



MALAYSIAN INVENTION & DESIGN SOCIETY NEWSLETTER

PP 18717/03/2015(034152)

APRIL 2024 ISSUE

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Patron YAB Tun Dr Mahathir Mohamad MINDS Executive Committee (2022 -2024) President: Academician Emeritus Prof Tan Sri Datuk Dr Augustine S H Ong Vice President Datuk Dr Choo Yuen May Honorary Secretary Prof Dr Lee Chien Sing Honorary Treasurer Ms Christine Ong Committee Members Mr Tan Kim Seng Mr Ahmad Ezzat Ismail Mr Myocho Kan Dr S Ravigadevi Prof Ir Dr Leong Wai Yie Major ® A. Munusamy Inv. Cheah Bok Eng Executive Secretary Ms Crystal Ann Bastin Editor Dr S Ravigadevi Malaysian Invention & Design Society C3A-10, 4th Floor Block C Damansara Intan No 1, Jalan SS20/27 47400 Petaling Jaya, Selangor Tel: (60) 3 7118 2066/64 HP: (60) 12 903 212 Email: minds.secretariat@gmail.com Website: www.minds.net.my Percetakan Soon Li Heng No. 15 Jalan Besar, Selayang Baru 68100 Batu Caves, Selangor Tel: (60) 3 6138 5672 Fax: (60) 3 6138 7180	EDITOR'S NOTE In the world of innovation, talent knows no boundaries, and recent events have demonstrated Malaysia's remarkable prowess on the global stage. From young inventors making waves in international competitions to groundbreaking achievements at renowned exhibitions, Malaysian ingenuity continues to shine bright. The Hong Kong International Student Innovation Invention Contest (HKISIIC 2023) witnessed the remarkable performance of students from SJKC Ying Wah School. Their creations, the Flexi Mira Spray and the CODOT Kit, not only impressed the judges but also showcased Malaysia's potential for innovation on an international platform. The MINDS delegation left an indelible mark at the Bangkok International Intellectual Property Invention, Innovation, and Technology Exposition (IPITEX 2024). With an astounding total of 110 awards, including 26 Gold, 59 Silver, and 25 Bronze medals, Malaysian inventors have once again proven their exceptional talent and creativity. Universiti Malaysia Sabah (UMS) emerged as a beacon of success at ITEX 2023, securing the highest number of gold medals among its peers. With 13 gold medals, six silver medals, and four special awards, UMS showcased its commitment to innovation and excellence. Multimedia University (MMU) stood out with its impressive performance at ITEX 2023. Clinching 11 Gold and 9 Silver Awards, MMU exemplified innovation at its finest, with groundbreaking inventions that are poised to make a significant impact. Monash University earned awards in every entry at ITEX 2023. With 3 Gold and 5 Silver Awards, including cutting-edge innovations like an injectable nanocomposite hydrogel-based tissue scaffold, Monash exemplifies excellence in research and innovation. MINDS proudly celebrates Dr. Leong Wai Yie's exceptional achievement in winning the 2023 INWES Distinguished Woman in Engineering Award. Dr. Leong's contributions to the field exemplify Malaysia's commitment to empowering women in STEM and driving innovation forward. As we look ahead, exciting events like ITEX 2024 and the Malaysia Invention and Innovator Convention (MYIIC) are on the horizon. These platforms will continue to showcase Malaysia's vibrant innovation ecosystem and provide opportunities for collaboration and growth. Innovation knows no bounds, and Malaysia's journey of discovery and achievement is far from over. As we celebrate these milestones, let us continue to nurture creativity, inspire future generations, and push the boundaries of what is possible.
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FOREWORD BY PRESIDENT OF MINDS

YBHG ACADEMICIAN EMERITUS PROF. TAN SRI DATUK DR AUGUSTINE S. H. ONG
PRESIDENT, MALAYSIAN INVENTION AND DESIGN SOCIETY



The founders of MINDS had a vision to encourage Malaysians to be creative, inventive and innovative. Thus, as early as 1989, an inaugural exhibition of inventions under the title MINDEX was held and 50 inventions were showcased.

