jubilee school
ENTRY TITLE		***Eriobtrya Japonica* to treat water**

First, I was thinking about trust worthy sorbent to adsorb toxic metals (lanthanides) of electronic wastewater, and I found after searching that porous materials could adsorb toxic metals efficiently as an effect of trapping metal ions in its pores, further searching we found that Eriobotrya japonica is a porous material found widely all over the world and this was improved by scanning electronic microscope. So I chose it in my research, the steps started by washing Eriobotrya japonica leaves, and slaked in distilled water then let it dry in the greenhouse, then grinded into a powder .Then testing the & removal of toxic metals cerium and neodymium for Eriobotrya japonica was done at different concentrations with different pHs, time, mass of adsorbent, proved that they are good sorbents.

KENYA

KE-01	NAME(S)	**Mohamed Noor Shire**
ORGANIZATION		Nairobi University
ENTRY TITLE		**Provision of Accounting and Payroll Services**

Valley Fitness, Inc is in need of Accounting and Payroll services to take over for an overburdened owner/manager. With limited office staff the accounting and payroll functions have been suffering. Outsourcing these office activities will all the owners/management to focus on other aspects of the business. Valley Fitness, Inc is a small privately owned organization that now requires professional accounting and payroll services in a cost effective manner. Applied Accounting Services specializes in Full Accounting and Payroll services for mid-size businesses. All staff accountants are CPA's with additional tax attorney services available through our corporate office location in Seattle, WA.

KE-02	NAME(S)	**KEN ANDREW MUTHUI GACHECHE**
ORGANIZATION		SUBZERO ENGINEERING
ENTRY TITLE		**I.S.E.E**

I.S.E.E is a wearable device that's worn like sunglasses but it helps visually impaired or blind people to navigate through echo location. The wearer gets voice prompts of objects in their path 2M, 1.5M, 60CM and a stop notification accompanied by beeping sounds.

KOREA

KR-01	NAME(S)	**Kang, Seung Ho**
ORGANIZATION		St. John's School
ENTRY TITLE		**Operating Table for Animals**

A ratchet which can adjust the angle of rotation is installed on the lower part of the operating table so that the operation can be easily performed at left and right side angles and the animal's legs can be easily fixed to the operating table when observing laboratory animals or performing surgery. It is an operating table for animal experiment which is equipped with an oxygen supply unit and a temperature control unit so that it can be safely observed and operated.

KR-02	NAME(S)	**Kang, Ho Young**
ORGANIZATION		St. John's School
ENTRY TITLE		**Mop with Roller Changer**

Generally, when cleaning with a mop, if the mop surface becomes dirty, it is troublesome to replace it with another mop or to wash it while cleaning. If the rollers and the belt type mop are installed, the mop surface can be continuously changed clearly while rotating the rollers.

KR-03	NAME(S)	**LEE, JUN HYUNG**
ORGANIZATION		Korea Digital Media High School
ENTRY TITLE		**A push-up measuring tool with an automatic counter sensor**

The right position for push-ups in measurement is to bend your arms with your legs and waist straight so that the push-up rod and elbow are at 90 degrees. However, there are students who bend their arms a little to get a good rating with little effort, and there are often problems of fairness and reliability in manually counting them. In addition, poor posture should be excluded from the number of times, which often makes it difficult to calculate the total number of times. A sensor was attached to a push-up measuring tool so that the arm could bend 90 degrees to allow the buzzer to sound and automatically count when the chest area comes into contact with the chest touch pad. Also, the number of times was automatically displayed on the screen.

KR-04	NAME(S)	Youn, Soo-Ro
ORGANIZATION		BioGemex Ltd.
ENTRY TITLE		**Immunological Complexes and Kits for Cancer Diagnostics using Autoantibody Detection, and the Uses Thereof**

The feature of this product is more accurate than the method of detecting existing blood antigen, and it is possible to diagnose cancer early. In addition, as the specificity and sensitivity are both high, it is easy to diagnose cancer and early cancer of normal people as well as existing cancer patients, and diagnosis time is greatly shortened compared to conventional cancer diagnosis, and the product can be tested only with blood.

KR-05	NAME(S)	SEOYEON KIM
ORGANIZATION		Korean Minjok Leadership Academy
ENTRY TITLE		**Antimicrobial Underwear Using Nanoparticles**

This invention introduces the appropriate facilitation and placement of nanoparticles to prevent the occurrence and recurrence of urethritis, cystitis, and nephropyelitis, common gynecological disorders in women. Escherichia coli, shortened for E. coli, is a gram-negative bacteria that is the first factor causing the above diseases. The nanoparticle with the structure that can have most contact with the structure of the E.coli would be chosen. It also proposes the most efficient and ideal arrangement of nanoparticles, taking into account the anatomical structures including vagina, urinary tract, anus and its surroundings.

KR-06	NAME(S)	Song, Min Wook
ORGANIZATION		Chadwick International School
ENTRY TITLE		**Ergonomic computer interface considering upper extremity disability**

A person with an upper extremity disability may face difficulties while utilizing a computer mouse. The largest factor that induces this problem is the fact that the action of clicking a mouse requires dexterity. This invention aims to create a new, ergonomic computer interface by utilizing the movement of the entire arm instead of only utilizing the fingers.

KR-07	NAME(S)	KIL JUHYEONG
ORGANIZATION		LOTUS PROSUMING MANAGEMENT
ENTRY TITLE		**Electricity Connecting Device**

The present invention relates to the electrical outlet and plug invented for the first time in the world. This prevents safety accidents by not exposing the terminal for power supply, and enables easy electrical contact and release by simple repetitive pressurization through simple connection operation by magnetic force with increased convenience. On the other hand, the connection terminal of the plug and the outlet is formed in a built-in form to prevent electrical safety accidents due to intentional short circuit or moisture, and it is possible to control the application of power through repeated pressurization operation. (Patented technology can be sold)

MACAO

MO-01	NAME(S)	SU YI LING
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**Exploring the magical use of invasive plants – Extraction, Separation & Properties of Eichhornia crassipes Capability Study**

Based on my hobbies and waste recycling concept, this study carried out a method based on "exploring the magical use of invasive plants", designed the extraction, separation and performance study of the water extract of the water lily, based on the invasive plants., sharing some healthy, environmentally friendly, natural dyeing methods, pigment preparation and algae inhibition experiments.

MO-02	NAME(S)	Chang Chon In / Chan Peng Him / Che Tan Kei
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**Flood rescue device based on Arduino**

(1) An amphibious vehicle. It can quickly shuttle between flooded streets and buildings, allowing rescue team understand the situation; to explore the ocean and undiscovered creatures. (2) Using real-time WI-FI control and data feedback, vehicle control and get probe information, so that rescue team can get results and works. (3) Use robotic arm increases practicality of the vehicle, such as cleaning the sea surface; remove collapsed building during the disaster, and increase the rescue's success rate. (4) Life detection vehicle. By using human body infrared detectors, real-time photography modules, etc., senses whether there is lives and transmits data to Arduino.

MO-03	NAME(S)	ZHUO JINGRAN / ZHUO JINGYU
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**Development of wireless power transmission device**

In order to realize the medium range radio energy transmission, the electromagnetic resonance coupling wireless energy transmission technology is adopted with the method of combining theory and experiment, the design aims to realize the distance, efficiency and power maximization a radio transmission system.

MO-04	NAME(S)	Cao yongyan / Chen jiaping
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**Relics Identification and Authenticity—An Image Discrimination System Based on Machine Deep Learning Technology**

1) Consisting of machine deep learning and image comparison network. 2) Image retrieval optimization system examine accuracy rate. 3) Precisely locate the difference position between true and counterfeit. 4) The inspection process does not destroy cultural relics and can be archived and saved. 5) It facilitate the society and applicable to the public. 6) The system can perform simple scanning in the mobile phone and display by AR form.

MO-05	NAME(S)	Leong Chi Long / Tang Io Seng / Huang kun Chia / Julian Patrick Diaz Liu
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**Artificial lower-extremity movement assist device**

This work is based on the physical inconvenience of disabled people and elders, by setting up a control group and conducting a large sample of randomized controlled trials, it helps the development of physical therapy and focuses on the usage convenience and ensuring safety as research. This is a wearable device, The ideal walk is guided by a torque that helps the user bend and stretch the hip. Reducing people's doubts on safety, so that anyone can experience the fun of everyday life.

MO-06	NAME(S)	Cheung Hou Long
ORGANIZATION		The Affiliated School of The University of Macau
ENTRY TITLE		**An IoT Monitoring Oil Fume Purification System**

The catering industry has developed rapidly in recent years, but it has also caused great impact and damage to the environment. Therefore, this project aims on solving the problem by recycling the harmful flumes and heat generated in the catering industry by Using temperature difference power generation, metal oxide catalysis, Internet of things system integration and other technologies to create a system that efficiently handle hazardous fumes and recycle energy.

MO-07	NAME(S)	Lo Sam I
ORGANIZATION		Tong Nam School
ENTRY TITLE		**Arduino-based automatic release fire extinguishing device**

It is often heard that car spontaneous combustion. Automatic fire extinguishing devices are especially important based on vehicle fire safety. Using arduino intelligent monitoring of temperature and automatic fire extinguishing device, uses wifi communication components, temperature sensing, solenoid valve to obtain temperature data, through programs, maintains communication monitoring with the in-vehicle facilities. The web page can instantly check the temperature data and the release of the solenoid valve. The system presets the temperature value. At the set value, it is considered to be on fire. It automatically opens the solenoid valve and releases the gas extinguishing agent to suppress the fire.

MO-08	NAME(S)	Chen Yu
ORGANIZATION		Macau Pooito Middle School
ENTRY TITLE		**Baote bottle recycle bin base on Air compression**

Nowadays, people in order to conveniently, will choose to buy bottled water in supermarket for a drink, this movement waste lot of plastic. Therefore, the government implemented a plastic recycling plan, and encourage people to compress the bottles before putting into the recycling bin, but many people still lazy, they just directly put the bottles into the recycling bin without compress. Those uncompressed bottles not just occupy a lot of space, and also increase the transportation cost of recycling. So that, we make this work to help people to compress the plastic bottles before throwing them into the recycling bin.

MO-09	NAME(S)	YAN XINYU
ORGANIZATION		Jingan No.4 Primary School (in China, but represented by Macao)
ENTRY TITLE		**Facecloth Nanny**

Facecloths are hard to get dry in humid bathrooms that it is easy to breed bacterium and acarid. Facecloth Nanny is an all-in-one machine assembled by humidity sensor, dryer and ozone disinfector that it could automatically dries up and sterilizes facecloths. The dryer starts working automatically when a wet facecloth is hanged on the humidity sensor hook. After the facecloth is dried up, the dryer would shut down while the ozone disinfector would launch automatically. Facecloth Nanny is suitable for households, hotels and schools. It is power-saving, environmental friendly and easy to install.

MACEDONIA

MK-01	NAME(S)	Ayshe Sena Tekkoyun / Shukran Tekkoyun
ORGANIZATION		Yahya Kemal College Skopje
ENTRY TITLE		**"Ubavina" Economical solution for skin disorders using natural plants & essential oils**

In 21st century world we see that nearly everybody has problems with their skin. Eczema, psoriases, itchiness, acne, scars, pores, blackheads... Cosmetic industry is very popular because of this reason. However cosmetic products are not affordable, they are unnatural, they contain many chemicals, they may cause allergens, they are not good for nature as well. With this natural cream we can find the solutions we are looking for our skin problems.

MK-02	NAME(S)	Ivana Matoska / Miroslav Bojkovski
ORGANIZATION		Yahya Kemal College Skopje
ENTRY TITLE		**One's Trash Is Another's Treasure**

In this research we introduce the results of experimental tests carried out on biodegradable waste, with our main focus on the utilization of cornhusks and bean seed coats. For the purpose of this research, a series of laboratory experiments were conducted: we combined organic waste with softeners, bleaching agents and neutralizers in order to produce paper and textile fibers, as well as biofuel and plastic. The outcome of our study showed promising results and offered potential for the production of commodities from organic waste as well as the potential for additional modifications.

MK-03	NAME(S)	Emel Abush / Riljeta Jonuzi
ORGANIZATION		Yahya Kemal College Struga
ENTRY TITLE		**Cardboard paper and bio degradable plastic produced form Rice by-products**

Rice is a grain that feeds most of the world's population. Each year after harvesting rice straws are set on fire on open fields therefore causing air pollution and GHG emission. In meantime a lot of trees are sued for cardboard and paper production. Rice straws contain cellulose at a percentage of 30-45% making it a good substitute for tree cellulose. As well the rice root system contains starch, making it usable for bio-degradable plastic production.

MK-04	NAME(S)	Angela Busheska
ORGANIZATION		Yahya Kemal College Struga
ENTRY TITLE		**Environment Friendly, Efficient and Sustainable Method of Cleaning Oil Spills using Fruit Peels**

The problem was that there was not a solution good enough to tackle the oil spills. After the conducted research I found out the most effective ratio of peels pomagranate:banana:apple:lemon:orange=1:1:1:1:1. We conducted three rounds of experiments.The first round experiments showed that sorbent of fresh biomass and nylon mesh is only oleophilic.The second showed that sorbent out of jute mesh and sundried biomass is oleophilic, hydrophobic, eco-friendly but not durable and efficient.The third round that used jute mesh, sundried biomass and mesh coating with beeswax,epoxy adhesive and n-Hexane that we washed the peels with was the most effective.

MK-05	NAME(S)	Vesna Trajkovska – Filevska
ORGANIZATION		National Association of Inventors of Macedonia (NAIM)
ENTRY TITLE		**Miniature Capsule with Perfume for Embedding in Clothes or Jewelry**

Miniature Capsule with Perfume for Embedding in Clothes or Jewelry allows for precise time period of scent emitting, saving the amount of perfume.

MALAYSIA

MY-01	NAME(S)	GOMATHY D/O SANKARAN
ORGANIZATION		SJKT KANGKAR PULAI,JOHOR
ENTRY TITLE		**Natural Leaf Plate and Mug**

1) The objective of the project is to produce natural leaf plats and bowls using waste materials of the plants such as leaves. 2) To study the alternative way to disposable plastic tableware. 3) Educate the students more environmentally friendly. 4) Students able to produce their own natural leaf plate because it's more solid, easier to recycle, and look wonderful, has a beautiful texture and elegant designs. 5) Everyone able to educate the public about making of disposable natural leaf plates doesn't aggravate deforestation, does not t pollute or affect the environment in any other negative way.

MY-02	NAME(S)	GOMATHY D/O SANKARAN
ORGANIZATION		SJKT KANGKAR PULAI,JOHOR
ENTRY TITLE		**4 N – FREE HAIR MASK**

By choosing 4N – FREE HAIR MASK is a pure organic hair product. 4 N-FREE hair mask offers 4 solutions of no chemical, no toxic, no bleaching, and no grey hair. It is free toxic with no harmful chemicals realized. It enhance better and more comfortable living- stop hair falling, strengthens the nervous system- organic ingredients, made of Organic ingredients - they use safe and eco-friendly, and it promotes hair growth, prevents balding and imparts natural colour to the hair.

MY-03	NAME(S)	GOMATHY D/O SANKARAN
ORGANIZATION		SJKT KANGKAR PULAI,JOHOR
ENTRY TITLE		RECYCLE GLASS FILTER

To enhance community to use clean water and adequate people the importance of consuming clean water, use water wisely, be aware of polluted water and cultivate the younger generation to love the nature especially those in rural areas.

MY-04	NAME(S)	Ng Kean Haur / Tan Saw Chin
ORGANIZATION		Multimedia University (MMU)
ENTRY TITLE		TIME-SENSITIVE-AWARE SOFTWARE-DEFINED NETWORKING SCHEDULING TRAFFIC SYSTEM (TSSDN-ST) IN AUTOMATION INDUSTRY

This project develops a Time-Sensitive-aware Software Defined Networking Scheduling Traffic system (TSSDN-ST) on minimizing the queueing delay in Cyber Physical System (CPS) in automation industry for supporting Industrial 4.0. A new proposed complexity-aware TSSDN-ST algorithm attains 100 times faster performance in the transmission schedule while maintaining the quality of scheduling.

MY-05	NAME(S)	Cheng Chi Qin / Dr. Tan Saw Chin / Assoc. Prof. Dr. Lee Ching Kwang / Prof. Zulfadzli Yusoff / IR Rizaludin Kaspin
ORGANIZATION		Multimedia University (MMU) / Telekom Malaysia (TM) Research & Development SDN BHD
ENTRY TITLE		Attack-aware Recovery Controller-Link-Switch Cost Minimization Placement in Software Defined Network

In this project, we proposed and developed an attack-aware recovery placement scheme in reducing the network planning cost in the configuration of controller, switch, link and backup controller as well as providing uninterrupted service for Software-defined Networking (SDN) by deployment of backup controller (BC) placement. Our invention generates array of BC combinations in short time and the generated BC is connected to a node as a replacement in the event of malfunction that occurs due to attack and failure. The proposed heuristic algorithm demonstrated a significant decrease in computation time required to produce distinct combination of controller by 99.25%.

MY-06	NAME(S)	DR. SHARMINI GOPINATHAN / PROF. DR. MURALI RAMAN / DR. KANESARAJ RAMASAMY
ORGANIZATION		MULTIMEDIA UNIVERSITY MALAYSIA
ENTRY TITLE		GAMIFIED TEACHING STRATEGIES FOR THE 21ST CENTURY

Education is the tool to change the world, a notable quote by Nelson Mandela has opened many avenues to where and how education is delivered. The revolution of digitization and Industry 4.0 has spurred the method of teaching and learning into a very different level. The rise of blended learning in education, is a notable acknowledgement. It is all about leveraging the best teachers, content, technologies and systems to offer the education for his generation of students. Hence, the need to transform the way teaching and learning using blended learning becomes a necessity in all levels of education.

MY-07	NAME(S)	Ts. Dr R. KANESARAJ A/L RAMASAMY / Prof Dr. Ho Chin Kuan / Ts. Dr Ho Chiung Ching / Dr. Intan Soraya Rosdi / Dr. Ruzanna Ab Razak / Dr. Nurazlin Mohd Fauzi / Venushini Rajendran / Amar Bin Lokman
ORGANIZATION		Multimedia University, Cyberjaya, Malaysia
ENTRY TITLE		Smart Toilet: IoT Technology for Resource Optimization & Digital Lifestyle

Smart Toilet is an integrated system with the Internet of things (IoT) and cloudbased technology which is specially designed for a smart building system implementation as well as a stand-alone system. Its features enable data capture on toilet usage for effective prediction on the procurement and maintenance of toilet peripherals. Tracking of toilet usage frequency and real-time “user cleanliness rating” also enables maintenance managers to plan for the optimization of their cleaning resources. Real-time data collected on toilet usage is also channeled to a Smart Toilet app to help provide live updates on toilet occupancy status to individual app users.

MY-08	NAME(S)	FARHANI BINTI MOHAMAD / MOHD YUSNORARIFF BIN MOHD YUNOS / AHMAD AFZAN BIN MOHAMAD BAKRI / NOOR SHAMIZA BINTI OTHMAN / EMI AZREENA BT ABD GHANI
ORGANIZATION		JABATAN KERJA RAYA MALAYSIA
ENTRY TITLE		A MOBILE LEAVES COLLECTOR & SHREDDER COMPLETE WITH COMPOSTER (V-DER)

V-Der is a machine that combines all the landscape cleaning until composting process. The typical process takes 12 steps to complete the whole process from cleaning, blowing, collecting and the waste will send to landfill site. However, V-Der manage to complete this operation plus compost the garden waste for 6 steps only. V-Der will vacuum and shreds all the dry leaves collected and mixed it up with effective microb (EM) enzyme so the garden waste will be reproduced as a compost. V-Der is an environmental friendly solution to preserve of landfill site, produce organic compost and promotes green lifestyle.

MY-09	NAME(S)	LAW SIE SIEK / DANIEL ANAK DENNIS / NURNAZIHA BINTI HASMADY / FORINNA LANITY ROSINI / NATASHA AMBER ALEEYA BINTI ABDULLAH
ORGANIZATION		SMK RIAM MIRI
ENTRY TITLE		YUCAVA

Plastic spoon take about 1000 years to decompose in landfills and contribute to land, water and air pollution. Our objectives is to produce biodegradable Yucava spoons which made from Cassava. Yucava can be use as the organic fertiliser that produce marconutrient and micronutrient such as calcium, iron, manganese, phosphorus and the potassium to the soil that needed by healthier growth of plant. Yucava spoon is green technology that is enviroment friendly, to overcome land, water and air pollution and will the best resolution to reduce the uses of plastic spoons in the world.