Since then, the MINDS exhibition has been held annually. This event has evolved into the Invention, Innovation and Technology Exhibition (ITEX) and jointly organized with CIS. During the span of 35 years, the annual number of inventions has steadily risen to 1000 with a dip during the pandemic years. However, for ITEX 2024, the number expected is over 650. Over the period the total number of inventions has reached 15,000 and viewed by about 200,000 visitors. We are encouraged by the positive response. Further, Malaysians have been successful in their overseas exhibitions. All these signs are compelling evidence of Malaysians ability to be creative. Thus, while continuing our efforts in ITEX, we are creating another event known as MYIIC (Malaysian Invention and Innovator Convention) where inventors and innovators are recognized for their innovative contributions to society. We look forward to more Malaysian inventions and innovations which will have an impact on the well-being of the people of Malaysia and the world. We are also encouraged by our friends and participants from overseas.

Finally, MINDS would like to thank Dr. Ravigadevi Sambanthamurthi for producing this excellent issue of MINDS Newsletter.

Happy inventing!

Academician Tan Sri Emeritus Prof.Datuk Dr. Augustine S. H. Ong
President
Malaysian Invention and Design Society (MINDS)

YOUNG INVENTORS SHINE AT THE HONG KONG INTERNATIONAL STUDENT INNOVATION INVENTION CONTEST HKISIIC 2023

Students from SJKC Ying Wah School impressed at the 2023 Hong Kong International Student Innovation Invention Contest (HKISIIC 2023), held from 14th to 17th December. Their innovative creations, the Flexi Mira Spray and the CODOT Kit, competed alongside entries from Thailand, Mainland China, South Korea, and Macau. The prestigious event was organized by the Yan Chai Hospital Board of Directors and graced by Ms. Chan Mo Ngan, Teresa, Deputy Secretary of Education from the Education Bureau. Led by teacher Teow Chiau Yien, the teams behind each invention comprised Keith Len Jun Kit, Yap Yu Bo, and Loke Yee Qing (Flexi Mira Spray) and Yap Yu Zhe, Elsa Len Zi Xin, and Puah Xiao Heen (CODOT Kit).

The Flexi Mira Spray, a project from the Senior Primary Group, garnered top honours (See further description below). It secured the grand prize, the "International Innovation Award," along with the "Leading Innovation Award" in Macau, a Silver Medal at HKISIIC 2023, and recognition for its creative design at the Formula Derby Open Hong Kong. The Junior Primary Group's CODOT Kit achieved notable success, securing Special Awards in both Hong Kong and Thailand, in addition to a Gold Medal at HKISIIC 2023. Another Malaysian Team that participated in the Senior Group was I Discovery World, Malaysia, for their inventions VACTER MOP PRO and EZ Flip.

Flexi Mira Spray

The Flexi Mira Spray, a clever invention by students of SJKC Ying Wah School, is an eco-friendly and portable way to carry essential liquids on the go. Made from recycled aquarium plastic and a repurposed spray nozzle, it cuts down on plastic waste and purchasing costs. Its economical construction ensures affordability, with each unit costing less than USD1 according to the students. This stylish, wearable spray (think wristband!) boasts a flexible tube that can be filled with various liquids – from hand sanitizer and insect repellent to window cleaner and hair gel – making it a truly versatile tool. With its focus on reusability and recycled materials, the Flexi Mira Spray is a testament to the students' commitment to environmental responsibility. Looking ahead, the inventors envision adding a vibrating sensor to promote frequent handwashing and even a hybrid version that can hold multiple liquids! This innovative and adaptable spray is a shining example of the creativity and forward-thinking mindset of the young inventors.



Grand Prize International Innovation Award for Flexi Mira Spray



Leading Innovation Award, Macau for Flexi Mira Spray



Gold Medal for CODOT Kit



Special Award, HK for CODOT Kit



Participants of HKISIIC 2023



SJK(C) Ying Wah's innovation award winners meet with President of MINDS, Tan Sri Dr Augustine Ong at MINDS HQ



MINDS visit to SJK (C) Ying Wah to discuss opening of a science lab.

MALAYSIAN INNOVATION TAKES CENTRE STAGE AT IPITEX 2024

The Malaysian Invention and Design Society (MINDS) delegation at the Bangkok International Intellectual Property Invention, Innovation and Technology Exposition (IPITEX 2024) achieved remarkable success, bringing home a total of 110 awards! This impressive haul included 26 Gold, 59 Silver, and 25 Bronze medals, showcasing the talent and innovation of Malaysian inventors.

A remarkable 400 inventors from various Malaysian institutions participated in IPITEX 2024, held from 2nd to 7th February. These institutions included schools, universities, and colleges (see list below), reflecting the broad spectrum of Malaysian ingenuity.