MY-10	NAME(S)	MOHD AZIZI ABDUL RAHMAN / DIMAS ADIPUTRA / SAIFUL AMRI MAZLAN / WIRA JAZAIR YAHYA / MOHD HATTA MOHAMMED ARIFF / AHMAD MUHSIN ITHNIN
ORGANIZATION		ADVANCED VEHICLE SYSTEM GROUP
ENTRY TITLE		PASSIVE CONTROLLED ANKLE FOOT ORTHOSIS

The present invention relates to an ankle-foot orthosis (AFO) which the joint stiffness can be controlled passively using magnetorheological (MR) brake. Thus, the invention is called as passively controlled ankle-foot orthosis (PICAFO). The PICAFO as an improvement of the conventional AFO has variable ankle stiffness, which can be controlled according to the needs such as low, moderate, and high stiffness. Because of this, the PICAFO can be used in wide application, which is not limited only to post-stroke rehabilitation scenario.

MY-11	NAME(S)	Ahmad Hadi Mohamed Rashidi / Mohd Radzi Abd Hamid Md Nasir Md Noh / Siti Salihah Mohd Sendek / Mohd Zaki Hassan
ORGANIZATION		National Hydraulic Research Institute of Malaysia (NAHRIM) / Ministry of Water, Land and Natural Resources (KATS)
ENTRY TITLE		NEXCOM BLOCK – NAHRIM Coastal Protection Erosion and Beach Expansion Block for Muddy Coast

NEXCOM Block is an innovative coastal protection structure for muddy coast. The functions are to protect the shore from erosion and provide beach expansion mechanism via natural sediment accumulation. Compared to conventional armour rocks or concrete blocks for shoreline protection, NEXCOM provides better environmental friendly solutions. It is made of composite material mixed with recycled plastic waste. Existing available on-site sediment is used for hollow sections fill. This leads to faster completion time, easier handling, less construction material, equipment and machinery hence reducing environmental adverse impact. Within few months, it also provides suitable condition for mangrove replanting and growth.

MY-12	NAME(S)	WONG ZI NING / CHWA KIA WAY / POOK SOW YEE
ORGANIZATION		MULTIMEDIA UNIVERSITY
ENTRY TITLE		SPRINTLA

Align with Industry 4.0, we have invented an online printing platform (Sprintla.com) for automating the printing jobs. This platform digitalises the printing industry by matching the printing service providers and the end users (mainly are university students). The users can upload documents, select printing preferences, choose the preferred printing shop nearby their location, and make payment online via our platform. On the other hand, the printing service providers can also automate their printing service and organise/monitor their business in more systematic way.

MY-13	NAME(S)	THINAKARAN NARAYANAN
ORGANIZATION		HIGHER NATIONAL YOUTH SKILL INSTITUTE SEPANG
ENTRY TITLE		SOUND AID FIRE EXTINGUISHER (S@FE)

Fire is a particularly feared hazard in confined enclosures such as in spacecraft and others. Therefore a fire extinguisher is very important equipment in spacecraft. Unfortunately existing fire extinguisher was using chemical compound which is dangerous. Therefore a new fire extinguisher method is needed to overcome this problem. In this paper we proposed a new methods using sound wave to extinguisher fire. Our method was using a speaker and a Bessel horn waveguide to focus the sound wave to overcome the fire energy and thus put the fire down. Using Bessel horn waveguide we can focus the sound wave energy and amplify its energy at about 6.3 dB average at every frequency. Also using this method we can extinguish fire at 30 Hz and 40 Hz frequency with fire energy 2926 joule.

MY-14	NAME(S)	NATALIE GITUEN LISO / MACRYAEN GHANEY ANAK JAWIE / LAW ZHE YEN / LAW SIE SIEK / FORINNA LANITY ROSINI
ORGANIZATION		SEKOLAH MENENGAH KEBANGSAAN RIAM
ENTRY TITLE		TBORNEO

MSG is a flavour enhancer that is made from fermentation of glutamic acid which requires a high cost, high maintenance and labour but some people are sensitive to MSG. Our objective is to produce TBorneo product which made from Tubu leaves as an alternative way to replace MSG as a flavour enhancer, moreover to reduce high operation and labour costs of MSG. TBorneo is made from Tubu leaf, scientifically known as Pycnarrhena Tumetacta due to its various nutrition such as potassium, phosphorus, calcium, magnesium, iron, copper and zinc.

MY-15	NAME(S)	Ong Lee Yeng / Leow Meng Chew / Koo Voon Chet / Lau Siong Hoe / Low Chuan Chuan / Steven Wong Sue Hong
ORGANIZATION		Multimedia University
ENTRY TITLE		**Unified DOOH Targeted Advertising System**

This invention aims to design and develop a new DOOH targeted advertising system that provides a bridging platform between advertisers and prospective customers. Advertisers can customise advertisements according to their targeted group of customers based on a selection of physical characteristics from the facial appearance while receiving the response analysis from the engaged customers. A hybrid advertising with feedback mode will be able to reduce the cost of marketing and increase the impact of converting the advertisements impression to actual sales. The trial-run is conducted for 2 months to test the usability and cross-validate with audience.

MY-16	NAME(S)	KARTHIKGESAN A/L SANTHARASEKARAN / SUFEE HASIF SAZA BIN SAIFUL / LOGAN RAJA A/L MUNUSAMY / SHARVIN A/L NATHAN / AMIRUL AMMAR BIN JUHARI
ORGANIZATION		MAKTAB RENDAH SAINS MARA KUALA KUBU BHARU
ENTRY TITLE		**ECOSEGAR - ENVIRO PUMP**

ECOSEGAR-ENVIRO PUMP is an innovation of mobile pump creation technology that can be used continuously by using motorized exhaust smoke. This innovation is very cheap and easy to use. It is technological innovation easy to use when pumping emergency tires and technology is easy to pump small appliances such as balls, balloons and so on. Equipment used is PVC pipe, glue, and small pipe hose to pump the tire. This simple tool can be brought anywhere and easily stored in the vehicle.

MY-17	NAME(S)	Teachers and Students Team from SMK ARAU
ORGANIZATION		SMK ARAU, PERLIS INDERA KAYANGAN
ENTRY TITLE		**Arau Buddyz Team: CAT FOR Help Others**

There is more to life than money. Parents nowadays are being sucked by a vortex called “work”. Day and night, they work hard to support their family. These parents often lose track of time and forgot to live. Forgot about their families. It’s true that is affects everyone. Even more so teenagers. Teenagers are at the peak of puberty and is experiencing hormonal changes. Teenagers are more prone to stress in this time of their life and is in need to a lot of attention. Because of the lack of a parental aura and care, these teenagers tend to become rebellious Thus, through creative art therapy, we aim to decrease the rate of rebellious and stressed teenager. Art is an excellent medium in which someone can express their feelings because art is something open and there is no wrong answer. We can express whatever we want on an empty canvas.

MY-18	NAME(S)	ASMA’ BINTI AHMAD / MUHAMAD DOM BIN AHMAD
ORGANIZATION		SMK ARAU, PERLIS INDERA KAYANGAN
ENTRY TITLE		**CARRIER COUNSELLING WEB BLOG AND HISTORY SUBJECT APPLICATION IN ANDROID PHONE**

Nowadays, Guidance and Counseling Services is a very important service in helping field especially at school. Hence, we was set up educational web blog: http://cgkaunseling.blogspot.my. It is as a learning aid for students. In this blog, as providing a medium of counseling education at high school level. This blog provided a carrier education after main public examination in Malaysia. For example, this blogs includes new about the latest news on application to Public Higher Education University, Scholarships, Education Loans, Learning Skills Tip, Skills Higher Education College and other matters relating to schooling and adolescents.

MY-19	NAME(S)	YOGESWARAN SELEAPPAN / AZHAR BIN ABIDIN / SHARIDA BT MOHD SHARIF / HAIRUL NIZZAT BIN BAHRIN / WAN AHMAD JAILANI BIN WAN NGAH
ORGANIZATION		CENTRE FOR INSTRUCTOR AND ADVANCED SKILL TRAINING (CIAST)
ENTRY TITLE		**TVET INSTRUCTOR ePROFILING SYSTEM (TiPS)**

TVET Instructor eProfiling System (TiPS) is an online database system developed for TVET instructors. This project aims to identify the TVET instructor's competence gap in a systematic approach so that planning and implementation of proper and structured training can be performed. The main objective of this project is to establish a database system related to TVET instructors competency profile in a systematic approach. Second, to measure TVET instructor training needs in a structured approach with an effective training cost and third to design an effective TVET instructors training & development plan.

MY-20	NAME(S)	Hasfalina Che Man / Muhammad Nur Aiman Bin Uda / Zamri Ishak / Faridah Binti Salam / Uda Bin Hashim
ORGANIZATION		Universiti Putra Malaysia (UPM) / AMR Environmental Sdn Bhd
ENTRY TITLE		**SPCE for Tungro Disease Detection in Paddy Plantation**

Conventionally, the farmers detect rice tungro disease by visual observations, however it is difficult and not reliable to identify the symptoms through visual due to the difficulty to differ with non-pathogenic disorder such as nutritional deficiencies, excess water after drought or insect injury which cause similar symptoms. Therefore, the detection of Tungro disease requires a fast, simple and sensitive method compare to the current methods of detection which are tedious and time consuming. Thus, this invention provide tools to for RTBV and RTSV detection at early detection of growth of rice plant area. The SPCE tools able to provide direct signal generation with real-time monitoring and suitable tool for continuous monitoring of infected area.

MY-21	NAME(S)	**Prof. Dr. Fouad Hussain AL Bayaty / Dr. Mohd Faizal Hafez Hidayat / Assoc. Prof. Mahyunah Masud / Dr. Farha Ariffin / Mr. Mazli Bonit**
ORGANIZATION		CENTER FOR PERIODONTOLOGY STUDIES FACULTY OF DENTISTRY, UNIVERSITI TEKNOLOGI MARA, CAMPUS SG BULOH
ENTRY TITLE		**An Innovative dental model for preclinical non-surgical and surgical exercise in periodontology for under and postgraduate students in the Faculty of Dentistry, UiTM**

The objective of this project was to fabricate a dental teaching model for preclinical non-surgical and surgical exercise in periodontology to trainee students in acquiring these skills. Clear epoxy purchased from the local market was used to prepare the model teeth and base. Pink silicone base was used to prepare the gum around the teeth to simulate the normal and diseased human gum. The dental model was given to 11 postgraduate students, to performed non-surgical and surgical procedures. A questionnaire was distributed to evaluate their feedback. Results showed positive feedback, which justifies the fabrication of these teaching models.

MY-22	NAME(S)	**SHREYANS DAS**
ORGANIZATION		MAZ INTERNATIONAL SCHOOL
ENTRY TITLE		**FIRE FIGHTING ROBOT**

This firefighting robot is used to detect small fires and suppress them rapidly. Fire detections are done by sensing products resulting from fires such as smoke, heat, infra-red radiation or gas.

MY-23	NAME(S)	**SIDHARTH RAJ PILLAI / J. ARVIND GANESH / DAKSHAYANIE A/P R. VELLAVAN**
ORGANIZATION		G-ROBOTECH TRAINING & CONSULTANCY
ENTRY TITLE		**ULTIMATE SMART SAFETY CAR**

This product consists of three life-saving ideas combined into one ultimate smart safety car. The first idea is to save lives by implementing a jammer to block the phone signal. There will also be a LCD and a buzzer to catch the attention of the user. This is to prevent explosions in petrol stations. Next we will prevent germs entering the car by implementing UV light in the air-conditioning system.

MY-24	NAME(S)	**Rohaya Latip / Chong Mien May / Hamidah Ibrahim**
ORGANIZATION		Universiti Putra Malaysia
ENTRY TITLE		**ExpoUni: File Splitting Technique for Big Data**

The mathematical model embedded in the Splitting technique at the server has speedup the transmission at 9.86% lesser for the upload time, and an average of 12.24% lesser for the download time with 100% accurate for the medical data transmitted. Prototype called ExpoUni assist medical experts and lab technicians to retrieve big data such as echocardiogram, MRI and Citi Scan in high speed network at their desk using varies end user devices such as tablets and mobile devices. Our ExpoUni technique had overcome the delay where ExpoUni initial provisioning delay results is 26.23% lesser compared to Uniform Splitting Technique and 11.62% lesser compared to Fibonacci Splitting Technique which these two techniques are most popular splitting techniques.

MY-25	NAME(S)	**JAIYANESH SELVAKKUMAR / EASHHWAR A/L SENTHILNATHAN / ARUVIN SANTHIAGOO ANDRO / NISHAL NAIR**
ORGANIZATION		G-Robotech Training and Consultancy
ENTRY TITLE		**Smart Fire Box**

Research shows that fire accidents in houses are mainly caused by the gas leakage in LPG cylinders. S-firebox is able to detect the leakage and warn the house owner by sending an alert message to the owner's phone. In case of fire, fire extinguisher inside the firebox will be activated automatically.

MY-26	NAME(S)	**Mohd Hafiz Zawawi / Ahmad Zhafran Ahmad Mazlan / Mohamad Aizat Abas / Mohd Remy Rozainy Mohd Arif Zainol / Nurul Husna Hassan / Mohd Rashid Mohd Radzi**
ORGANIZATION		Universiti Tenaga Nasional
ENTRY TITLE		**Hydropower Structure Risk Assessment System**

Chenderoh Dam is the oldest hydroelectric dam and power station in Malaysia thus the integrity of the structure is questionable due to long exposure to high pressure of water and high velocity of discharge. Detail study on the structure integrity due to fluid structure interaction for Chenderoh Dam is vital to ensure efficiency, reliability and safety of the dam. Therefore, a risk assessment system has been developed to identify structure part with high risk of stress and deformation and provide guideline on operational condition of spillway and penstock in ensuring structural dam integrity to the dam owner.

MY-27	NAME(S)	**Mohamad Anuar Kamaruddin / Mohd Remy Rozaini Mohd Arif Zainol / Mohamed Farid Murshed / Shahbahr / Faris Aiman Norashiddin / Rasyidah Alrozi**
ORGANIZATION		Universiti Sains Malaysia
ENTRY TITLE		**ICC: Solution to More and More Polluted Water**

This invention utilises the mineralization technology of IONIC nano copper sulphate pentahydrate ($CuSO_4.5H_20$) in the treatment of wastewater. Targeting specific microorganisms, it damages the cell wall of the bacteria, alters the permeability and protoplasm colloidal nature of the pathogens, and inhibits the enzymic activity in pathogens.

MY-28	NAME(S)	Ahmad Zhafran Ahmad Mazlan / Tan Sak Jie / Wan Mohd Amri Wan Mamat Ali / Mohd Remy Rozainy Mohd Arif Zainol
ORGANIZATION		Universiti Sains Malaysia
ENTRY TITLE		**Inertia Piezoelectric Actuator Based Suspended Handle for Power Tools Application**

This is a new inertia type piezoelectric actuator-based suspended handle for the power tools application which has been developed based on the P010.00 piezoelectric stack actuator. This new system has reduced the complexity of the previous suspended handle and become more applicable. The experimental work has been conducted for both frequency independent and dependent excitation between power tools operating frequencies of 100 – 500 Hz and the maximum of 35 % vibration attenuation has be achieved. This result proved the applicability of the suspended handle which contributes in protecting the workers from the high vibration exposure when using the power tools.

MY-29	NAME(S)	RASVEEN RAJA MOHAN / SIDDARTH GOBINATHAN / SAI VISHNU MOHAN DASS / NAVVENAA KRISHNAN / SANGKERI GANNASEN
ORGANIZATION		SJK(T) LADANG KINRARA
ENTRY TITLE		**HEALTHY BAR (using Natural Ingredients)**

Growth of healthy food such as Energy Bars on the market increased consumer awareness about healthier way to eat. But how healthy are they? Analysis revealed that they are high in sugar and fat. Is there an alternative? Natural plants and grains consist of many nutrients. This experiment measures the amount of energy stored in natural ingredients. The results show that these ingredients are high in calorie. Healthy Bar made of natural ingredients can be an alternative to the readily available off the shelf.

MY-30	NAME(S)	THINESSWARAN MUNIANDY / DR. SUHAZLAN BIN SUHAIMI
ORGANIZATION		SULTAN IDRIS EDUCATION UNIVERSITY
ENTRY TITLE		**AGRO-KIT : LOW-COST AQUAPONICS INTERNET OF THINGS (IoT) EDUCATIONAL KIT FOR CHILDREN**

Food wastage is one of the primary and common problem found in this modern society. In Malaysia, the amount of food wastage is enough to feed 12 million people three times a day. The main reason behind it was the attitude of consumer which influences tremendously the whole food cycle. One effective way to curb this problem is to change consumer's attitude which develops during the early years of childhood. In this research we introduce Agro-Kit which accommodates children on how to grow herbs; i) indoor, ii) aquaponically and iii) Internet of Things. By this, Agro-Kit helps children to change their attitude by widening their knowledge about food production to stop food wastage in the future.

MY-31	NAME(S)	SARVESHINNI D/O KAVIARASU / SASRIKKA D/O SATHIAN / TALYSSA MATHEWA D/O THAYALAN / RASHMY DHEVI D/O RAVIE / SASHMITHAA D/O THIRAVIYAM
ORGANIZATION		SJK(T)TAMAN TUN AMINAH
ENTRY TITLE		**EGG SHELLED NEEM CANDLES**

The present article is an attempt to exhibit the possible application of eggshell in Egg-Shelled Neem Candles. Egg shell is made almost entirely of calcium carbonate crystals. It is economical to transform the eggshell waste to create new values from these waste materials. Egg shells are reused to create Egg-Shelled Neem Candles. Kitchen towel rollers are reused as candle holders. Neem is added to create herbal aromatherapy candles. Egg-Shelled Neem Candles release continuous stream of vaporized Neem raw oil into the air as they burn. The vapour has the ingredients that make Neem therapy so effective and acts as insect repellents.

MY-32	NAME(S)	KAVINNAYAN MOHANADAS / PRATISHA PREMNATH / ASHWENA RAMU / MRIDHUSHAA NAIR MURALIDHARAN / VARSHINI GANESAN
ORGANIZATION		SJK(T)TAMAN TUN AMINAH
ENTRY TITLE		**TEO ECO SOIL**

TEO ECO SOIL is a product of tea leaves waste, egg shells, sugarcane baggase and oil palm waste. This soil has high capacity to plant growth. TEO ECO SOIL makes an excellent growing medium for hydroponic and container plant growing. TEO ECO SOIL has natural anti-fungal properties. It is 100% organic product. It is a soilless blend of ingredients used to grow plants. TEO ECO SOIL is the ideal growing medium for containerized plants.

MEXICO

MX-01	NAME(S)	Emmanuel Campos Genaro / José Israel Romero Flores / Thania Monserrat Montoya Olmedo / Leonardo Tonatiuh González García
ORGANIZATION		General Systech / Instituto Politécnico Nacional (IPN)
ENTRY TITLE		**HARVESTT ECOS v2 with AI**

HARVESTT is an agrotechnological system, which implements innovations in cultivation techniques, integrating technological mechanisms that can increase the development and growth of plants, revolutionizing classical agronomy, this poses smart greenhouse and germinator that through certain humidity, temperature and photoperiod controls It serves to test, analyze and carry germination under optimal conditions. In addition to having specialized software for a deeper study, adding concepts of fuzzy logic for prediction and mathematical analysis for mass crops, such as allowing the development of plants in urban communities taking into consideration the precautions and recommendations that are indispensable in science of agronomy.

MOLDOVA

MD-01	NAME(S)	Adelina Bivol
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Nutz and Elza

Nutz and Elza - orthopedic nut-based, used in the back during the lessons, is comfortable in operating at school, absolutely healty.

MD-02	NAME(S)	Levandovici Nichita
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Mop-Flat

Innovation cleans the floor in the house, it is intended to be used especially for the elderly persons or for those with motor problems, innovation helps and performs the housewife's work in the house by working desolventy.

MD-03	NAME(S)	Scortescu Marius-Silviu
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Point-Sale

Multifunctional advertising painting by Mall Info-Stand it is a pad that promotes products in 3 directions, front, back and back- in, also can't be used for open spaces.

MD-04	NAME(S)	Florensia Balaur
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Bibet-Cosmetic

This is a cosmetic support placed in the car that takes little place and is in miniature, is very convenient and useful for ladies, gentlemen also it is removable and useful every day.