Prof. Dr. Leong Wai Yie, leading the MINDS delegation, highlighted the international acclaim garnered by Malaysia's inventions, drawing praise from judges, visitors, and dignitaries like Mr. Megat Farez Zuhairin Zakaria from the Embassy of Malaysia in Bangkok.

IPITEX 2024, under the auspices of the National Research Agency (NRC) and Thailand Ministry of Higher Education, aimed to promote global innovation and invention utilization. It featured a wide array of inventions across various categories, including:

- Medicine and Public Health
- Modern Agriculture
- Environment and Green Technology
- Robotics
- Information and Communication Technology (ICT)

The event facilitated a valuable exchange of knowledge and experience between Malaysian inventors and international counterparts. Over 1000 inventions from more than 25 countries were presented, fostering a collaborative environment for nurturing future generations of inventors. The Malaysian team gained valuable insights and inspiration through interactions with international participants.

Beyond the medals, Malaysian inventions received numerous special awards from esteemed organizations worldwide. These recognitions highlight the global impact and potential of these innovations:

- The Best International Invention Award (Hong Kong)
- Philippine Gold Award for Invention
- Great Prize IPITEX 2024 (Association of European Inventors, Poland)
- Special Award (Indonesia Invention and Innovation Promotion Association)
- Young Innovator Award (Citizen Innovation, Singapore)

400 Strong: A Celebration of Malaysian Invention at IPITEX 2024

The 400 inventors who participated at IPITEX 2024 were from Kolej Vokasional Alor Setar, I Discovery World, Kolej Vokasional Sungai Petani 1, SM St Michael, Penampang, Sabah, INTI International University, Universiti Teknologi Malaysia, Sekolah Kebangsaan Meru, Universiti Tun Hussein Onn Malaysia, Mila University, Sungai Petani Community College, Langkawi Tourism Academy, SJKC Ying Wah, SK Kelana Jaya 1, SJKT Ladang Mount Austin, SJKT Permatang Tinggi, SJKC Chukai Kemaman, Sekolah Berasrama Penuh Integrasi Sabak Bernam, Kolej Komuniti Seberang Jaya, Sekolah Menengah Kebangsaan Ibrahim, Politeknik Tuanku Sultanah Bahiyah, Sk Tanjong Gading, SMK Seksyen 7 Shah Alam, Sultan Abdul Halim Mu'adzam Shah International Islamic University (UNISHAMS), UITM Cawangan Perlis, Universiti Malaysia Sabah, Politeknik Mersing Johor, Universiti Kuala Lumpur, Universiti Pendidikan Sultan Idris, Smk Rantau Panjang, SMK Kota Masai 2, UCSI University, SM Imtiaz YT Kemaman, Smk Ulu Tiram, Sekolah Menengah Teknik Alor Setar, Sk Bukit Kemuning 2, Terengganu State Health Department, SK Seri Paya Batu Pahat Johor, SK Pintas Raya, SK Punan Kluang Johor, SJK Batang Kali, SK Bandar Batu Pahat, Politeknik Sultan Azlan Shah, SMK Dato' Bijaya Setia, Sultan Azlan Shah Polytechnic And SMJK Sin Min.



Special group photo with teachers and principal of SSM St Michael, Sabah after stage presentation



SJKT Permatang Tinggi clinches Silver Award + Special Awards from Egypt, Vietnam, Pakistan, Philippines

SELECTED ITEX 2023 HIGHLIGHTS

The 34th International Invention, Innovation, and Technology Exhibition (ITEX) 2023 showcased an impressive array of 730 inventive entries from 19 countries. Among them, several Malaysian inventions stood out, demonstrating the nation's prowess in innovation and creativity as described below

Golden Victory: UMS Shines Bright at ITEX 2023

Universiti Malaysia Sabah (UMS) achieved a groundbreaking victory at ITEX 2023, securing the highest number of gold medals. Out of 20 innovations presented, UMS garnered 13 gold medals, six silver medals, and four special awards. According to a statement from UMS, this success is the outcome of the dedication and inspired training by the Vice-Chancellor, Prof. Datuk Dr. Kasim Hj. Mansor, and the Deputy Vice-Chancellor (Research and Innovation), Prof. Ir. Dr. Rosalam Hj. Sarbatly. Notably, Associate Professor Dr. Jidon @ Adrian Janaun won the Malaysia Innovative Product Award (MIPA) in the Equipment, Electronics, Machinery category for his innovation entitled Residual Oil Extractor (ROE). He also won the Best Invention Award (Top 3 Grand Winner) for the same product. Another UMS special award winner was Dr. Norhayati Ayob, who won the Best Invention Award in the Household Products category for the innovation Lapohan Artistry. UMS's exceptional performance underscores its commitment to innovation and research. Through the Innovation and Commercialization Centre (PIIP), UMS aims to further translate these achievements into commercial success.