MD-05	NAME(S)	Agrici Gheorghe
ENTRY TITLE		Back –Viv

The purpose of work requires the use of solar energy placed on an electrical device that automatically loads the device, author demonstrate the ability to save electricity energy in exchange for solar energy.

MD-06	NAME(S)	Nicu Frumusache
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		School Admission Tracking

This IT/ project where author reserch presents students' grades also and semestrial result and the programe show the yearly results, that are identified in this platform. The aims is to identify the child with absences and school failure.

MD-07	NAME(S)	Barbuta Valeria
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Deco - Point

This is a decoration from recyclable products, glass, plastic, author made important point to decorate house by original pieces for Human- Ego.

MD-08	NAME(S)	Ursu Cristina
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		MaGno-glasses

This innovation are special because this type of glasses helps the person avoid stress and fatigue during the day, treats head migraines, relaxes, improves peripheral circulation of blood, by medical magnets.

MD-09	NAME(S)	Cristina Bivol
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		Paint-Light

Sunlight painting, used at night, also it is used as lighting the room in the evening children rooms who are afraid at night and decorative work- art in the house.

MD-10	NAME(S)	Muntean Sandu
ORGANIZATION		IPLT,,Universul,,
ENTRY TITLE		**Robo-wood**

Wooden toy works with solar batteries, is also used at night like a lamp. The wheels of toy illuminate the room from solar batteries.

MOROCCO

MA-01	NAME(S)	Brahim El Bhiri / Adil SALBI / Maryam Lfkih
ORGANIZATION		EMSI Group
ENTRY TITLE		**Smartraffic**

The SmarTraffic is a decentralized system based on the radio frequency identification and the image processing. It identifies vehicles that are in the state of emergency (VVIP, firefighters, ambulance, police ...) and controls the traffic light in a dynamic manner. If it is an urgent case (rescue of a critical case), an exchange of information is carried out for the control of the PLC that controls the traffic light (green light). The camera and by using our algorithms of image processing we compute the traffic and controls dynamically the duration of the traffic light.

MA-02	NAME(S)	Oussama Rholam / Mohamed Tabaa / Brahim Chouri / Safa Saadaoui
ORGANIZATION		EMSI Group
ENTRY TITLE		**Smarty Factory 4.0**

This invention concerns a multi-interface, multiprotocol industrial communication device (Gateway) that allows data to be acquired in the form of Modbus frames and analog/digital inputs oriented by instructions configured through the TFT interface. It process the data received from equipment linked to the type of ModBus (RTU, ASCII, TCP/IP) configured, in order to convert adapt and transmit the frame to the chosen wireless solution whether it Zigbee, LORA, WiFi, Bluethoot, NB-IoT depending on the operating area and range.

MA-03	NAME(S)	Majid EL BOUAZZAOUI
ORGANIZATION		OFEED
ENTRY TITLE		**Analog to Digital Converter to improve 5G networks**

Data transmission requires several processing operations throughout the telecommunication process between two users. The first step is to digitize the data to be transmitted since the information is not available as digital format in the real environment (voice, images, temperature, etc.). This digitization step therefore has a direct impact on the speed of transmission, whatever the technology used on the telecommunication network. With the arrival of 5G, digitization with current technologies is no longer sufficient to reach the level of speed required. Thus, the purpose of this invention is to provide a high-speed Analog to Digital Converter (ADC) in order to speed up the transmission of data over the 5G telecommunication network.

MYANMAR

MM-01	NAME(S)	Prof Dr. Khin Maung Ohn / Dr. May Honey Ohn / Dr. Chan Zhi Wei / Dr. Aaron Gerarde Paul / Prof Dr. Urban John Arnold D'Souza / Prof Dr. Shahril Yusof
ORGANIZATION		Faculty of Medicine & Health sciences, Universiti Malaysia Sabah
ENTRY TITLE		**Novel Plaster of Paris (POP) Roller (NOPORO), Evolving the Future of POP application**

Plaster of Paris (POP) is commonly used in fracture treatment. Unskillful application of plaster cast can cause uneven high pressure points resulting pressure sores in the skin. The objective of the innovation is to design Novel POP Roller or applicator NOPOROTM which can minimize the high pressure points and prevent the plaster cast complications. The simple roller painting principles can be able to not only accelerate POP procedure time but also easy to perform by any medical professionals even the medical students. Check the project in the following link: https://youtu.be/29POlrggz8A

NETHERLANDS

NL-01	NAME(S)	MOHAMAD WALID KORDI
ORGANIZATION		MINISTRY OF EDUCATION
ENTRY TITLE		**The effect of e-banking quality on customers' satisfaction in develop counties**

The problem of research lies in the effect of the quality of the electronic banking services provided by the bank on the satisfaction of customers as the hypotheses were necessary and confirmed through a set of questions that included in the questionnaire and interviews to know what the bank offers to customers in terms of electronic services whether if they are characterized by ease of use, confidentiality, safety and saving time which will lead to customer confidence. The research methodology was followed by the onion research model based on the scientific research and the scientific research steps that depend on the quantitative deductive approach to arrive at and verify the data, information and hypotheses, and will provide poor people problems around the world if we apply the new approach of my e-banking program

PERU

PE-01	NAME(S)	Luis Carlos Alberto Delgado Mercado
ORGANIZATION		National University San Antonio Abad of Cusco
ENTRY TITLE		**Device for transportation and rehabilitation of people**

The transport and rehabilitation of people is a university project that was presented in 2017 to the science and technology competition organized by the regional government of Cusco in Peru, in 2018 was presented to the competition HULT PRIZE 2018 of social enterprises, in it I classify the regional competition of Quito Ecuador, in 2018 it was approved by the intellectual property office of Peru to be patented, after it participated in Innotech Taiwan where it received the bronze award, in 2019 won the interuniversity competition of Cusco of innovative projects of high impact organized by the main universities of Cusco.

PHILIPPINES

PH-01	NAME(S)	RONIE MORATO ER-ER / JASSTENE NICOLE C. ER-ER / ROWENA E. CENA / MANUEL R. DONO
ORGANIZATION		Filipino Inventors Society, Inc.-Surigaonon Chapter
ENTRY TITLE		**ROONHAIR PHYTOIONIC TOPICAL HAIR GROWTH COMPOSITION**

The present study relates to roonhair phytoionic topical hair growth promoting composition of a plant-derived oil compound of fatty acids; tocotrienol, ceramides, enrich with pharmaceutically available vitamin E, vitamin A, Phildepthsea minerals, palmitic acid, glycine max oil, maize, cocos nicefera and lemongrass oil for treatment of hair loss and conditioning of hair which would be applied with a gentle massage on the scalp area during night time.

PH-02	NAME(S)	ZALDY D. ALIMA / NATHALIE HAILEY P. URIARTE / BEN HENRICH D. BUTAD / ANGEL RAEE C. MOMO
ORGANIZATION		JACINTO P. ELPA NATIONAL HIGH SCHOOL
ENTRY TITLE		**SAGIP:(Smart Assistant device for Geo-atmospheric Intervention Protocol) A Mobile and Portable IoT-based Weather Station**

SAGIP (Smart Assistant device for Geo-atmospheric Intervention Protocol) is a device which has a solid acrylic casing (red-color), measures 16 cm x 16 cm and has a net weight of 0.4 kg. The different weather sensors are placed strategically outside the casing which has multiple features. The SAGIP system uses WIFI to send weather data to a website every 2 minute interval. The data are received by a database with multiple tables and are displayed in a simple website so that anyone who has internet connection can view the latest readings even with slow internet speed.

PH-03	NAME(S)	Marybeth Flonia O. Sato / Benito A. Baje / Estenard Jhay Tuazon / Julian Christopher Maypa
ORGANIZATION		Philippine Science High School – Central Visayas Campus
ENTRY TITLE		**LOMBOY: Black Plum Herbal Powder**

More than half of Filipinos cannot afford medicine. Affordable and quality of medicines should be prioritized. Black Plum Herbal Powder were produced from the fruit of the *Syzygium cuminii* tree in the Philippines. LOMBOY product was tested in the laboratory and was found out to have antibacterial property against E. coli with a zone of inhibition of 10.82 ± 0.22 mm. Black plum fruit is also known to contains large amounts of anthocyanin that potentially serve as a cure for stomachache, cancer, diabetes and cardiovascular diseases which can be afforded by the Filipinos.

PH-04	NAME(S)	Raphael David B. Condor / Benito A. Baje / Avi Conerose Therese S. Malana / Kyra Jillian L. Namor
ORGANIZATION		Philippine Science High School – Central Visayas Campus
ENTRY TITLE		**nanoHEAL: A New Organic Colloidal-based Wound Dressing Material using Cellulose Nanofibers from Cardaba Banana Peels**

nanoHEAL is an innovative product that kills the bacteria from infecting the injuries caused by minor daily accidents and help aids faster in natural wound healing. This green product contains cellulose nanofibers (CNF) derived from Cardaba banana peels. Wound dressing properties of this product were tested preliminarily in terms of antibacterial assay and blood coagulation test. Field Emission Scanning Electron Microscopy (FESEM) showed the nanostructure of the synthesized CNF with diameters ranging from 20 to 42.92nm. Results further suggest that CNFs inhibit the growth of S. aureus, a skin infection causing microorganism. Data further revealed that the colloidal form CNF significantly reduce blood clotting time comparable to the synthetic commercial liquid agent. Data indicates the potential of Cardaba peelings based CNF as wound dressing substance for medical applications.

PH-05	NAME(S)	ELMINA Q. PARAS
ORGANIZATION		Manuel Roxas Senior High School/ Manila Young Inventors Association
ENTRY TITLE		**A NOVEL BIO-LUBRICANT FOR MOTORCYCLE ENGINE FROM *CANARIUM LOZUNICOM* SAP (PILI NUT SAP)**

This study determined the possibility of using elemi oil with some other organic oils to become an eco-friendly engine lubricant. The different properties and characteristics were tested, sulfur content: 3.12%, viscosity index: 157 and the carbon residue is not detected. The results of these tests were compared to the EPA standards for sulfur content, biodiesel standard for the carbon residue content and SAE grade for the viscosity. All the tests were within the standards and could be assess as a good potential engine lubricant.

PH-06	NAME(S)	**SALAZAR, MARIA AUBREANNA BEATRIZ B / LEGASPI, JULIANA MARI V / MASAYES, JANNAH M / CRUZ, MITCH DIANNE R. / LUNA, CHRISTIAN L.**
ORGANIZATION		TAGAYTAY CITY SCIENCE NATIONAL HIGH SCHOOL
ENTRY TITLE		**Hypoglycemic Activity of Robusta Coffee (*Coffea canephora* Pierre ex. A. *Froehner*) Silverskin Ethanolic Extract on Alloxan – Induced Type I Idabetes in SWISS WEBSTER MICE (Mus musculus L.)**

Diabetes mellitus is an important public health concern worldwide. The objective of this study was to determine the hypoglycemic activity of Robusta Coffee (*Coffea canephora* Pierre ex A. Froehner) silverskin ethanolic extract on Alloxan-induced Diabetes in mice (Mus musculus L.). In this study, the hypoglycemic effect of ethanolic extract of *C. canephora silverskin* compared to distilled water and Glibenclamide 10 mg/kg was evaluated using Alloxan-induced diabetic mice. It was found out that *C. canephora* silverskin ethanolic extract showed significant effect in lowering fasting blood glucose levels on diabetic mice. Therefore, Robusta coffee silverskin ethanolic extract can be an effective hypoglycemic substance.

PH-07	NAME(S)	**Granada, Christian Andrei C. / Villaluz, Ryan Joseph D. / Leonida, Stacey Meryl A. / Luciano, Alyanna Grace C.**
ORGANIZATION		Tagaytay City Science National High School
ENTRY TITLE		**Compressive Strength of Cylindrical Concretes with Coconut Shell, Egg Shell, and Bamboo Sticks as Aggregates**

Green Concrete is a big help to solve industrial waste problem and lessen the environmental effects of concrete. Three concretes with different aggregates; coconut shells, egg shells and bamboo sticks, were made by the researchers. The researchers followed ASTMC31/C31M Standard Practice for Making and Curing Concrete Test Specimens in Field. The amount of all the materials were controlled on all the trials. The researchers tested its Psi and Mpa and concluded that the aggregates' durability were effective on the production of cylindrical concretes, but egg shell is the most suggested with highest compressive strength then coconut shells then bamboo sticks.

PH-08	NAME(S)	**Baluyo, Jeremy A. / Sumpay, John Mark Nouwen S. / Villarin, Princess Willen F.**
ORGANIZATION		Philippine Science High School – Bicol Region Campus
ENTRY TITLE		**CARBON-MODIFIED PHOTOCATALYTIC POROUS CONCRETE FOR WATER PURIFICATION**

Currently, water purification systems have been developed to provide clean water sources. In this study, porous concrete and binary systems of Activated Carbon and Zinc Oxide were combined to produce a photocatalytic porous concrete capable of removing water contaminants. Methylene Blue degradation test showed that embedding Zinc Oxide and AC-ZnO in the concrete significantly increased the photodegradation rate. Using bacterial inactivation test, adding Zinc Oxide and AC-ZnO in porous concretes resulted to a significant decrease in total coliform in water. In conclusion, adding photocatalysts and AC resulted in an increase in the efficiency of porous concretes in removing water contaminants.

POLAND

PL-01	NAME(S)	**Robert CIERNIAK**
ORGANIZATION		Czestochowa University of Technology, Institute of Computational Intelligence
ENTRY TITLE		**FAST ITERATIVE IMAGE RECONSTRUCTION METHOD FOR MEDICAL TOMOGRAPHY**

A fully analytical fast iterative statistical algorithm for image reconstruction from radiation measurements obtained in medical tomography, i.e. in a Positron Emission Tomography scanner, is described in this invention.

PL-02	NAME(S)	**Magdalena Zabochnicka-Świątek / January Bień**
ORGANIZATION		Czestochowa University of Technology
ENTRY TITLE		**Method for growing the microalgae biomass**

The subject of the invention is a method for growing the microalgae biomass for use as fuel for combustion in biomass burning boilers. The aim of the solution is to develop an efficient method of biomass cultivation, which would allow using municipal wastewater as a substrate, and for feeding algae use of CO_2, obtained from combustion gases from the process of combustion of solid fuels.

PL-03	NAME(S)	**Piotr GÓRAK / Przemysław POSTAWA / Jarosław KRET**
ORGANIZATION		Czestochowa University of Technology, POLAND / Faculty of Mechanical Engineering & Computer Science
ENTRY TITLE		**Composite Lightweight Aggregates CLA – innovative and ecological approach for waste management**

The object of the invention is a lightweight composite aggregate, which in its construction uses waste polymeric materials and ashes.

PL-04	NAME(S)	**NABIAŁEK MARCIN / SZOTA MICHAŁ / OŹGA KATARZYNA**
ORGANIZATION		Częstochowa University of Technology, Faculty of Production Engineering and Materials Technology
ENTRY TITLE		**Massive amorphous alloy**

The invention is a massive ferrous-based amorphous alloy. The invented alloy consists of (at.) Fe- 65%, B- 20%, Y- 5-6%, Nb- 5% and 4-5 % Hf and is soft magnetic.

PL-05	NAME(S)	Anna Gawlak / Daniel Ziemkiewicz
ORGANIZATION		Czestochowa University of Technology, Faculty of Electrical Engineering
ENTRY TITLE		**Cup for liquids**

The invention is a cup for liquids that is equipped with Near Field Communication (NFC) module. The purpose of a project is to utilize thermal energy of the beverages for charging electric mobile devices through the NFC module. The project as invented consist of a cup and a base. At the bottom of a cup there is mounted Peltier module that is jointed with a centroidal connector.

PL-06	NAME(S)	Mariusz Urbański / Norbert Sczygiol
ORGANIZATION		Czestochowa University of Technology – Faculty of Civil Engineering
ENTRY TITLE		**Component of dissipated concrete reinforcement**

The subject of the invention is a component of dissipated concrete reinforcement that is used for concrete reinforcement, especially for reinforcement of industrial flooring.

PL-07	NAME(S)	Joanna Feder-Kubis
ORGANIZATION		Wrocław University of Science and Technology, Faculty of Chemistry
ENTRY TITLE		**Dynamic process research development for novel plant protection products**

The novel surfactants with (+)-menthol derivatives, according to the invention, affect strongly the growth of the plants and the germination process. The compounds stimulate also the synthesis of natural proteins, increase their activity and increase the resistance to adverse conditions (mainly biotic) at a much higher level than just use of plant resistance inducer such as benzothiazole. Hence, these compounds, used preventively, induce plant immunity against fungi, viruses and bacteria simultaneously. In addition, significant antimicrobial activity of the obtaining salts was confirmed.

PL-08	NAME(S)	Klaudia Wilk / Piotr Kasza / Marek Czupski / Mateusz Masłowski
ORGANIZATION		OIL AND GAS INSTITUTE - National Research Institute
ENTRY TITLE		**The composition of a foamed fluid for hydraulic fracturing**

The present invention relates to CO2 foamed fracturing fluids with addition of silica nanoparticles. A great advantage of such fluids is that much less water is needed compare to traditional fracturing fluids, causing a minor damage to the environment. The additional energy from compressed gas facilitates fluid flowback after fracturing. In addition, if the rock contains minerals sensitive to water contact, reducing the amount of water pumped into the reservoir decrease the risk of potentially damaging it as a result of clay minerals swelling and thus minimizes permeability damage which noticeably decrease the flow of hydrocarbons to the production wellbore.

PL-09	NAME(S)	Winicjusz Stanik / Michał Janeczek / Rafał Konieczny / Tomasz Łaczek / Krzysztof Sikora
ORGANIZATION		OIL AND GAS INSTITUTE - National Research Institute
ENTRY TITLE		**A biocidal - stabilising composition for biofuels**

A biocidal - stabilising composition for B10 and B20 diesel oil contains combination of active biocidal compounds (biocides) containing oxazolidine groups, compatible with oxidation inhibitors, preventing microbiological contamination of fuel and formation of a biofilm matrix, being the reason for microbiologically induced pitting. The applied surfactant with properties of highly wetting the surface of metal tanks prevents irreversible adhesion of microbes, inhibiting the biofilm matrix formation.

PL-10	NAME(S)	MA Mirosław Stecuła / M.Sc. Tadeusz Kapusta
ORGANIZATION		Przedsiębiorstwo Wdrożeniowe PRO-SERVICE Sp. z o.o.
ENTRY TITLE		**Multi-gas stationary detectors for closed garages and...and not only that**

Multi-gas, stationary CO, NO2, LPG, CNG detection systems are built on the basis of modular detectors DUOmaster, Tmaster, Qmaster. The detectors use modern, reliable electrochemical and semiconductor sensors, working with control panels or controllers in digital automation systems (RS485 bus with Modbus RTU protocol). To this day, several dozen thousands of such devices protect several thousand multi-position garages in many Polish cities, as well as in the Netherlands, Belgium and Slovakia.

PL-11	NAME(S)	Wojciech Moćko / Ewa Rostek
ORGANIZATION		Motor Transport Institute
ENTRY TITLE		**The system for determining of a material properties of alloys under an impact loading conditions**

The developed system is based on the methodology introduced by Hopkinson. The arrangement consists of elastic bars made of a steel and support. One of the elastic bars is clamped by especially designed clamping device. The clamp is the most innovative part of the measurement system. It enables to obtain very fast rising and falling edges of the mechanical elastic wave. The testing stand is able to provide a tensile curves of modern alloys under high strain rate loading conditions within range from 500/s to 2000/s.

PL-12	NAME(S)	Kamil Piróg / Marek Onichimiuk / Marek Sołowczuk
ORGANIZATION		INSTITUTE OF OPENCAST MINING "POLTEGOR-INSTITUTE"
ENTRY TITLE		**Gravel and resin cladding water purification filter**

This innovative solution consists in fixing the filter cladding on the pipe using fixing rings. Cladding filter for purification of water is made of a pipe with longitudinal perforation clad with gravel and resin filter cladding, set on the perforated pipe between two fastening rings. Cladding support system is made of two different rings of technological material. The first (lower) ring is beveled, so that its shape follows the shape of the PVC pipe sleeve. Patent application to the Polish Patent Office no: P. 426550

PL-13	NAME(S)	Michal M. Godlewski / Paula Kielbik / Waldemar Lipinski / Jaroslaw Olszewski / Anna Slonska-Zielonka / Jaroslaw Kaszewski / Julita Rosowska / Marek Godlewski
ORGANIZATION		Faculty of Veterinary Medicine, Warsaw University of Life Sciences – SGGW / Institute of Physics, PAS
ENTRY TITLE		**Multimodal nanoparticles for medical applications**

The key of invention is patented eco-friendly production of biodegradable or biostable oxide nanoparticles for cancer detection and therapy. The final product is free of Gd ions and is optimised for high contrast in fluorescence and magnetic resonance for MRI imaging, fluorescence assisted biopsy and surgery. Formulation is prepared for oral application, direct transfer and deposition in cancer tissue including brain tumours.

PL-14	NAME(S)	Kaczmarek Mariusz / Drelich Radoslaw / Pakula Michal / Witkowski Dawid
ORGANIZATION		Institute of Mechanics and Applied Computer Science, Kazimierz Wielki University
ENTRY TITLE		**System and method for non-contact quality control of flat or corrugated plate structural elements**

The subject of the invention is a system and method of diagnostics of flat or corrugated plate construction elements carried out using non-contact ultrasonic techniques based on Lamb waves, generated and received in air (without contact of transducers with the tested element). The measuring system and the method are designed for non-destructive assessment of the quality of elements made of plastics, cardboard-gypsum, fiber-cement and other. The developed technique enables detecting, assessing the size and location of defects invisible to the human eye, such as cracks, delamination, inclusions, local inhomogenities resulting from the production or storage of the examined elements.

PL-15	NAME(S)	Mikołajewski Dariusz / Prokopowicz Piotr
ORGANIZATION		Institute of Mechanics and Applied Computer Science, Kazimierz Wielki University
ENTRY TITLE		**Mobile system supporting gait analysis based on fuzzy numbers and fractal parameters**

The subject of the invention is mobile system supporting gait analysis described by remarkable features: digital reasoning based on computational intelligence, compatibility with standards of medical informatics, complexity, flexibility, easiness of development, scalability. Proposed tool is versatile and flexible, has wide spectrum of applications: reasoning concerning health status based on deviation from global gait pattern, detection of gait pathologies - screening tests, normalization of gait in relation to various reference groups, and interactive support of the measurement of temporo-spatial gait parameters (incl. children) based on recorded walking test (on/offline).

PORTUGAL

PT-01	NAME(S)	Fernando Maldonado Lopes
ORGANIZATION		Inventarium-SRD
ENTRY TITLE		**SHOCK4SHIELD**

Is essentially an electrified riot control shield, designed to provide added protection for Police and military personnel in hazardous crowd control situations. It can be used like any normal shield or activated to provide a less-than-lethal immobilizing shock by the user.

PT-02	NAME(S)	Fernando Maldonado Lopes
ORGANIZATION		Inventarium-SRD
ENTRY TITLE		**JET4BATON**

Professional Police & Army Anti-Riot Tactical Batons Exclusively designed to: *Peace Maintenance *Law Enforcement & Prison Control With incorporated Red Pepper or Tear Gas canister and Front Impact Shock Absorber System; extra protection for police and military personnel in hazardous crowd control situations, able to reach 10 meters of effective defensive range.

QATAR

QA-01	NAME(S)	Ahmed salaheldin mohamed abdelbasset
ENTRY TITLE		**Fresh life**

My idea is build aquaponic display for vegetables and allow plant to stay long time fresh also it will package vegetables in new design bags to give it to consumers to stay long time fresh

QA-02	NAME(S)	Amna Hassan Aljefairi
ORGANIZATION		Scientific Club – Doha, Qatar
ENTRY TITLE		**Smart gloves to communicate with deaf blind people**

Two double smart gloves one pair for deaf blind person and the other one for regular person. Two pairs of smart gloves, one pair works with vibration and screen other works only with screen. It consists of slow-fast mode, auto reader and e-book reader, and Bluetooth system. The idea assists people to communicate with deaf blind people.

QA-03	NAME(S)	Mohammed Uthman Mohammed Farah
ORGANIZATION		Qatar Scientific Club
ENTRY TITLE		**11.5 KW Programmable Sun Simulator System**

It consists of three Arduino MEGA2560 connected with 23 tungsten lamps 500 watt for each designed to cover the area of 80 cm X 120 cm solar panel to study the dust effective and efficiency of solar panels inside the lab. The system is able to change the resistance of the load from 0.2 ohm to 400 ohm using 45 relays connected with Arduino MEGA 2560 to select the value of load resistor automatically within 7 minutes. The intensity of light can be adjusted automatically using 16 relays connected with Arduino MEGA 2560 with four switches options. There are 16 temperature sensors using LM35 and Arduino MEGA 2560. Voltage, current and temperature can be monitored by data acquisition system to reduce the cost by using one channel out of 16. The system costs 2500 USD comparing with 150,000 USD the cost of commercial sun simulator systems.

ROMANIA

RO-01	NAME(S)	ANTONIAC Vasile Iulian / MOHAN Aurel / SEMENESCU Augustin / DOICIN Vasile Cristian / ULMEANU Mihaela Elena / CAVALU Simona / COSTOIU Mihnea Cosmin / MURZAC Roman / DOICIN Irina-Elena / SĂCELEANU Vicenţiu / MATEŞ Ileana Mariana
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**CRANIAL IMPLANT WITH OSTEOINTEGRATING STRUCTURES AND FUNCTIONAL COATINGS**

The invention relates to the structure and fastening method of a mesh implant with functional coatings having the role of osteointegration, used for cranioplasties and reconfigurations of major cranial defects. The implant made of pure Ti or a biocompatible Ti alloy with osteointegration structures, consists of two layers, one fixed and the other movable, interconverted so that translations in two perpendicular directions can be made while maintaining the fixed layer. The cells of the two layers are arranged in two directions whose intersection at any point forms a specific angle α.

RO-02	NAME(S)	BATALU NICOLAE-DAN / SEMENESCU AUGUSTIN / COSTOIU MIHNEA COSMIN / ANTONIAC VASILE IULIAN / DOICIN CRISTIAN-VASILE / AMZA CĂTĂLIN GHEORGHE / MATEŞ ILEANA MARIANA CHIVU OANA-ROXANA / CODOREAN ION BOGDAN / BARBU CĂTĂLIN-ALEXANDRU / BĂDICĂ PETRE / NEGOIŢĂ OLIVIA-DOINA
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**SEMICONSTRAINED TOTAL ELBOW PROSTHESIS MADE OF SHAPE-MEMORY ALLOYS, WITH COUPLING SYSTEM BASED ON SHAPE-MEMORY EFFECT**

The invention relates to a semiconstrained total elbow prosthesis made of TiNi biocompatible shape-memory alloys meant to replace the human elbow joint affected as a consequence of accidents or bone or joint diseases.

RO-03	NAME(S)	BATALU Nicolae-Dan / SEMENESCU Augustin / COSTOIU Mihnea Cosmin / SINESCU Ioanel / ANTONIAC Vasile Iulian / DOICIN Cristian-Vasile / CODOREAN Ion Bogdan / MATEŞ Ileana Mariana BARBU Cătălin Alexandru / BĂDICĂ Petre / GAVRILIU Traian-Stefan
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**TOTAL ELBOW CONSTRAINED-ENDOPROSTHESIS MADE OF ALLOYS WITH SHAPE MEMORY, WITH HINGE TYPE FIXATION AND COUPLING SYSTEM BASED ON THE EFFECT OF SHAPE MEMORY**

The invention refers to a total elbow endoprosthesis (implant) made of metallic with shape memory and non-metallic (polymeric) materials, meant to replace the human elbow joint, affected by trauma and degenerative joint/bone diseases.

RO-04	NAME(S)	DEMETRIAN Alin-Dragoş / SEMENESCU Augustin / CHIVU Oana-Roxana / COSTOIU Mihnea Cosmin / DEMETRIAN Camelia / MATEŞ Ileana Mariana / DUMITRESCU Silviu
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**ESO-TRAHEOSCOPE**

The invention relates to a combined instrument (eso-tracheoscope) for simultaneously approaching the two tubular organs located in the mediastinum (trachea and esophagus), allowing simultaneous and coordinated maneuvers on the wall that separates them. The eso-tracheoscope, consisting of two cylindrical bodies which are articulated between them either from the beginning or after the successive introduction into the trachea, respectively into the esophagus, solves this technical problem, because each body has a slit or window (facing each other) of sufficient size to allow therapeutic maneuvers directed to the commun eso-tracheal wall with long instruments, inserted through the two working channels.

RO-05	NAME(S)	DAVIŢOIU Dragoş-Virgil / DOICIN Cristian-Vasile / COSTOIU Mihnea-Cosmin / ULMEANU Mihaela-Elena / SEMENESCU Augustin
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**ANOSCOPE WITH ADJUSTABLE OPERATIVE FIELD**

The invention relates to an anoscope with adjustable operative field used for performing anorectal surgery. The anoscope with adjustable operative field consists of a lower cover, a top cover, an intermediary translational flange, three movable tabs, and three locking screws. The anoscope can be adjusted according to the patient's anatomy with incremental angular steps providing a variable surface of the operative field by adjusting the working diameter. The anoscope can be fixed in nine default intermediary positions and can be operated by one person, due to its innovative operating system and its ergonomic and light weight shape.

RO-06	NAME(S)	DOICIN Cristian Vasile / ULMEANU Mihaela Elena / ANTONIAC Vasile Iulian / SEMENESCU Augustin / COSTOIU Mihnea Cosmin / MITRICĂ Marian / MURZAC Roman / CHIRTEŞ Alin / DAVIŢOIU Dragoş-Virgil / DOICIN Irina Elena / MATEŞ Ileana Mariana
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**CRANIAL ENDOPROTHESIS WITH A SLIDING SYSTEM**

The invention relates to a cranial endoprosthesis with a sliding system, used to repair the traumatic defects of the skull, by the surgical procedure of cranioplasty. The cranial endoprosthesis consists of a superior sliding layer, a lower sliding layer and a fastening system, and the sliding layers are made up of mobile cells with sliding system. For assembling, the lower sliding layer is positioned in a non-sliding state, tangent to the lower surface of the skull, and for actuating and sliding the movable cells of the lower layer, an actuator key is required.

RO-07	NAME(S)	TITU Aurel Mihail / OPREAN Constantin / MARGINEAN Ion / MOLDOVAN Alexandru Marcel / BOGORIN-PREDESCU Adrian / TITU Ştefan
ORGANIZATION		"Romanian Association of Alternative Technologies of Sibiu" - A.R.T.A.
ENTRY TITLE		**Hemispheric individual electric car with rotary seat**

The invention is referring to an electrical car that is meant to be used in the city for commuting to work. It has a hemispherical shape and can carry only one person, the driver. It has a rotary seat to help the driver maneuver the automobile more easily. It is light, small and very practical for cities with heavy traffic. For assembling, the lower sliding layer is positioned in a non-sliding state, tangent to the lower surface of the skull, and for actuating and sliding the movable cells of the lower layer, an actuator key is required.

RO-08	NAME(S)	BALAN George / TITU Aurel Mihail / DIMA Nicolae / OPREAN Constantin / CEOCEA Costel
ORGANIZATION		"Romanian Association of Alternative Technologies of Sibiu" - A.R.T.A.
ENTRY TITLE		**Installation for checking the verticality of mine shafts**

The invention relates to an installation for checking the verticality of mine shafts, being applicable both to active control and direction of digging and equipping of new mines, as well as determining the verticality of the supporting and guiding elements during the subsequent exploitation of the existing mine shafts.

RO-09	NAME(S)	Anton FICAI / Ecaterina ANDRONESCU / Cristina Daniela GHITULICA / Denisa FICAI / Georgeta Voicu / Madalina Albu Kaya
ORGANIZATION		Polytechnica University of Bucharest
ENTRY TITLE		**Synthesis procedure of some multifunctional composite materials with potential applications in bone cancer treatment**

The invention refers to the procedure of obtaining multifunctional, composite materials designed for the treatment of bone cancer. Based on the invention, the multifunctional material is obtained starting from the collagen/hydroxyapatite composite gel, 3–10% magnetite nanoparticles, 10–500ppm silver or gold nanoparticles and 0,1–10mg/g antitumoral, analgesic or anti-inflammatory agent. The composite antitumoral material is cross-linked with maximum 1% of glutaraldehyde, reported to the dry collagen. The multifunctional systems can be designed to assure controlled antitumoral activity, depending on the nature and content of the components and their mechanisms of action and can be efficient also for pain management.

RO-10	NAME(S)	Denisa FICAI / Ecaterina ANDRONESCU / Maria SONMEZ / Anton FICAI / Ovidiu OPREA / Bogdan Stefan VASILE
ORGANIZATION		Polytechnica University of Bucharest
ENTRY TITLE		**Multifunctional systems based on magnetite, thioacids and Ag/Au nanoparticles used for the targeted diagnosis and treatment of cancer**

The invention refers to a process for the preparation of a multifunctional magnetic systems, composed by three components, structured in a magnetite core and a thioacid shell. Due to the high affinity of the thiol groups for silver or gold surfaces, the as obtained core@shell structures can be easily decorated with Ag or Au nanoparticles. Depending on the absorption conditions, these nanoparticles can lead to a secondary, continuous or discontinuous shell. The magnetite core and the Ag/Au shell can be exploited for both diagnosis or targeted treatment of cancer. The antitumoral activity of these systems is assured by the hyperthermia and photothermia but, if desired, also specific drugs (cytostatics) can be absorbed into these suprastructures.

RO-11	NAME(S)	Petre Lucian SEICIU / Mihai BERTEANU / Horia ŞERBU / Valentin BARBU / Mihai IONEL
ORGANIZATION		University Politehnica of Bucharest
ENTRY TITLE		**Mechatronic System for Vertical Alternative Swinging of the Pelvic Girdle**

The patent presents the Mechatronic System for Vertical Alternative Swinging of the Pelvic Girdle (VAS) used for medical rehabilitation of the locomotory disabled persons. VAS solves the problems of achievement, impulsion and assisting the vertical up and down hip movements during the gate cycle in order to obtain a physiological gate with the Center of Mass (COM) trajectory within normal gate. VAS controls the rotation of the patient's body along the vertical axis, with feed-back so that the patient can walk on curved path.

RO-12	NAME(S)	Mihai BERTEANU / Valentin BARBU / Petre Lucian SEICIU
ORGANIZATION		Alliance for Musculoskeletal Health-Romania (AMSKH-Ro)
ENTRY TITLE		**Botulinum Toxin Guided Injection Device for Spasticity Treatment**

The patent presents the Botulinum Toxin Guided Injection Device (GuiDe) for Spasticity Treatment purpose. GuiDe is developed in order to improve the depth precision of the botulinum toxin intra-muscular injection. The device is composed by two parts: glider and vernier. The syringe is mounted in the glider that glides along the vernier thus allowing the injection depth. The vernier has a special designed base that allows the device positioning and support on the skin.

RO-13	NAME(S)	Mihaela-Doina Niculescu / Carmen Cornelia Gaidau / Doru-Gabriel Epure / Mihai Gidea / Emil Stepan
ORGANIZATION		INCDTP-Leather and Footwear Research Institute Division
ENTRY TITLE		**COLLAGEN POLYDISPERSIONS FOR THE TREATMENT OF CEREAL SEEDS AND PROCESS THEREOF**

The invention relates to obtaining a product based on collagen polydispersions, made up of polypeptides, oligopeptides and free amino acids, including essential amino acids, for systematic cereal seed treatment in order to increase nutritional and health status of seeds and reduce the amount of pesticides used to treat thereof. The collagen polydispersions are obtained by a compact thermos-enzymatic hydrolysis of semi-processed leather waste. Initially, thermal distortion of collagen occurs and gelatine is extracted, after this phase, polypeptide fragmentation occurs through enzyme-catalyzed hydrolysis and the average molecular weight is reduced, when amino acids are released.

RO-14	NAME(S)	Mihaela-Doina Niculescu / Doru-Gabriel Epure / Mihai Gidea / Cristina Enascuta / Carmen Gaidau
ORGANIZATION		INCDTP-Leather and Footwear Research Institute Division
ENTRY TITLE		**NEW TREATMENT FOR RAPE SEEDS BASED ON COLLAGEN HYDROLYSATES, IN ORDER TO INCREASE THE DROUGHT RESISTANCE OF THE RAPE SEEDLING (E!10760 COLL-RAPE)**

The project is about developing a new product based on collagen hydrolysate supplemented with keratin hydrolysate and microcapsules with essential oils coacervate with gelatine, as pesticides, pelleting the rape seeds in order to increase the resistance to drought and to pests during germination of seeds and emergence of seedlings in order to provide robust seedling in field with high resistance to abiotic and biotic stress. The collagen and keratin hydrolysates and gelatin, obtained from leather industry by-products provide amino acids for biostimulation and nutrition. The aim is to replace neonicotinoids forbidden in Europe and to protect bee colonies.

RO-15	NAME(S)	PREDESCU Cristian / MATEI Ecaterina / PREDESCU Andra Mihaela / BERBECARU Andrei Constantin / VIDU Ruxandra
ORGANIZATION		University POLITEHNICA of Bucharest
ENTRY TITLE		**MAGNETIC NANOSTRUCTURES AND DEVICE IMPLEMENTING SAME**

The present invention relates to magnetic nanoparticles, methods of using magnetic nanoparticles for water treatment and apparatus. More particularly, the present invention is directed to a magnetic separation apparatus which uses magnetic nanoparticles to remove undesirable ions from liquids be treated in which pollutants and toxic elements such as Sb, Hg, Zn, Cu, Cd, Cr and the like are contained to thereby purify the liquid at a high rate. The magnetic separation apparatus contains a second container where nanoparticles can be cleaned up and re-used. The liquid purification apparatus can work in tandem, the two containers working reversibly.

RO-16	NAME(S)	Mircea MANOLESCU
ORGANIZATION		iSENTINEL
ENTRY TITLE		**iSENTINEL® Life Advanced - the intelligent earthquake protection system**

The system is structured on three levels: detection / decision / action. At the beginning conceived to save the human life and protect the assets in case of major earthquake, it was developed to react at any other threat, even if an earthquake is not present: gas leakage, fire and any other personalized threat by triggering the right protection procedure. Thus, it ensures the life and assets protection but also the business continuity by acting as an integrate protection, by the mean of the connection with the B.M.S. (Building Management System).

RO-17	NAME(S)	**Alexandru-Ionuț PETRIȘOR, PhD (Ecology), PhD (Geography), Habil. (Urban Planning) / Architect Vasile MEIȚĂ, PhD, Habil.**
ORGANIZATION		Ion Mincu University of Architecture and Urbanism; NIRD URBAN-INCERC
ENTRY TITLE		**Nature-based solutions for a sustainable urban development**

Nature-based solutions expand the urban green infrastructure restoring its interconnectedness, improve ecosystem services provided to citizens and contribute to their welfare, comfort and safety, i.e., sustainability. Cities are socio-ecological complexes where nature forms a green infrastructure providing ecosystem services to people. Unwise or no planning fragments the urban green infrastructure, decreasing quantitatively and qualitatively the ecosystem services and influencing negatively the welfare and comfort of citizens. Proper planning accounts for the urban green infrastructure and its interconnectedness, enhancing the ecosystem services and contributing to sustainability. Planners can adopt nature-based solutions to expand the urban green infrastructure and enhance its interconnectedness.

RO-18	NAME(S)	**SANDU Ioan Gabriel / SANDU Ion / EARAR Kamel / SANDU Andrei-Victor / VASILACHE Viorica / ȘTIRBU Cătălina – Mihaela / CRIȘAN DABIJA Radu Adrian / CHIRAZI Marin / Vlădescu Alina / Cotruț Mihai Cosmin / Vrânceanu Maria Diana**
ORGANIZATION		Gheorghe Asachi Technical University of Iasi – represented by Romanian Inventors Forum
ENTRY TITLE		**Hydromassage jacuzzi system with hydro / aeromassage and salt aerosols halochamber**

Hydromassage jacuzzi system with hydro / aeromassage and salt aerosols halochamber used in the prevention and treatment of cardio-respiratory, osteo-muscular, neuro-motor disorders, and in improving the physical performance of children, elderly people, high-pressure workers and performance athletes.

RO-19	NAME(S)	**Adrian CÎRCIUMARU / Gabriel ANDREI / Iulian Gabriel BIRSAN / Dumitru DIMA**
ORGANIZATION		Dunarea de Jos University of Galati, Romania
ENTRY TITLE		**METHOD FOR PREPARING AND TREATING CLOTHS OF CARBON, KEVLAR AND CARBON-KEVLAR FIBRES WITH A VIEW TO FORMING COMPOSITE POLYMERIC BOARDS**

The invention relates to a process for treating cloths made of carbon, Kevlar or carbon-Kevlar fibres to be used for manufacturing composite polymeric boards. According to the invention, the process consists in washing the extended cloth by pulverization of a 30% surface-active solution, degreasing the same by pulverization of a 20% sodium hydroxide solution, rinsing with water jet, drying naturally for 24 h, at the ambient temperature, applying by pulverization a solution of 30% hypochlorite, followed by natural drying for 1 h, applying by pulverization a solution of 20% polybutadiene rubber addittivated with 6% alumino-silicate and 6% amorphous carbon, followed by natural drying for 2 h, applying by pulverization a component A - epoxy resin precursor addittivated with 6% alumino-silicate and 6% amorphous carbon, followed by natural drying for 2 h, applying by pulverization a component B - amine precursor addittivated with 6% alumino-silicate and 6% amorphous carbon, followed by a final natural drying for 24 h at the ambient temperature.

RO-20	NAME(S)	**Kamel EARAR / Andrei Victor SANDU / Ion SANDU**
ORGANIZATION		Romanian Inventors Forum
ENTRY TITLE		**Ecological Mouthwash**

The inventions refers to ecological solutions: Mouthwash and toothpaste made of powders of egg shell, rice, aromatic plants (mint, rosemary etc), cardamom seeds, calcium hydrocarbonate and sea salt, mixed with mint oil, juice of pineapple and grenadine. The product has good stability and a very good taste, cleans well the teeth and mineralizes the enamel.

RUSSIA

RU-01	NAME(S)	**Podyablonskiy Evgeniy Valeryevich / Shell Olga Yuryevna / Yuzefovich Anton Viktorovich / Chupov Aleksey Aleksandrovich**
ORGANIZATION		Joint-Stock Company “Production Association
ENTRY TITLE		**Industrial model : Neonatal Portable Device**

A fundamentally new product combining high technical specifications and an attractive design. It refers to the field of medical instrumentation, namely, to the neonatal technique. It is intended to safely move newborns and save their lives. It can be used both in stationary and nosocomial conditions as well as during transportation over long distances using various vehicles (ambulances, airplanes, helicopters, etc.). It is especially important in hard-to-reach areas. The advantage is mobility, small size and weight. The top part of the model contains a transparent view cover allowing to watch the child. The form provides convenient access, comfortable placement of the child and safe transportation as well by one person.

RU-02	NAME(S)	**Zimin Igor Borisovich / Koshmanov Vladimir Fedorovich / Logutova Larisa Viktorovna / Reviakov Gennadii Alekseevich**
ORGANIZATION		Russian Space Systems, Joint Stock Company (RSS, JSC)
ENTRY TITLE		**Method of monitoring water biological resources fishery operations, monitoring navigation and communication system of a fishery vessel and data processing center for the implementation of the method**

The invention implements a method for solving the government task of controlling the aquatic biological resources through the operational monitoring of special-purpose vessels and fishing fleet using the GLONASS / GPS / GALILEO / BEIDOU / GONETS / INMARSAT marine multifunctional navigation and communications complex, which provides increase of the efficiency of the industry-wide monitoring system the Federal Agency for Fishery at a new qualitative level with a full transition to national satellite navigation and communication technologies.

RU-03	NAME(S)	**Barkova Mariia Evgenevna**
ORGANIZATION		Russian Space Systems, Joint Stock Company (RSS, JSC)
ENTRY TITLE		**Spacecraft for the disposal of space debris**

The spacecraft is supposed to be used for the collection and disposal of space debris that is in low orbits - 500-700 km, such as, the failed spacecrafts small-sized as well as "traditional" space debris (mission waste (docking bolts, telescope covers, etc., pieces of a multi-layer thermal insulation coating, fragments of destroyed satellites, slag from solid-fuel propulsion systems, sodium-potassium coolant droplets from the cooling circuit onboard nuclear reactors). It is assumed to use a spacecraft in a low orbit to lift it to higher orbits up to the disposal orbit.

RU-04	NAME(S)	**Smirnov Igor Petrovich / Teviashov Aleksandr Aleksandrovich / Vetrova Elena Vladimirovna**
ORGANIZATION		Russian Space Systems, Joint Stock Company (RSS, JSC)
ENTRY TITLE		**Hermetic assembly module for mounting microradioelectronic equipment using a batch process with further cutting into modules**

The invention relates to microelectronic devices for surface mounting namely to hermetic modules which are manufactured and encapsulated using a batch process with further encapsulation and cutting. It can be used to manufacture microwave devices. This invention solves the technical problem of arranging a batch manufacturing for creating a pressurized module with plated through copper-filled microvias thus forming of a cavity for a die, which would allow to place a die with dielectric planarization across the entire surface of the module and subsequently make contact pads on the bottom surface of the assembly without applying bonding processes.

SAUDI ARABIA

SA-01	NAME(S)	**Saffana Mohammed Mustafa Alshangiti**
ORGANIZATION		University of Prince Muqrin
ENTRY TITLE		**Deaf-mute Children Program Prototype**

The main objective of this project is to develop an academic application teaching deaf-muted children (from 3-8 years) sign language. The project takes the children through interactive activities, stories, animated videos and creative lessons; to improve skills such as problem solving, spirit of competition, concentration and memory functions. The project also utilizes the Augmentative Reality (AR) technique to present the cartoon characters used in teaching the sign language. Such technique attracts the children's attention as well as add to their fun experience. The project aims to provide recommendations for creative methods to use to develop activities for similar projects.

SINGAPORE

SG-01	NAME(S)	**Nyx Audrey Angelo Iskandar / Shah Dhwanil Nilesh / Tan Wen Ze / Benjamin Lee Ming Kuang / Gao Xin Yue**
ORGANIZATION		Damai Secondary School/Citizen Innovation
ENTRY TITLE		**Project ARdent**

Project ARdent, a personal assistant wearable device tailored for elderly with dementia that incorporates Augmented Reality (AR) and electronics, offers interactive 3-dimensional notification display to animate reminders at their precise times, e.g. doctor appointments, grandchildren's birthdays, social events, etc. A smart watch, serving as a placeholder for the AR to be displayed, and glasses as a monitor to view the notifications, are included. Project ARdent helps to tackle dementia by setting up simple, consistent, and accessible notifications, enabling the elderly to lead more independent and fruitful lives.

SG-02	NAME(S)	**Vikram S/O Elammaran / Emma Tan Yan Wen / Travers Lee Yi Xuan / Aaron Tan Lip Kiat**
ORGANIZATION		East Spring Secondary School/Citizen Innovation
ENTRY TITLE		**Noise Alert System**

Noise Alert System (NAS) aims to promote self-regulation in the common area in the residential area, library, hospitals, school where it is important to maintain a certain level noise environment. NAS is made up of many sets of coded micro:bit to monitor noise, issue warning in the zone it is placed and communicate to another micro:bit wirelessly to alert relevant authority. NAS will monitor the noise, should it exceeded the preset level, it will display "!" to remind the people to keep their volume down. After three warnings, NAS will alert the relevant authority so that further action can be taken.

SOMALIA

SO-01	NAME(S)	**Abdiqafar Yakub Osman**
ORGANIZATION		Somalia University
ENTRY TITLE		**ATTITUDE OF SOMALIAN STUDENTS TOWARDS THE PRIVATE UNIVERSTIES EDUCATION SYSTEM IN BANGLADESH**

In concluding our research we focused several objectives before we done the study and we cover them after getting and gathering data from the respondents which we targeted before doing anything about the research. The researchers found that Somalian students live in Bangladesh are in very well condition and welcoming, there is no particular problem they regularly face or meet. They purse their learning and no barriers face them during their study, shopping and where ever they go in Bangladesh. The Bangladeshi people are very humble society they make more consideration and brilliant attention when they met and you can understand their good manner at Colleges, Universities and even work places.

SO-02	NAME(S)	Kaltun Said Ali
ORGANIZATION		Daffodil International University
ENTRY TITLE		**EFFECTS OF PNEUMONIA ON CHILD MORTALITY RATE AMONG CHILDREN LESS THAN FIVE YEARS IN GALKIODISTRICT, MUDUG REGION, SOMALIA**

Provide the warm and friendly service expected from a family-style restaurant creating an informal, comfortable environment which will make the customers satisfied and want to return again and again. The Kaltuun Restaurant will be a moderately priced 86 seat restaurant Offering family style food and service. Broasted chicken, pot roast, steaks and, wraps and generous salads are all on the menu. We will offer specialty selections include a lighter option and smaller portion for children's menu.

SO-03	NAME(S)	Hussein Abdirizak Ahmed
ORGANIZATION		Banadir Hospital
ENTRY TITLE		**Nutritional status of students of selected secondary schools of mogadisho city in Somalia –A comparison between Boys and Girls**

Malnutrition is one of the major problems facing the developing countries, especially among children. Poor nutrition leads to reduction in immunity of an individual, in other hand increased levels of nutrition leads susceptible to wide varieties of disease, damage the physical, mental development and reduced productivity. Study objective was to Nutritional status of students of selected secondary schools of Bosaso city in Somalia –A comparison between Boys and Girls. Methodology: The study used purposive, convenient and random sampling techniques to select 245 school children. Data was collected on the students' age, height and weight BMI. Structured questionnaire was used in data generation. Data were analyzed electronically using a software SPSS version 20.

SO-04	NAME(S)	Abdimalik Dahir Khalif
ORGANIZATION		Kampala International University
ENTRY TITLE		**Nature of business and manufacturing service**

KR has future plans to provide catering services for family reunions, weddings and other events desiring a "home-style" menu. This could potentially become a large portion of gross sales. Provide the warm and friendly service expected from a family-style restaurant creating an informal, comfortable environment which will make the customers satisfied and want to return again and again.

SO-05	NAME(S)	Maryan Abdullahi Mohamed
ORGANIZATION		Asian University of Bangladesh
ENTRY TITLE		**Modern Cafe Restaurant Service**

The labaraad Restauran will be a moderately priced 86 seat restaurant. Offering family style food and service. Broasted chicken, pot roast, steaks and, wraps and generous salads are all on the menu. We will offer specialty selections including a lighter options and smaller portions for a children's menu. The restaurant will be family owned and operated by Abdimalik. Together they have 2years experience in the restaurant and catering industry.

SO-06	NAME(S)	Mohamed Abdirahman Mohamed
ORGANIZATION		Hormuud University
ENTRY TITLE		**Professional accounting consulting and financial management service**

Valley Fitness, Inc is in need of Accounting and Payroll services to take over for an overburdened owner/manager. With limited office staff the accounting and payroll functions have been suffering. Outsourcing these office activities will all the owners/management to focus on other aspects of the business.

SO-07	NAME(S)	Aisha Ali Aden
ORGANIZATION		Daffodil International University
ENTRY TITLE		**Knowledge Attitude and Practice of Antenatal Care Services among Reproductive Age Women's Attending at Selected hospital 'Las'aanood general hospital'' in Somalia**

Antenatal care "ANC" also known as prenatal care is the complex of interventions that a pregnant woman receives from organized health care services. Antenatal care is the key entry point of a pregnant woman to receive broad range of health promotion and preventive services which promote the health of the mother and the. WHO definition of antenatal care - Is a medical service provided to a woman throughout her pregnancy in order to ensure that pregnancy and childbirth will not have detrimental effect to herself and her baby. The purpose of ANC is to prevent or identify and treat conditions that may threaten the health of the fetus or the mother and to help a woman approach pregnancy and birth as positive experiences antenatal care. WHO recommends those women initiate ANC during the first trimester of pregnancy.

SO-08	NAME(S)	Abdimalik Ibrahim Hassan
ORGANIZATION		Mogadisho University
ENTRY TITLE		**THE IMPACT OF UNEMPLOYMENT ON THE ECONOMIC GROWTH SOMALIA**

The study was carried out to find out Find out the effects of unemployment among the youth in Galkacyo, Somalia, Discover potential opportunities for the youth, and propose recommendations towards youth employment. During the study, 70 (Seventy) respondents were selected amongst whom were 40 males and 30 females, from different districts of Galkacyo. The study utilized mainly a questionnaire, Key informant interview, focus group discussion and observation checklist as the instrument for data collection. The study was carried out alongside four major objectives, which are to find answers to the following research questions:

SO-09	NAME(S)	Mohamed Hassan Mohamed
ORGANIZATION		Mogadisho University
ENTRY TITLE		**Awareness on consequences of and attitude towards tobacco use among University Students from Somalia Studying in Dhaka Bangladesh**

This study focused on Awareness on consequences of and attitude towards tobacco use Among University Students from Somalia, the study explored the students' level of awareness in relation to tobacco products and their attitudes towards smoking as well as their smoking habits. A questionnaire based survey was carried out among 180 university students from Somalia in Dhaka city of Bangladesh. During the study, it was found that 81% respondents Smoked Cigarette where 19% were not smoked.

SO-10	NAME(S)	Khadar Ahmed Barre
ORGANIZATION		East Africa University
ENTRY TITLE		**The role of drinking clean water on health promotion in Dharkenley district Mogadishu-Somalia**

The highest of the respondents (35%) who were aged 25-29 years, followed by (25%) were aged 20-24, while (20%) were aged 30-34 years, where (17.9)were aged >34. this implies that majority of the respondents were answered by the age of 25-29 year (35.9 %) are the most of the respondents.

SO-11	NAME(S)	Aisha Ahmed Ali
ORGANIZATION		Puntland state university
ENTRY TITLE		**EMPLOYMENT AND WELFARE-TO-WORK TRAINING INITIATIVES: THE EFFECTS OF PRE-TRAINING ATTITUDES ON JOB-SEARCH BEHAVIOR, EMPLOYMENT STATUS, AND JOB-SEARCH INTENDED EFFORT**

For over a decade, the issues of welfare reform and unemployment have been high priorities at the national level. Surveys were administered to participants in three training agencies to examine individual pre-training attitudinal and behavioral variables, including self-efficacy, employment commitment, and unemployment negativity. The study then examined the relationship between these variables and post-training job-search behavior, employment status, and job-search intended effort of unemployed trainees.

SO-12	NAME(S)	Magan Mohamud Ahmed
ORGANIZATION		Jazeera University
ENTRY TITLE		**EVC Plus Service**

EVS Plus is a unique option to transfer and receive mobile money. You can share mobile money as well as airtime between your friends and family. 63% of mobile money users do not withdraw or transfer all of the money out of the account straight away once a transfer is received into the account, but rather transfer the money over time as and when needed. Mobile money further circulates into the economy.

SRI LANKA

LK-01	NAME(S)	KUREMPALA RALALAGE CHATHURA MADHUMAL
ORGANIZATION		T/KN/GANTHALAWA MAHA VIDYALAYA
ENTRY TITLE		**WALKING CHARGER**

Using the method of rotating discs such as CD/DVD/VCD. Moving the dinamo clockwise and anticlockwise using the levers. Rectifing AC generated in the dinamo in to DC. Charging the mobile phone battery using the DC. Reducing the friction between the leg and the ground to supply stable DC to the mobile phone. So we can charge 75% of the battery within 1.5 hours time by normal walking speed.

LK-02	NAME(S)	Wijayapala WELGAMA
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Elephant Distance Tracer & Chasser for Human Safety**

Elephant & human conflit in the sake of development in rural areas become very commun in Sri Lanka as well as other Asian and African countries. Thus my invention help in finding distance of moving elephants to get precausions and use 3 head beam flash to warn elephants to move the area human area for its safety.

LK-03	NAME(S)	Wijayapala WELGAMA
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Human Safety Beam**

In a third world country like Sri Lanka there are so many accidents take place during night time. According to the statistics most of the roads are not lit up at dawn. Therefore, this invention will be fixed on the upper arm to be visualized to others in recognising movements of human beings at a distance during the dark in order to avoid any collision/fatal accidents,

LK-04	NAME(S)	Wijayapala WELGAMA
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Survival Kit for any Disaster**

In the world, people can become helpless at any time of the day as they have to let everything at home & leave in order to find a shelter for survival. For any S.O.S help they need immediately charge their mobile, show an alert signal or even pass the night without fear with or without their children. My invention will definitely help to find solutions for S.O.S. any time anywhere of the day.

LK-05	NAME(S)	RATHTHARAN MURAMUDALI HERATH MUDIYANSELAGE ANUPA INDIKA HERATH
ORGANIZATION		MINISTRY OF HEALTH
ENTRY TITLE		**''SLIDESCOPE' A novel video laryngoscope**

A low-cost video laryngoscope, with the ability to display high-resolution images on any smart mobile phone or laptop computer. This device also has a pre-loaded flexible bougie that is advanced into the trachea, to facilitate endotracheal tube placement. The 18mm blade thickness enables laryngoscopy in patients with very limited mouth opening. The hyper-acute curvature of the blade allows intubation of the trachea with little or no neck extension; ideal for patients in a cervical collar. The cost of manufacture being 150 US dollars, it will be vastly cheaper than commercially available video laryngoscopes. It is anticipated that this new video laryngoscope will have a significant impact on advancing anesthesia patient safety, especially in developing countries.

LK-06	NAME(S)	KUMBURE GEDARA KRISHANTHA DESHAPRIYA SUMANADASA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**COCONUT PRINTING LANSA**

This is an absolute invention (not an innovation), to increase the productivity and the profitability on large scale and medium scale coconut estate sector by minimizing the theft and malpractices. Printing an abbreviation or a symbol concerned on the surface of the coconut husk without extra labour cost when collecting the nuts. This invention has been improved further after winning following awards and relevant picture are attached.

LK-07	NAME(S)	MR. SELVANATHAN SELVATHASHAN
ORGANIZATION		FoG VHE / NENASALA - ODDUSUDDAN
ENTRY TITLE		**"FREE BAT" SOLAR POWER SMART WALKING STICK FOR "VISUALLY IMPAIRED PEOPLE'S"**

The device send outs waves as the user walks on the road. According to the mode selected, the device detects obstacles and vibrates or Beep according to how far they are. And 12V DC current battery supplying voltage to this device and 12V solar cells charging the battery when the user going to outside. (User Cap have 12V Solar Cells). And my devices have GPS tracking system and parents or guardians can monitor visually impaired people walking place, distance and location through the mobile application at home.

LK-08	NAME(S)	WARNAKULASURIYA DINESH SASIKA SRIMAL FERNANDO
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**FIRE AND ANTI-THIEF GSM WIRED/WIRELESS ALARM SYSTEM**

Wireless/wired fire and anti-thief multifunction GSM burglar Alarm system. Working with all kind of sensors in the world. Accept any brands of sensors. Unlimited calling numbers and unlimited sensors capacity. Long distance connectivity with wireless sensors. Remote/ gsm controlling. Over 18 hours of battery backup. Display defence-zone with real name. Product can customize as requirement of the customer. Include new wireless heat sense fire Alarm sensor, new touch greel sensor , modified false alarm free motion detector.

LK-09	NAME(S)	WARNAKULASURIYA DINESH SASIKA SRIMAL FERNANDO
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Automatic portable false alarm detector on wireless alarm systems**

Wireless alarm systems are working with large number of wireless sensors. When trigger a wireless sensor, it trance meet a frequency and alarm panel receive that transmission. Sometimes wireless sensors are trance meet a frequency without a movement or thief. (Maybe for short circuit cases, humidity, over heat, battery low or other reason) it is call a false alarm. For one house have many sensors and difficult to find the false alarm sensor. With my instrument can find automatically false alarm sensor during the day time and night time without a human help.

LK-10	NAME(S)	WARNAKULASURIYA DINESH SASIKA SRIMAL FERNANDO
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Portable digital smart flow volume measuring and sms sender funnel**

When selling the liquids, Fuel stations and all kind of liquid sellers can fraud. With my Portable digital smart funnel liquid buyers can measure the flow volume when buy the liquids. When my funnel fix in to the fuel tank, a driver filling fuel to the vehicle and he can verify the sellers meter and vehicle owner receive a sms with filling litters volume. The funnel can measure flow volume and send result to the pre-programmed mobile phone or server. It can recognize fuel and other liquids. It can measure pure liquid volume without air volume mixed in the liquid. It can fix in to the vehicles or other needed places. With a server can manage a data base of liquid filling volume.

LK-11	NAME(S)	METHUKA RIYON DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**SPECIAL WASHING BASIN FOR HANDICAPPED PEOPLE**

Special Washing Basin for Handicapped People is a modified washing basin with a rough inner surface to help proper washing of clothes with a simple rub, & a non- slip bottom to secure the basin in one place while washing. This invention is intended for the use of handicapped people with only one hand to wash their clothes on their own, properly & it would benefit the handicapped people who cannot afford to use a washing machine to wash their clothes.

LK-12	NAME(S)	BENETTE UPALI SIRIMANNA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Unblock sink waste**

UNBLOC SINK WASTE – Solution to the day to day household problem at the kitchen by innovating effective solution to the people and the environment.

LK-13	NAME(S)	Rathnayake Gamlathge Saman Wijesekara
ORGANIZATION		Wayamba University of Sri Lanka
ENTRY TITLE		**Herbal smoke based fruit ripening apparatus**

Fruit Ripening Apparatus is constructed with clear glass and consist with fruit ripening chamber, smoker, smoking pellets and air exchanger. Unripen fruits are stored in the ripening chamber and ripening is induced by smoking with herbal based pellet made from plant leaves. Fruits are ripen within 1-2 days by herbal smoke. Various kinds of fruits can be ripen using this apparatus.

LK-14	NAME(S)	Rathnayake Gamlathge Saman Wijesekara
ORGANIZATION		Wayamba University of Sri Lanka
ENTRY TITLE		**Reusable moisture absorbent paper**

This invention is made up of using renewable materials and moisture in a closed system can be absorbed to this paper. Since moisture can be absorbed to this paper the closed system or chamber can be kept dry. Humidity of the closed system or chamber can be dropped down to even 30% or lower. The invention is ideal to store camera, photos and any other electronics under dry condition. The papers can be reused again and again. This is an alternative to silica gel. The moisture absorbent paper can also be used in food packaging to ovoid food spoilage.

LK-15	NAME(S)	WARNAKULASURIYA SAMPATH RUWAN THAMEL / KALTHOTA GURUNAIDELAGE DON DIVON LAYANTHA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**AUTOMATED RAIL GATE CONTROL SYSTEM**

Especially in developing countries, rail gate crossing accidents become a main problem for people and governments in recent years. As a solution this project describes a cost effective, intelligent rail gate controlling system with higher reliable system operation. The system consists of an internal error detection and correction mechanism for controlling. As a result of that probability of system failures are minimized and thus it ensures system operation has higher reliability. Also if there are technical issues, the system automatically send an SMS to relevant parties. Also system maintains a data logger for further operation.

LK-16	NAME(S)	WARNAKULASURIYA SAMPATH RUWAN THAMEL
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**HEADLIGHT DIMMING DEVICE FOR VEHICLES**

There is a problem when travelling at night, because most drivers don't dim their headlights when two vehicles come towards each other. By using this device, When two vehicles are coming towards each other, head lights of both vehicles are dimmed until they pass each other. After that the head lights of both vehicles are automatically switched on. Furthermore this device will control the head/dim light operation in the following scenarios. When a vehicle is entering to a road, in a traffic jam, in a junction where traffic lights exist, in a pedestrian crossing, and in a railway crossing.

LK-17	NAME(S)	WARNAKULASURIYA SAMPATH RUWAN THAMEL
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**GUIDING DEVICE FOR BLIND PEOPLE**

Guiding Device for Blind People is a handheld device which is designed for blind people in order to overcome problems when they are using a traditional white cane. This device can detect object/obstacle within a long distance without physically contacting with it and convey the details of object/obstacle to the user by using lever and sound system. In most cases blind people do not have a method to identify the colours of the objects, especially in dresses. By using this device the user can easily identify the colour of objects by using a sound system.

LK-18	NAME(S)	Thambawita Maddumage Kamaljith Thambawita / Hewa Pathiranage Harshi Nishamini / Thambawita Maddumage Mewanya Mindulee Thambawita / Thambawita Maddumage Senila Mewanjith Thambawita / Nilantha Krishantha Kulasinghe
ENTRY TITLE		**Ceylon Cinnamon Innovations**

Generally thrown out(causing floods and other issues) or burnt by-product of age old Ceylon Cinnamon industry, the cinnamon wood is used, with an innovative method of engulfing all the goodness of Ceylon Cinnamon & beehive wax to create kitchen tools (mostly in gastronomy), art work (specially pyrography), carvings, toys, & other wooden items with pleasant aroma & taste without causing deforestation in an interest arousing manner with many health benefits to all stake holders assuring benefits to - productivity of the country, blue-green economy, carbon footprint index, creating many job opportunities & an additional income to farmers & public.

LK-19	NAME(S)	Janaka Dinesh Kumara Govinda Kotuwegedara
ENTRY TITLE		**KS Emollient**

In this invention an Emollient formulation was prepared from a non-ionic surfactant, Emollient, Humactants and anti-oxidents.The Composition is produced fine Oil in water type Emulsion when the oil mix with water for depositing an emollient layer on the skin which decrease the Trans Epidermal Water Loss(TEWL) and increase the moisture content on skin to prevent further drying.

LK-20	NAME(S)	ASIRI DILHAN DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**PEST REPELLENT ECO TABLE MAT**

This invention is an advance table mat, made from a major e-waste, discarded CDs, providing a very efficient & economical recycling same. It repels pests like ants, cockroaches, etc. with 100% non-toxic eco-friendly method, preventing contamination/damage of food & any other goods. This is also a very useful aid to visually impaired and elderly people.

LK-21	NAME(S)	ASIRI DILHAN DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**ELECTRICITY PROTECTOR**

This is an easy to operate invention that helps to avoid damages to human lives/properties due to electrical accidents & electrical fires caused by over-heating of 24 x 7 used electrical devices. It helps to maintain a 100% secured electrical system by verifying, proper functioning of the Residual Current Device (RCD), proper earthing & proper wiring system in any building. Also helps to detects unsafe extension codes, wall sockets & power fluctuations, as well.

LK-22	NAME(S)	ASIRI DILHAN DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Guardian Extension Code**

The invention is a universal 13A high secured extension code that prevents any electrical accident, even if faulty equipment are plugged in to it. It consists of a built in 2 hour timer to auto switch off the power to the plugged in equipment, after a required time of usage. Useful to avoid over-charging of mobile phones, rechargeable batteries, etc. It also contains a sound sensor alarm that is activated by whistling, & help to locate the extension code. 100% safe & ideal for the use of visually impaired, elderly & children.

LK-23	NAME(S)	ASIRI DILHAN DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Modified Nursery Plant Pot**

It is an advanced substitute for regular nursery/plant pots. It helps to remove nursery plants from the pots efficiently, without damaging the roots. It is re-usable many times over, & cost effective. It contains a mixture of eco-friendly non-toxic pest repellent inside the brim, to keep pests away. It is durable, stable & stands firm on the ground. Can be used as a permanent plant pot, & the plant can be changed from pot to pot as & when required, without damaging roots. It can be made in any size, shape & appearance.

LK-24	NAME(S)	ASIRI DILHAN DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**ELECTRONIC/SMART RAT REPELLENT**

This is an ideal green innovation to protect vehicles & household things from Rats/rodents. It is non-toxic & repels rats/rodents by using a sound frequency mix, high power light & when necessary by low amperage electric sparks. It is motion sensitive & activates the repellent methods only when rats/rodents are around.

LK-25	NAME(S)	Subasinghe Nissanke Chamila Madurangani Dias
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Development of building materials from plant and waste textile fibres**

Asbestos is extensively used among various types of roofing materials in construction sector. It has proven to have health hazards such as lung cancers and asbestosis among people who are engaged in handling and transportation. Therefore, asbestos should be substituted by alternative fibres such as plant fibres and waste textile fibres. Different proportions of fibres of Guinea grass (*Pannicum maximum*), Giant Reeds (*Arundo donax*) and waste textile fibres were incorporated into cement and composite sheets and blocks were produced in similar to commercial tile production process and tested for quality. Among all, textile fibre-cement composites had best performances.

LK-26	NAME(S)	Ulaganathan Chartheepan
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**NEW MODEL MARKER**

It is modified white board Marker and as a teaching aids equipment. It is used for white board. Which call "NEW MODEL MARKER". The problem is an old marker pen, cannot write continuously. But the New Model Marker, can write continuously. Because of the changing shape in the New Model Marker ("L" shape with saving small tank). Product cost is low but long life. Marketable instrument.

LK-27	NAME(S)	Samarajeewa Nilantha Gunasinghe
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**Industrial Multi Remote Assistant Unit**

This Remote Assistant will allow any type of phone to act as an Unlimited range real-time remote control. It is designed to apply for any kind of electronic Devices/Industrial Heavy machineries / Railway Gates / All kind of Vehicles / Hotel Services /Kabanas/ supplying water for agriculture purposes / Home Security and many more can be controlled anywhere in the world. The Unit can be operated over basic mobile phone signal (DTMF) (2G) or cable phone network and no need Wi-Fi, Mobile App, Data signal, SMS or new technology phone.

LK-28	NAME(S)	Ranjith Dharamakeerthi Mannage
ORGANIZATION		Sri Lanka Environmental Conservation
ENTRY TITLE		**Environment-Friendly Layer Base Septic Tank(s)**

The sewage treatment system is used to allow aerobic decomposition of sewage to reduce the volume of sewage. Decomposition rate is much faster lower capital & no maintenance cost.

LK-29	NAME(S)	WARNAKULASURIYA SAMPATH RUWAN THAMEL
ORGANIZATION		Sri Lanka Environmental Conservation
ENTRY TITLE		**SEWING MACHINE MONITORING SYSTEM**

Sewing machine monitoring system is an innovative platform to convert the sewing machine used in the garment industry in to a smart machine concept. By using this system, machine operator can minimize garment defects, minimize injuries and complete target in time. Also for technicians can do repairs in advanced. Thus it will help to minimize machine breakdowns, increase machine run time and less works on machine repairs. Through this system, manager can minimize wastage, reduce maintenance cost, can measure performances of machine operators and technicians, complete target without delay and also can generate machine history report.

LK-30	NAME(S)	M/S THIVINYA RAVINDI PREMARATNE
ORGANIZATION		MUSAEUS COLLEGE – COLOMBO 07
ENTRY TITLE		**ENERGY SAVING MULTIFUNTIONAL GAS COOKER**

Fill the container with water that needed to be boil. Due to the gravitation, water transmitted to the tubes fixed around the burner. When the cooker is active, water in circular tube heated through the heat emitted from the radiation. When the water in the tube is boiling, due to expansion and evaporation, the boiled water is transmitted to the boiler jar through the vertical tube. The tube around the burner filled again through the tube fitted in lower level of the container. This water cycle continuous and the water in the jar boiled through this continuous process. This water can be taken out easily by the outlet tube & tap fitted in the lower level.

LK-31	NAME(S)	Kamal Lasantha Weerasinghe
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Alternative Sources of Growing Medium/s for the Horticulture Industry instead of Coco Peat, Rockwool and Sphagnum Peat Moss**

Different types of major growing media which are used in greenhouse agriculture sector, are Coco peat, Sphagnum peat moss, Rock wool/Stone wool. Coco peat generates significant water pollution, due to buffering and washing. Another drawback of rock wool is non-degradable and not sustainable. Impacts of peat mining is a major factor in the build-up of greenhouse gases in the atmosphere. Alternative Sources of Growing Medium/s has been developed to overcome the above environmental issues, which includes several combinations and sizes of compressed plant bio masses (fibre and pith material)

LK-32	NAME(S)	Kamal Lasantha Weerasinghe
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Newly Designed Tubeless Air Heater**

An alternative solution instead of conventional heat exchangers, due to poor efficiency of the existing heat exchangers, use of wood with high moisture content and large logs which require frequent opening of the furnace doors leading to lower combustion efficiency and excessive loss of energy in flue gases and no waste heat recovery systems. Therefore, Tubeless air heater is newly designed to overcome the above problems, which can be operated by any kind of combustible materials such as saw dust, paddy husk, gliricidia (Gliricidia *sepium*) and calliandra (Calliandra *calothrysus*) stem cuttings, pelletized dried solid waste wood barks and chips etc.

LK-33	NAME(S)	Chamika Inomal Gamage
ENTRY TITLE		**Headrest with spring-loaded window braking system and emergency self-inflatable lifesaving buoy**

The innovation is directed to a multipurpose headrest with spring-loaded window braking system for quick and easy window glass breaking in an emergency. Headrest consists lifesaving buoy to assist escaped people to survive in a drawing situation. Therefore, this innovation is much related with the field of human safety.

LK-34	NAME(S)	WARNAKULASOORIYA MUDIYANSELAGE SHANIKA WARNAKULASOORIYA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION (SLIC)
ENTRY TITLE		**ORGANIC FERTILIZER - NATURAL MAGIC BOOSTER**

Natural magic booster (NMB) fertilizer can be used instead of chemical fertilizer in conjunction with other amendments to meet plant requirements and keep soil healthy. Rates /Amount varies according to the soil fertility, nutrient needs, amount of chemical contain in soil and amendments used. 250g-1kg /hectare. NMB produced by using natural materials and no any synthetic compound with an evidence based approach to planning and strategy. NMB speeds the supply of nutrient continually to have quality end product. And can be addressed to sustainable agricultural waste management and environment conservation. There are many national and international achievements for this products.

LK-35	NAME(S)	K.D SRIMAL CHRISANTAS CHINTHAKA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION (SLIC)
ENTRY TITLE		**L.E.D BULB INSIDE HAVE BEEN S.M.D PRINTED CIRCUIT BOARD TESTING INSTRUMENT**

Through the above mentioned circuit inside L.E.D bulb a kind of S.M.D (surface mount diode L.E.D) a small L.E.D fixed into plastic P.C.B can be tested good or bad in a second.

LK-36	NAME(S)	VIHARA SACHETHANIE RANASINGHE
ORGANIZATION		SUJATHA VIDYALAYA, NUGEGODA - SRI LANKA
ENTRY TITLE		**UPPER BODY WEARABLE, LIGHT-WEIGHT AND PORTABLE AUTOMATIC LAMP**

This lamp could be used by any person at any time. When it's dark the lamp automatically lights up. Instead of rechargeable battery power it could be used by solar power as well. The person who wears this lamp could engage in any activity using both hands while it's hung on the upper body.

LK-37	NAME(S)	METHUKA RIYON DE SILVA
ORGANIZATION		SRI LANKA INVENTORS COMMISSION
ENTRY TITLE		**HELPING DEVICE FOR WEIGHT TRAINEES**

Helping Device for Weight Trainees is a specialized tool that helps to maintain a steel exercise bar, in proper balance position (by the trainee himself without any aid from another person), during bar exercises like bench press, forceps curl etc. It also helps to prevent injuries to bones, muscles & ligaments due to unbalanced bar positioning. It is easy to use, portable & is in a cute design. It contains an in-built light for easy reading of the balancing position. It can be fixed/removed to steel bars easily as required.

LK-38	NAME(S)	Hemashri Bandara Waas Thilakarathna.
ORGANIZATION		Sri Lanka Inventors Commission
ENTRY TITLE		**Industrial Safety Liquid Level Indicator**

An instrument to measure the depth of a liquid of any depth, any size and of any liquid ex. Water, Petrol, Diesel and Oils etc. without disturbing the properties by touching by the sensor, as the sensor stays outside the liquid container. May be monitored from any part of the world and control the attached appliances.

SUDAN

SD-01	NAME(S)	Mohammed Bashir Musa
ORGANIZATION		Deft solutions
ENTRY TITLE		**SMART MICROSCOPE**

Modification is done on normal microscope with 50 times zooming to detect more species faster and more accurate with high cost saving compared to flow cytometer technique

SD-02	NAME(S)	KHAWLA OSMAN BASHIR MOHAMED
ORGANIZATION		SMART CARE TECH
ENTRY TITLE		**SMART WASHING MACHINE**

The technological development that is taking place in the world need an invention to deal with it that's why I compare 3 machine in one machine ironing , washing and folding to save the time

SD-03	NAME(S)	MOHAMED ELFATIH ELSIDDIG SULIMAN MARKHI
ORGANIZATION		SMART CARE TECH
ENTRY TITLE		**SELF ACTIVATION FIRE-BALL EXTINGUISHER USING AI TECHNOLOGY**

Fire disaster is a common threat to lives and property. An automatic fire extinguishing strategy provides real time monitoring, exploration and programmed fire alarm. This project presents the design of fire protection system for buildings and gas stations. It sends early alarm when the fire occurs and helps to reduce the fire damage. This system consists of a smoke detector and a temperature sensor whose outputs are connected to the controller. The system locates the source of the fire, takes into account the density of smoke as well and thus the probability of false alarms can be avoided.

SD-04	NAME(S)	Salah Eldin Mustafa Ali Hussein
ORGANIZATION		SMART CARE TECH
ENTRY TITLE		**Twisted Snake**

With the improvement of standard of living, air-conditioning has widely been applied. However, the dynamic drainage system of the spilt type of air-conditioner comes with a costly problem that associated with every now and then that effects its air quality as well as property damages in some cases. Clogged the drainage system in ACs is a common problem where the water drainage system doesn't allow the water to pass through the pipe and it leads to a comeback of water.

SD-05	NAME(S)	MOHAMED ELTUHAMI ABDELRAHIM KHALIL
ORGANIZATION		SMART CARE TECH
ENTRY TITLE		**Modern Black Box**

For airborne vehicle such as helicopters, commercial flights a flight data recorder called black box is placed near the tail end of the vehicle that screens all the data that includes engine parameters, cabin parameters, conversations of the cabin crew and videos related to cockpit area. A Flight Data Recorder (FDR) (also referred as Accident Data Recorder (ADR)) is a device used to record specific aircraft performance parameters. In case of accident occurs due to pilot error, mechanical error, weather abnormalities, sabotage and other human errors, this black box will help in analyzing the cause of the accidents for further course of actions.

SD-06	NAME(S)	MOHAMED ALMOTASIM ABDALLA ABDALLA / NIMAT IBRAHIM AWADALLA IBRAHIM / Abdalbasit Ibrahim Adam Abdalla
ORGANIZATION		University of Khartoum
ENTRY TITLE		**Phytochemical Screening, Antioxidant Activity, the Emulsification Stability and Minerals Content of *Acacia Albida* Fruit (Pods) in Darfur Area/Sudan**

On the early of summer season *Acacai Albida* Fruit (Pods) moisture content was 4.74%. Almost all the Phytochemicals were present in the Extract. Alkaloids, Amino acids, Carbohydrates, Cardiac glycosides, Diterpenes, Flavonoids, Phenolic compounds, Phlobatanin, Proteins, Steroid, Saponins, and Tannins were found to be present but Oil & fats absent. The determination of total polyphenol flavonoids were performed by UV-Spectrophotometry. The antio was performed using (DPPH) method and was showed significantly high capacity of antioxidant activity. The aqueous solution was slightly red to orange colour, Acidic (4,2PH), very good Emulsifier (Oil in water one Phase <24 hr). The mineral content was showed significantly percentage of (Al, Fe, Ca, Na) and Low percentage of Heavy Metals.

SWITZERLAND

CH-01	NAME(S)	Ms. Francesca Melera
ORGANIZATION		Frel Solutions Sagl
ENTRY TITLE		**Ergonomically shaped eyewear holder designed to support eyewear temple tips holding on a wearer's neck**

An accessory for reading glasses (and sunglasses): a set of two end caps that can be slid over the temple tips of a pair of reading glasses, so the glasses can be worn around the neck when not needed.

SYRIA

SY-01	NAME(S)	**Mohammad Alhamwi / Oday Alhamwi**
ORGANIZATION		KAIZEN Team – Damascus, Syria
ENTRY TITLE		**Solar Panels Protector From Overheating**

The renewable energy devices proliferated in recent times, and especially solar energy devices, and that the tubes absorb heat and light its lifespan, so we created a new idea and is put cloth insulator them (Shader), but in automatic way, and this way we have reduced the use of the tubes. And noting that the higher the temperature of the water has increased the proportion of lime in it so high the water temperature in the solar energy increases the proportion of calcification of the water, and the presence of Shader reduces high water temperature, especially in the summer.

TAIWAN

TW-01	NAME(S)	**LIN, YUN-SHENG / LAI, FU-CIAN / CHANG, JUI-CHIH / HE, GUAN-HUA / LIN, HSIN-I / TSAI, YUEH-HUNG / CHANG, HSING-YUN / CHAO, CHIEN-LEI / WANG, WAN-LIN**
ORGANIZATION		CENTRAL TAIWAN UNIVERSITY OF SCIENCES AND TECHNOLOGY
ENTRY TITLE		**FUNCTIONAL FRAGRANCE PACK**

Using natural deodorization such as coffee grounds, Chinese tea, and fruit peel to reduce the damage caused by chemical; we began to think about the development of the fragrance products. Then we look at in more depth, and with a practical approach showing how each field can be applied, fragranced consumer products such as cleaning supplies, air fresheners, and personal care products, are a primary source of indoor air pollutants and personal exposure.

TW-02	NAME(S)	**WEI-CHUN HUANG / CHENG-CHUNG HUNG / TZU-WEN LIN / HSIN-JU HUANG / CHIEN-JU HUANG / SHUE-REN WANN / GUANG-YUAN MAR / CHUN-PENG LIU**
ORGANIZATION		KAOHSIUNG VETERANS GENERAL HOSPITAL
ENTRY TITLE		**ULTRA-RAPID ELECTROCARDIOGRAM DEVICE**

Ultra-rapid electrocardiogram (ECG) device has world first smart design, including breakthrough cross mark by anatomy and embedded conductive wire. Anyonecan accurately complete ECG in 10 seconds.

TW-03	NAME(S)	**WEN-CHUNG, CHANG / CHIN-CHENG, KUO / FUH-CHENG JONG / FU-LIN, LIN / CHIH-YI, LIN**
ORGANIZATION		SOUTHERN TAIWAN UNIVERSITY OF SCIENCE & TECHNOLOGY
ENTRY TITLE		**FLOATABLE HOUSE**

This invention is applied for Environmental protection at Tainan city. It include solar cells panel, raft, and submerged motor. So that, the Floatable House can change with the level of water level to reduce the floods loss.

TW-04	NAME(S)	**WEN-CHUNG, CHANG / FUH-CHENG JONG / CHIN-CHENG, KUO / FU-LIN, LIN / CHIH-YI, LIN**
ORGANIZATION		SOUTHERN TAIWAN UNIVERSITY OF SCIENCE & TECHNOLOGY
ENTRY TITLE		**WATER LEVEL AND TEMPERATURE INDICATOR MUG FOR VISUALLY IMPAIRED PEOPLE**

This revolutionary mug concept makes the process much safer. It emits a particular sound when the liquid reaches a certain level; we have done this by using a pressure sensor. Also, the mug has a temperature sensor to determine if the beverage inside is at a drinkable temperature to avoid burning one's mouth.

TW-05	NAME(S)	**TCI Co., Ltd.**
ENTRY TITLE		***Lactobacillus casei* TCI058**

TCI isolated a probiotic strain Lactobacillus casei TCI058 from pineapple skin. Lactobacillus casei TCI058 can continuously convert fat in the diet to CLA.

TW-06	NAME(S)	**TCI Co., Ltd.**
ENTRY TITLE		**HA Pro-Genesis™ *Streptococcus thermophilus* TCI633**

TCI select the Streptococcus thermophilus TCI633 from breast milk, which has the ability to secrete hyaluronic acid.

TW-07	NAME(S)	**TCI Co., Ltd.**
ENTRY TITLE		**Block 2.5™ Pear Unripe Fruit Extract**

In vitro experiments confirmed that the extraction of unripe pear fruit has the ability to improve the repair of lung epithelial cells and promote the phagocytosis of PM2.5 by macrophages.

TW-08	NAME(S)	**TCI Co., Ltd.**
ENTRY TITLE		**Cell Young® Orchid Stem Cell Extract**

According to the result of applying orchid stem cell extract in in vitro study, the high expression of COL1A1 and COL1A2 facilitated the formation of collagen.

TW-09	NAME(S)	TCI Co., Ltd.
ENTRY TITLE		TRIPLE PROBIO

We carefully select the three ferments of lactic acid bacteria. The ferments help us inhibit the growth of pathogens and prevent the vaginal area from discomfort caused by infection.

TW-10	NAME(S)	LU, CHIA-LIANG / LI, HAO-WEI / TSENG, CHIN-HSIANG / CHEN, YI-XIAN / CHOU, CHIA-HAN / LU, TAO-TING
ORGANIZATION		ST. JOHN'S UNIVERSITY
ENTRY TITLE		ENCRYPTION DEVICE WITH KEY OF ELECTRONIC CHIP

The device is to encrypt the data, and then encrypts with the electronic chip lock with the USB adapter through the encryption software. When the encryption is performed, the electronic chip lock must be inserted into the USB slot of the computer host, so that the data to be encrypted can be attached.

TW-11	NAME(S)	LU, CHIA-LIANG / HUANG, CHIEN-JUNG / LI, CHENG-CI / CIN, HAN-LONG / WU, CHEN-HAO / CHANG, CHIN-HAO
ORGANIZATION		ST. JOHN'S UNIVERSITY
ENTRY TITLE		WIRELESS REMOTE CONTROL DEVICE WITH TWO-WAY CONFIRMATION AND DISPLAY

The device is composed of a display unit, a main control unit, a controlled unit and a driving unit. The display unit can display and check whether the controlled module is correctly turned on or off, thereby achieving the effect of two-way confirmation and display.

TW-12	NAME(S)	LU, CHIA-LIANG / CHI, DIAN-YUAN / OU, JING-CHUN / TSAI, CHI-HSUAN / SUNG, CHIA-CHEN / LU, TAO-TING
ORGANIZATION		ST. JOHN'S UNIVERSITY/ HUJIANG HIGH SCHOOL
ENTRY TITLE		24-SECOND TRAINING SYSTEM FOR BASKETBALL WITH WHISTLE SIGNAL CONTROL AND MASTER CONTROL MOD

By whistle frequency control basketball's 24-second training system, at the same time and the master device can be synchronized with all the control functions, to achieve the master device and wireless remote control device synchronization operation.

TW-13	NAME(S)	LU, CHIA-LIANG / HSU, CHIA-WEI / WANG, YU-JUN / HSIEH, TE-WEI / CHEN, SHEN / YOU, MING-JIE
ORGANIZATION		ST. JOHN'S UNIVERSITY/ K.L.C.I.V.S HIGH SCHOOL
ENTRY TITLE		AC CONTROL SYSTEM FOR RESISTIVE LOAD WITH POWER ADJUSTMENT BY PULSE WIDTH MODULATION METHOD

The control device generates AC DC through a bridge rectifier, and generates a pulse width modulation (PWM) signal by a programmable single chip. The pulse width modulation (PWM) signal controls the solid state via an optocoupler driving circuit. The solid state relay controls the on-voltage area of the full-wave DC output to achieve power control for controlling the resistive load.

TW-14	NAME(S)	LU, CHIA-LIANG / LIN, GUO-CYUN / HSU, TZU-HSUAN / LI, YOU-SYUN / HSU,YU-CHCN / LAI, YU-PENG
ORGANIZATION		ST. JOHN'S UNIVERSITY / ER XIN HIGH SCHOOL / TAIBEI HIGH SCHOOL
ENTRY TITLE		SIMPLE TYPE OF SUNLIGHT TRACKING DEVICE

The internal program of the single chip outputs the driving signal and drives the motor to rotate up and down or left and right to complete the solar tracking function, so that the sunlight is always perpendicular to the solar panel.

TW-15	NAME(S)	LU, CHIA-LIANG / CHANG, CHUNG-JUI / HUANG, CHI-YA / NI, SHANG-TAO / CHANG, YU-CHEN / LO, CHUN-NAN
ORGANIZATION		ST. JOHN'S UNIVERSITY/ RUI XING VEHICLE INDUSTRY CO., LTD.
ENTRY TITLE		AUXILIARY DEVICE CAPABLE OF AUTOMATICALLY REGULATING TIGHTNESS OF WHEEL BRAKE DEVICE

The auxiliary device can be assembled to the brake line of a locomotive, so that the brake line drives a wheel brake device to maintain a predetermined tightness, so that the user can continue the wheel brake device without additional adjustment action and keep the brake function.

TW-16	NAME(S)	LU, CHIA-LIANG / WU, CHIEN-HUA / CAI, SHENG-FONG / LEE, HUNG-YI / WU, CHIN-HUNG / YANG, HSIANG-YU / CHANG, JUI-TSE
ORGANIZATION		ST. JOHN'S UNIVERSITY/ HUJIANG HIGH SCHOOL
ENTRY TITLE		MULTIFUNCTION CONTROL SYSTEM FOR SPORT WITH CONTROLLED TIME AND SCORE

The control system is based on the host computer to write software programs, will have to control the time and score sport utility system control functions can show on the computer screen, LCD monitors, TV screen or projector synchronously.

TW-17	NAME(S)	JEN,HAO-CHIEN / LIANG,YU-CHENG / CHENG,WI-TA / ZHAH,JIE-HUA / LI,ZHEN-GAO / CAI,EN-HONG
ORGANIZATION		ER XIN HIGH SCHOOL
ENTRY TITLE		**MULTIFUNCTIONAL STICK**

Referencing the patent ideas of modern intellectual assistive devices and the application of products nowadays, the product has been invented combing WIFI hotspots, GPS, and cloud drive.

TW-18	NAME(S)	WANG,WEI-MING / CHANG,JU-HUA / KAO,YI-CHUN / HUA,BO-YAN / ALEX HSU / TU,MING-HONG
ORGANIZATION		ER XIN HIGH SCHOOL
ENTRY TITLE		**PENCIL BOX WITH STERILIZATION FUCTION**

We use ultraviolet to disinfect the disposable tableware. Then, we can always keep them clean, which benefit our health. We installed a lighting gear to be in reserve.

TW-19	NAME(S)	YAN,TANG-YI / CHU,HENG-WEI / KANG,CHIH-WEI / BAO,CHEN-JING / JIANG,JUN-HAO / CHEN,FENG-KAI
ORGANIZATION		ER XIN HIGH SCHOOL
ENTRY TITLE		**GARBAGE SORTING SYSTEM FOR CLOUD MONITORING**

The main purpose of this system is to effectively classify recyclable garbage that is frequently contacted in daily life: iron cans, aluminum cans, PET bottles, Tetra Pak, glass, etc., in order to facilitate subsequent recycling operations.

THAILAND

TH-01	NAME(S)	Supitchaya Hemrungrojn / Korn Hemrungrojn / Jaomai Tungsiripat / Kullanat Tovikkai / Marjimar Suvichasopon
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		**Able Walker (Automatic Balanced Level Easy Walker)**

Able walker is the walker that can help users to walk up and down stair, walk on different levels and walk everywhere without boundary. It was designed not only for orthopaedic patients, unstable balance problem patients from stroke, Parkinson or dementia but also for normal elderly people who feel uncomfortable, unsafe and uneasy with crutches, cane or ordinary walker. Users can adjust tilt, height and balance of walker by themselves automatically and move every step to different floor and to inaccessible wheelchair area with support from safety check sensor. It is portable and foldable to bring everywhere under affordable budget.

TH-02	NAME(S)	Thipok Tungsiripat / Chiratchaya Hemrungroj / Nara Sthapitanonda / Nattam Osornprasop / Siranat Tovikkai
ORGANIZATION		Chulalongkorn University Demonstration Elementary School
ENTRY TITLE		**Brain Up Game**

Brain Up is an innovative toy for modern children. It derives from traditional Thai folk game, then developed the way to play with new technologies adapted to new generation. To reduce children's issues with smart phone play and online games is the main goal of this project. Addicted to smart phone and online game caused several health problems, i.e. ADHD-pseudo attention deficit hyperactive disorder, eyes damages, ears drum damaged, mind effect on violence and lack of social skill. All of these problems can occur in the elderly group as well. Brain Up can be the solution for training attention encounter with the declining process with fun activities.

TH-03	NAME(S)	Solaphat Hemrungrojn / Nutnicha Phensresirikul / Suwicha Jirayucharoensak / Pasin Israsena / Setha Pan-ngum
ORGANIZATION		Center of technology in cognitive care in elderly and Cognitive (NECTEC-CHULA), Cognitive fitness center from King Chulalongkorn Memorial Hospital
ENTRY TITLE		**Neurofeedback training game : the tool for delay dementia in elderly**

This device has evidenced to show the ability to slow the cognitive decline of elderly and prevent dementia in mild cognitive impairment group. This medical device is a practical tool that can be used in the home based at any time you want to train your attention. With our technology that captures EEG waves real time without interference of noise resulting in effective training for elderly. Keeping mild cognitive impairment patient to stay alive with preserved attention and other cognitive function is keyword to slow down dementia.

TH-04	NAME(S)	Solaphat Hemrungrojn / Nutnicha Phensresirikul
ORGANIZATION		Center of technology in cognitive care in elderly (NECTEC-CHULA) Cognitive fitness center, King Chulalongkorn Memorial Hospital
ENTRY TITLE		**The Tri i-ExC game©: Enhance Brain-Body-Mind in elderly**

This Tri i-ExC game© is an efficacy home base technology for elderly and their family to bring up strong body, brain, and mind also the happiness of all. Tri i-ExC game© has EEG signal sensor for the neurofeedback learning to control brain waves to practice relaxing and clear focusing during the exercise. This is the first innovative exercise device for enhancing power of body brain and mind at the same time.

TH-05	NAME(S)	Subhakin Narmmontri / Jeerawat Poonbundansin / Punna Amornvivat / Thanathanit Lertwilasanont
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		**Ezy Eco Garbage Bag Wrapper**

Ezy Eco Garbage Bag Wrapper is usable to tie garbage bag conveniently and quickly. It can be used for both wet and dry garbage by helping tying a small tight knot. With a smaller tight knot there will be more space in garbage bag to maximize the amount of trash stuffed inside. Consequently, the usage of plastic garbage bag is reduced and lead to better environment and global warming problem.

TH-06	NAME(S)	BOONYADA SANGMANEE / MAVITRA TECHAPONKUL / CHUTIYA CHITBOONTHAWEESUK
ORGANIZATION		Chulalongkorn University Demonstration Elementary School
ENTRY TITLE		**B² (Blind Box)**

B² was inspired by seeing the blind living a hard life. The blind cannot identify the colour of shirts they want to wear and the types of banknotes they receive or want to use. On the street, they risk hitting obstacles at head levels. The blind need cell phones to communicate or call for help so they need powerbanks to ensure the phones do not run out of battery. Normal powerbanks only have light indicator making it impossible for the blind to know battery status. We develop B2 with functions that help the blind live more safely, conveniently and comfortably.

TH-07	NAME(S)	CHAYARAT WANGWEERA / EKACHOL PRASOPPHON / RAPEEPUTCH RATTANATAYMEE / PROM SERMSAKSASITHORN / PUTHIMET KITJARUWANKUL
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		**FLASH FETCH**

The proposed system is aimed at improving traffic situation around the Chulalongkorn University Demonstration School. It can reduce the time parents must spend on picking up their kids using a stable emerging technology, namely BLE (Bluetooth Low Energy Energy), to communicate with the student. All parents use an application in their mobile phone to track location of their kids via three zones in the school, e e.gg. Exit Zone, Play and Wait Zone, and Parking Zone, to enable the message transferring between the student and parents.

TH-08	NAME(S)	Jaomai Tungsiripat / Supitchaya Hemrungrojn / Korn Hemrungrojn / Kullanat Tovikkai / Marjimar Suvichasophon / Thipok Tungsiripat / Chiratchaya Hemrungroj / Nara Sthapitanonda / Nattam Osornprasop / Siranat Tovikkai
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		**i-Esi Bag: iEmergency Safety Intelligence bag**

iEsi bag was invented for enhancing the safety of patients before seeing the doctor or EMS coming to pick up to hospital. It increases efficacy of first aid care with reachable price, good for home use and public use. It is an ideal guideline of first aid system, even for untrained users. iEsi Application provides user's instruction and analyzes patient's data recorded from all equipments wirelessly. The carry pad and foldable wheel chair are integrated to transport sufferer from any difficult access area to connect with EMS system. iEsi Bag is the solution for innovative intelligence first aid care system.

TH-09	NAME(S)	Thipok Tungsiripat / Chiratchaya Hemrungroj / Nara Sthapitanonda / Nattam Osornprasop / Siranat Tovikkai
ORGANIZATION		Chulalongkorn University Demonstration Elementary School
ENTRY TITLE		**Müvtivet© (Muscle and movement stimulation versatility tool – for elderly)**

Müvtivet© is a portable Exercise Tool, focusing on bedridden patients and immobility elders, to support them a chance to be able to stand up and continue walking so that they can change their life to be healthy again. Müvtivet© is practical to exercise anywhere and anytime. It stimulates joint and muscle movements of body with different actions and helps users to exercise their muscles in various ways by using motivational program and reward scheme in order that user will have fun during exercise. Health monitoring programs are equipped to make sure the best results for users' health.

TH-10	NAME(S)	Atip Asvanund / Orada Wongamphaiwit / Nawat Kamnoonwatana / Thanwarat Pornpanawan / Pataporn Kuanui
ORGANIZATION		Charoen Pokphand Group
ENTRY TITLE		**Automated Crustacean eggs hatching system**

The invention was developed to support community-based marine resource improvement initiatives that addresses the issue of marine resource declination and its impacts on the livelihood of fisherfolks. The proposed system offers benefits over the traditional method in terms of its efficiency, flexible installation, easy operations, and low maintenance cost. These benefits not only enhance the chance of marine resource improvement's outcome they also increase the participation of fisherfolks which is key to the success of any community-based initiatives. The invention is a result of interdisciplinary-led solution as it was developed based on marine biology, water circulation, microcontroller and social science.

TH-11	NAME(S)	**Parinya Punyafu / Karntida Phanthanan / Chutikarn Pintasaen / Nattapan Supajaidee**
ORGANIZATION		Move World Together Project
ENTRY TITLE		**Soap & hand gel for inhibiting bacteria from non-standard longan size extract**

Longan (Dimocarpus longan Lour.) is a subtropical fruit widely grown in northern Thailand. Many of them are a non-standard size that becomes agricultural waste. This group of students from rural high school who suffer this problem turns agriculture waste into new products “Soap & hand gel for inhibiting bacteria from non-standard longan size extract” because longan contains polyphenolic compounds which exhibit several pharmacological properties. This study aims to evaluate the antibacterial activities of longan extract. The results showed that longan exhibited antibacterial activities against *S. aureus and P. aeruginosa* which are the opportunistic pathogens and cause significant disease in humans.

TH-12	NAME(S)	**Chayada Sangsookwoaw / Phiyada Khayak / Varinthon Chairojrat / Srung Smanmoo**
ORGANIZATION		AVS Innovation
ENTRY TITLE		**Imperial Fruit Enzyme Caviar**

Lipoxygenase (extracted from soybean)” was encapsulated presented as fruit enzyme caviar beads using alginate chemistry with more stable and long term activity. Lipoxygenase is chosen as a model enzyme since it catalyzes the deoxygenation of polyunsaturated fatty acid (arachidonic acid) into an anti-inflammatory and immune boosting compound, eicosanoids. The loading efficiency was calculated to be 98.65 %. Fruit enzyme caviar beads offer the new form of anti-inflammatory and immune boosting food supplement.

TH-13	NAME(S)	**Phuricha Prasert / Panudet Pramunsin / Phiyada Kayak / Varinthon Chairojrat / Srung Smanmoo**
ORGANIZATION		Triple Innovation Co., Ltd.
ENTRY TITLE		**Fizzy Tablet for Completed Removal of Pesticides**

Due to the raised concern of contaminated pesticides in fruits and vegetables throughout the world, our team has developed and introduced the best environmentally sustainable solution for completed removal of pesticides. Unlike activated charcoal which absorbs and desorbs pesticides once it is released to nature. Fizzy tablet provides the elimination of pesticides through the proposed “BROSIO” mechanism which pesticides undergo hydrolysis followed by oxidative reaction. This converts toxic pesticides to non-toxic by products which are safe for us, love one and our environment.

TH-14	NAME(S)	**Patchara Pongmanawut / Maneerat Ngorsakul / Pimyada Grainara**
ORGANIZATION		Princess Chulabhorn Science High School Trang
ENTRY TITLE		**Microscopic Imaging Device**

Microscopic Imaging Device is a device that helps in photomicrography by using a mobile phone to capture the image. The images will be very clear and detailed. The accuracy and precision are the same as the view from the microscope. It also can adapt to all mobile phone models, sizes, and can be adjusted to the size the eyepiece of every generation of microscope. It is very easy to use, convenient, fast, compact and portable.

TH-15	NAME(S)	**Kanisorn Pratumanont / Pureenut Chansareewat / Khanawut chawanaranon / Apaporn Panmee / Nattapon Putakool / Kanokporn Putakool**
ORGANIZATION		Nakhonsawan School Thailand
ENTRY TITLE		**Development of rice harvesting equipment decreasing the farmers’ back pain**

In Thailand, agricultural occupation is mostly done in farming. Although there is currently harvesting by using machinery But farmers who have very little farmland and low cost still need to use the sickle to harvest. And the harvester is unable to harvest in a narrow place, so it is also necessary to use the sickle, which causes chronic back pain, affecting daily life.

TH-16	NAME(S)	**Wilasinee Kositchaiwat**
ORGANIZATION		Pow-wien Co.,Ltd.
ENTRY TITLE		**Cosmetic products from low grade green bean coffee extraction**

Serum in oil product from low grade green bean coffee extraction. Normally low grade green bean coffee unable to resell to add value, therefore popularly used to make fertilizer or mixed in animal feed. But from the experiment, it was found that there were high chlorogenic acid, which is rich in antioxidants Has an effect on anti-aging.

TH-17	NAME(S)	**Kullanat Tovikkai / Lalyn Pestonji / Mathus Jirapunyawong / Shin Kaewtavee**
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		**Forget Me Not Reminder**

Forget Me Not Reminder is a device used for real-time tracking your important person and preventing them being lost from your sight. It was specially designed to use with elderly and kids to solve the problem of getting lost or missing from their home or from the device controlled area. The device uses Bluetooth signal to link with smart phone via application. GPS tracking function was equipped for tracking user’s location. Emergency SOS call and Walkie Talkie for real time verbal response are installed to ensure user’s safety in the unpredictable situation. It can help parent and caregiver to keep an eye on your beloved person.

TH-18	NAME(S)	Jintavee Khlaisang / Prakob Koraneekij
ORGANIZATION		Educational Invention and Innovation research unit, Department of Educational Technology and Communications, Faculty of Education, Chulalongkorn University
ENTRY TITLE		iChat Smart: Gamification Wearable Tracking Tool for Digital Learners

iChat Smart is a gamification wearable tracking tool enhancing learning engagement via chatbot personal assistant (goal setting consisting of i-Set, i-Schedule, i-Follow, Learning Progress, and Notification in the form of missions, levels, and badges). iChat Smart uses API services to connect with Open EdX which is a MOOC Opensource Platform that is widely used in many countries around the world, including Thailand (Thai MOOC). It improves not only the achievement motivation, but also students' self-esteem, self-confidence. To increase the capability of the chatbot, application for smart watch is available for free on Play Store: https://play.google.com/store/apps/details?id=org.thaimooc.smartwatch

TH-19	NAME(S)	Jintavee Khlaisang / Noawanit Songkram
ORGANIZATION		Educational Invention and Innovation research unit, Department of Educational Technology and Communications, Faculty of Education, Chulalongkorn University
ENTRY TITLE		CU Deep Smart Tool Kit : Learning through the Lens of Creation

CU Deep Smart Tool Kit is a mobile application and lens and filters set allowing primary school students to explore the world and share their discovery with their peers online. It enhances learners' skills of the 21st century including creativity, ICT, and communication skills. It includes (1) Smart Lens Set allowing students to take photos at long and short length, wide angel, and to make their own DIY filters, (2) iJourney application allowing students to use their imagination to create their own e-journey and share with peers anywhere anytime. The application is now available for free download at AppStore/PlayStore.

TH-20	NAME(S)	Prakob Koraneekij / Jintavee Khlaisang
ORGANIZATION		Educational Invention and Innovation research unit, Department of Educational Technology and Communications, Faculty of Education, Chulalongkorn University
ENTRY TITLE		Smart Gaml & Smart Sensors : Mobile Laboratory for 21st Century Learners

Smart Gaml and Sensor is a mobile laboratory for students to perform scientific experience in the field, anywhere, anytime, thru mobile application, sensors set (temperature sensor, liquid pH sensor, and soil moisture sensor), and endoscope, controlled by Arduino Microcontroller. The application is developed based on the concepts of inquiry based learning and gamification (mission, score, leaderboard, digital badge, and level) to support active learning, and enhance learning enjoyment. It enhances learners' critical thinking, problem solving, creative thinking, collaboration, communication, and inquiring mind. Now, the application is available for download at AppStore and PlayStore.

TH-21	NAME(S)	Chaitach Tanprawat / Jisue Youn Kumwilaisak / Thanyanan Poonbundansin / Ratchapon Thammacharo / Jeerawat Poonbundansin
ORGANIZATION		Chulalongkorn University Demonstration Secondary School
ENTRY TITLE		EmoAIK- EMOtion AI for Kids

EMOAIK can be used to detect and teach children to learn about various forms of emotions through scanning their faces to convey their feelings, interpret such as natural, angry, happy, or sadness in statistical data for parents to evaluate their kids' emotional status in case of depression or aggression can be resolved anticipatively.

TURKEY

TR-01	NAME(S)	Mehdi Farzpourmachiani / Salar Basiri / Ali Farzpourmachiani / Simin Naghibi Masouleh / Mahmoodreza Gorji / Behzad Izadkhah / Mohammad Hashemi Hashin / Sina Rajabi / Mahmoud Daneshfar / Ehsan Farahani / Saeid Basiri / Ibrahim Ghulam Murad Ali / Pouyan Pournasrollah
ENTRY TITLE		A Method for Level and Electrical Conductivity Measurement of Liquid

1- Utilize a group of electrically connected electrodes to measure level and electrical conductivity
2- Simultaneously measure level and electrical conductivity
3- Continuous and analog measurement not discrete, Can measure in centimeter resolution

UNITED ARAB EMIRATES (UAE)

AE-01	NAME(S)	Mohamad Ali Fahim / Siavash ESmaeili / Nazanin Maroof
ORGANIZATION		ARAMIS GROUP
ENTRY TITLE		Plasma Jet

The invention is plasmajet portable handheld device that can provide plasma in AC-DC in multi modes and frequency and affect the derma subderm and epidermis and use in dermatology disease as hyperpigmentation, melisma, vitiligo, skin lifting, nose jobs, striae and etc. It is very innovative technology to make mutli power and multI frequency in small size handpice up to 24watts

UGANDA

UG-01	NAME(S)	KEMIREMBE RACHEAL LOY
ORGANIZATION		KRAFT 256 LTD
ENTRY TITLE		COWHORN PRODUCTS

Cow horn products are made from natural cow horns that are sourced from slaughter houses and slaughter centers. There is lots of cow horn raw materials littered in abattoirs in different parts of the country in Uganda yet they can be used to produce beautiful products like cow horns, horn jewellery box, horn cutlery like Salad Sets, Forks & spoons, Knife & Cutlery Handles, Horn Toggles etc... Kraft 256 ltd is riding on the trend of innovation and creativity where utilization of authentic local available materials can be used to produce an exquisite collection of handicraft items that are in sync with the fashion trends.

UNITED STATES OF AMERICA (USA)

US-01	NAME(S)	Logan Ma / Olivia Ma / Facheng Lin
ORGANIZATION		St. Mary School – Memphis, USA
ENTRY TITLE		Fast Bees Trap

High pressure air gun will trap the net into bullets, fired into the air, above the height of the hive flight, and the net as the whole colony net, the other end of the net has a thin wire linked to the air gun, the whole net slowly down, most of the bees have been caught in the net, then you can find the queen bee, catch it and place it in the hive. The bees will be then easily reintroduced to the nest. Fast bee trap, simple operation, production process is also simple, but can make up for the world blank in this kind of tools.

US-02	NAME(S)	Saeid Saatchi / Ali Akbar Mohaddes / Mohammad Ali Saatchi / Marzieh Afshari Chamanabadi
ORGANIZATION		ZERT, LLC
ENTRY TITLE		Cosmic Resonator

Cosmic Resonator is a pyramid shaped quantum trap that has been optically engineered to only trap cosmic waves for the very first time ever. By harnessing cosmic waves and exposing water and water-based creatures to this mysterious energy from outer space, our 18 years of research has shown amazing effects on neurological disorders such as MS, Parkinson and cerebral palsy.

US-03	NAME(S)	Austin Huang / Vivian Lin / Edward Huang / Yu-Cin Wang / Yueh-Ju Wang / Teddy Huang / Yu-Wen Liao
ORGANIZATION		Portola High School/Cadence Park Elementary School USA / Etosha Education Consulting Institute USA
ENTRY TITLE		Your Timer

This product is a mobile app designed for teenagers. The main function is to invite friends to disable the phone to achieve the ability of concentrating on getting work done without distraction from peers and other apps on the phone. The user can set the time to disable the phone for a certain amount of time, and invite friends from the contact list to disable the phone with you. In order to prevent the phone from being turned on during the process, you must not turn the phone on during the period of disablization. There is also a calendar feature that allows users to plan their time more efficiently and to ensure that each job is completed in time. In order to attract more users, if users succeed in not using mobile phone within the time set, points will be added to the account, and deduct points to form a gamifying competition, which can interest more users to download the app.

US-04	NAME(S)	Austin Huang / Vivian Lin / Edward Huang / Yu-Cin Wang / Yueh-Ju Wang / Teddy Huang / Yu-Wen Liao
ORGANIZATION		Portola High School/Cadence Park Elementary School USA / Etosha Education Consulting Institute USA
ENTRY TITLE		Easy Plate

This easy plate product is specifically designed for children to increase their interests in eating by applying different colors on to different utensils while allowing them to assemble their own plates. The plate itself is made up of Lego bricks, allowing children to build and have fun during their eating time.

US-05	NAME(S)	TERESA HARRIS
ORGANIZATION		STILLWATER DISPENSERS – GARLAND, TEXAS
ENTRY TITLE		Multi-dispenser refrigerator

A refrigerator having ice and water dispensers on both the front, back and side improves efficiency and utilization of the refrigerator. Home floor plans show openings in interior wall to access the second and third dispensers. Great for large families or group homes by reducing traffic jams at the refrigerator and increases accessibility while maintaining energy efficiency.

UZBEKISTAN

UZ-01	NAME(S)	**Matyakubova Paraxat Mayliyevna**
ORGANIZATION		Tashkent State Technical University
ENTRY TITLE		**Software dielectric moisture meter in the process of storage and processing of grain**

The invention relates to measuring equipment, in particular to devices for measuring humidity, based on the use of capacitive sensors, and can be used in various industries, especially in determining the moisture content of liquid and bulk materials in laboratory, field and storage conditions.

VIETNAM

VN-01	NAME(S)	**Vũ Trần Gia Huy / Trần Nguyên An / Phạm Gia An**
ORGANIZATION		Foreign Language Specialized School, Hanoi / Viet Duc High School, Hanoi / High School of Gifted of Sciences
ENTRY TITLE		**Smart Dustbin**

This invention is filed patent. This innovation presents a smart dustbin have automatic lid, which can measure air humidity, air quality as well as temperature of the environment. In addition, the smart dustbin can measure the waste bin fill-level, can be controlled from far away using IoT (Internet of Things) technology with a mobile app via the Internet. Most importantly, the smart dustbin uses an innovative method to increase the efficiency of photovoltaic system.

VN-02	NAME(S)	**Nguyễn Nhân Trí / Đặng Ngọc Linh / Nguyễn Trung Kiên**
ORGANIZATION		Nguyen Trai Secondary School, Ha Noi / Phan Dinh Phung High School, Ha Noi / Chu Van An High School, Ha Noi
ENTRY TITLE		**Extraction procedure of phenolic acid contents with antioxidant activity and cardiovascular protection from the danshen roots (*Salvia miltiorrhiza*) cultivated in Vietnam**

Our invention on bioactive constituents of danshen for cardiovascular protection, bioassay-guided fractionation and chromatographic separation resulted in the isolation of seven phenolic acid analog including 5-O-caffeoyl quinic acid (chlorogenic acid) (1), chlorogenic acid methyl ester (2), rosmarinic acid (3), rosmarinic acid methyl ester (4), rosmarinic acid ethyl ester (5), salvianolic acid A methyl ester (6), and salvianolic acid A ethyl ester (7), respectively. In addition, the total oxy-radical scavenging capacity (TOSC) against peroxyl radicals for the first time revealed that all seven isolated compounds (1-7) exhibited potent scavenging capacity and, especially, salvianolic acid A methyl ester (6) and salvianolic acid A ethyl ester (7) were antioxidatively stronger than the positive controls (trolox and quercetin).

VN-03	NAME(S)	**Nguyễn Sơn Bách / Nguyễn Quý Đức / Nguyễn Ngọc Minh Châu**
ORGANIZATION		Phan Dinh Phung High School, Ha Noi / Hanoi-Amsterdam High School for the Gifted / Foreign language specialized School, Hanoi
ENTRY TITLE		**Chu Teu**

This invention is filed patent. This innovation presents a "Chu Teu", made out of wood - environmentally friendly, his hand can wave help attract customer's attention. Most importantly, on the shoulder of the Chu Teu is smart camera uses an innovative method for facial recognition, Emotion recognition. That can customer recognition, to improve your customer service and increase sales performance.

VN-04	NAME(S)	**Ta Khoi Nguyen / Tran Phuong Thao / Tran Thach Thao**
ORGANIZATION		Dao Duy Tu High School, Thai Nguyen province
ENTRY TITLE		**A self-propelled robot designed for firefighting**

This robot was designed to the automatic firefighting purposes basing on Arduino microcontroller. The Arduino were responsible for controlling all activities of the robot. The others components such as motors, a NRF24L01 wireless transceiver module, a gas sensor, an ultrasonic sensor, temperature sensor and inferred sensors were used to move the robot, communicate between robot and other device, detect smoke, avoid obstacle, detect temperature and fire, respectively. The robot can move to a fire area where fireman cannot approach. Besides, the robot can self-detect a fire position, density of smoke and surrounding temperature. The information of fire can be transferred out by wireless. If the fire is detected, the robot will extinguish it automatically.

VN-05	NAME(S)	**Nguyen Xuan Khanh / Nguyen Binh Minh / Ngo Yen Linh**
ORGANIZATION		Dao Duy Tu High School, Thai Nguyen province
ENTRY TITLE		**The air quality and humidity control device for a smart home**

This device can measure CO2 concentration and give warning of dangerous levels as well as opens the ventilation fan to blow fresh air from outside. This device was demonstrated to reduce the power consumption of the air conditioner and be useful for health. It uses wireless communication control components, controlling and displaying environment parameters in main module so that people is easy to monitor, protect human health and save energy, improving environment conditions.

YEMEN

YE-01	NAME(S)	Mohammed Yahya Maude
ORGANIZATION		The Union Of Arab Academics
ENTRY TITLE		**Manual Charging Stick**

The electric stick is defined as a stick, electric circuits, staplers, and dynamos, which are used by manual pressing or pressing during walking and are automatically charged. The electric energy is then stored through the hoax of the charge and discharged through a switch controlled by light and need. It can be used for phone charging, bulb lighting and radio operation. And a number of purposes.

YE-02	NAME(S)	Mohammed Yahya Maude
ORGANIZATION		The Union Of Arab Academics
ENTRY TITLE		**Sniper laser Training Security**

It consists of two electrical devices, one transmitter consisting of a laser pistol and the other a receiver, which is a laser beam pickup, thus affecting the impact and injury of the target. It is used by laser on multiple distances.

YE-03	NAME(S)	WAFA AHMED ALI AL- ADWAR
ORGANIZATION		The Union Of Arab Academics
ENTRY TITLE		**Melting Plant**

Melting Plant kind of herbs that used for treatment and medicine. It contains carotene, iron and the ability of general antioxidant. Improves skin appearance and eliminates dark circles and swollen eyelids. Used to standardize and whiten skin. Helps treat white stretch lines and remove them from the body. The nutritional values of the plant The plant is the richest of the natural sources of vitamin C, and contains many vitamins such as vitamin B complex and carotene, and contains a different group

YE-04	NAME(S)	SAMERAH YAHYA MOUED
ORGANIZATION		The Union Of Arab Academics
ENTRY TITLE		**Censor Made Of Mud. Electric Burner**

It uses electricity to burn incense instead of coal that pollutes the atmosphere. Characteristics: 1_ Environment friendly. 2_ Economical It consumes 40- 60 Walt and 220 voltage. _ It produces pleasant incense without the bad smell of exhaust. _ It integrates the Yemeni style with the modern technology. The current output is generally related to electrical vaporizers, particularly electrochemical vaporizers

YE-05	NAME(S)	Aiman Abdulkareem Yahya Albasir
ORGANIZATION		The Union Of Arab Academics
ENTRY TITLE		**Generated electric power without fuel**

The system works to generate electricity without the need to use fuel This system works mainly to exploit the power of nature to move the accelerator generator to produce electricity.

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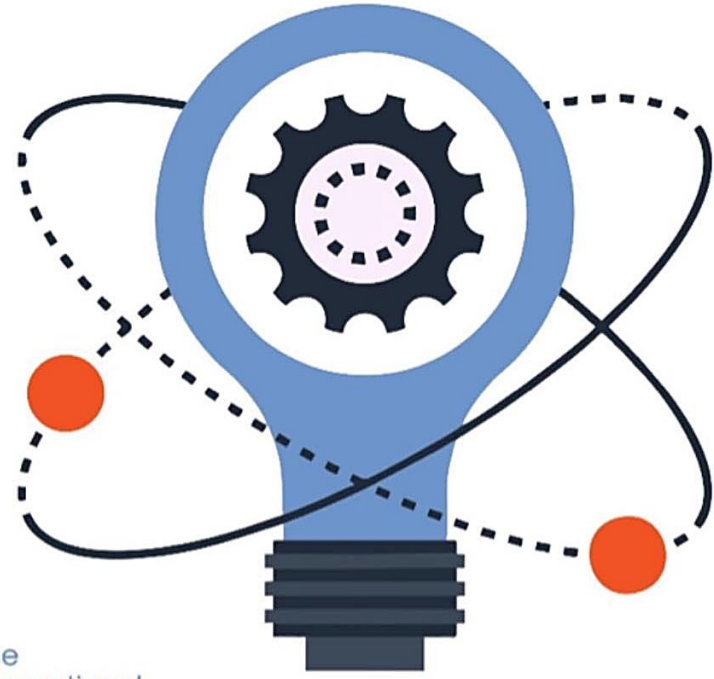

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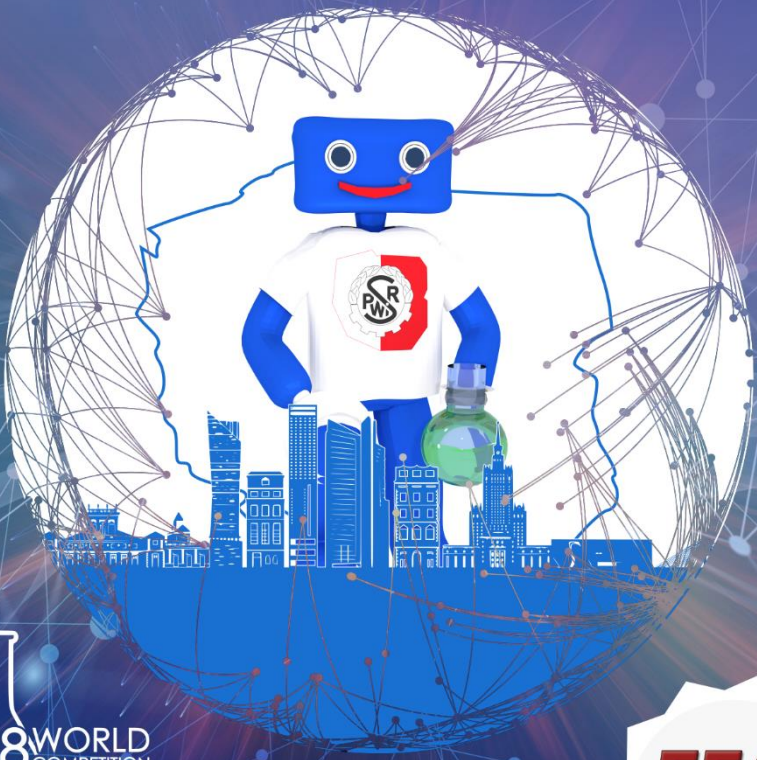

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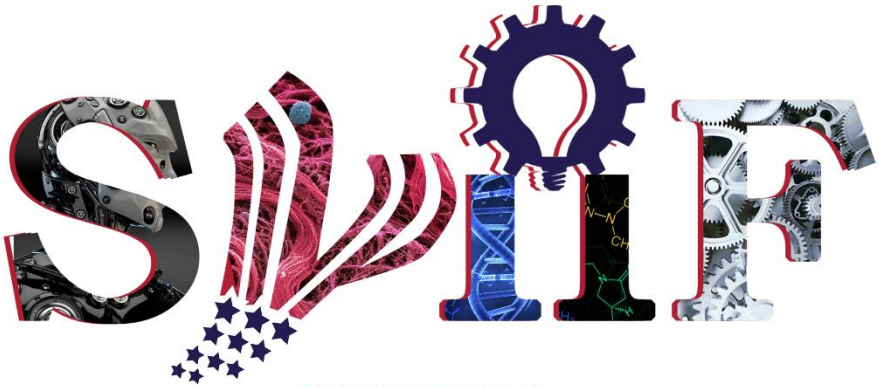

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