Universiti Malaysia Sabah Team at ITEX 2023

MMU Clinches 11 Golds and 9 Silvers - Innovation at Its Finest

Multimedia University (MMU) clinched 11 Gold and 9 Silver Awards at the 34th International Invention, Innovation and Technology Exhibition 2023 (ITEX 2023), which was held from 11-13 May 2023. Among the gold award winning inventions was i) A Solar-Powered Autonomous Lawnmower for Unevelled Grassland and ii) Mobile Application for Retinal Image Analysis

A Solar-Powered Autonomous Lawnmower for Unevelled Grassland

There's a growing need for eco-friendly alternatives in lawn maintenance. While traditional mowers rely on polluting fuels, human-powered options are becoming less feasible due to labour restrictions. Existing smart lawnmowers offer convenience, but they often struggle with uneven terrain, requiring frequent charging and haven't achieved widespread adoption. To address these challenges, researchers from MMU came up with an innovative solution - a

Solar-Powered Autonomous Lawnmower for Unlevelled Grassland. This innovation leveraged the Theory of Inventive Problem Solving (TRIZ) to tackle key limitations. For instance, to improve manoeuvrability on uneven ground, the design incorporated larger wheels, a pivoting mechanism for flexibility, and a more powerful motor. The need for frequent charging was addressed by reducing the mower's weight and integrating solar panels for on-the-go power generation. Finally, cost reduction strategies and a modular design concept aim to improve market penetration and make maintenance easier. The innovation offers a promising approach to creating a user-friendly and sustainable solution for uneven terrain lawn maintenance.

Mobile Application for Retinal Image Analysis

Smartphone-based fundus photography is gaining traction thanks to portable handheld lenses. This allows for a mobile solution using a computer-assisted diagnostic system (CADS) on a smartphone. Early diagnosis of eye diseases is crucial for preventing vision loss with this system, healthcare professionals can potentially monitor and diagnose various retinal diseases, like diabetic retinopathy (DR), glaucoma, and age-related macular degeneration, right on their phones. MMU researchers employed a clever combination of established filtering techniques and cutting-edge deep learning in their innovation **Mobile Application for Retinal Image Analysis**. For instance, it analyses retinal blood vessels using traditional filters, while relying on deep learning algorithms to detect haemorrhages, microaneurysms, and other crucial features. This combined approach has shown promising results, achieving high accuracy rates in identifying these retinal features. Additionally, the smartphone application can analyse all these features simultaneously within just 30 seconds. While further development using more mobile fundus datasets might improve accuracy, this innovation presents a significant step towards a user-friendly and accessible tool for early eye disease detection.

Monash University's Winning Streak: Awards in Every Entry, Including Cutting-Edge Injectable Nanocomposite Hydrogel

Monash University secured awards in all of its entries, achieving an impressive tally of 3 Gold and 5 Silver Awards out of 8 entries. Its gold award included an injectable nanocomposite hydrogel-based tissue scaffold.

An Injectable Nanocomposite Hydrogel-Based Tissue Scaffold

Injectable hydrogels offer a minimally invasive alternative to invasive surgeries for tissue scaffold implantation. However, their poor mechanical properties limit their utility. Monash University's team developed a novel halloysite nanotube (Hal)-based hydrogel, combining bacterial cellulose, gelatin, and acid-treated Hal. This hydrogel provides structural support for tissue regeneration and enables localized drug delivery. Physical and morphological analyses confirmed injectability, gelling ability, self-healing capability, and biodegradability. The honeycomb-like structure and rough surface of the hydrogel support cell attachment. The hydrogels maintain high moisture content, creating an optimal environment for healing. Importantly, Hal incorporation significantly enhances compressive strength, while antibiotic-loaded hydrogels demonstrated effective antimicrobial activity. This innovation has potential applications in biomedical and tissue engineering, offering minimally invasive delivery and antimicrobial benefits for tissue regeneration.

5TH NATIONAL CONFERENCE ON CONTRIBUTIONS TO NATIONAL DEVELOPMENT BY MALAYSIAN WOMEN

Following the very successful inaugural National Conference on Scientific Achievements by Malaysian Women in 2019 in conjunction with International Women's Day, MINDS has made this an annual event to celebrate women scientists and create a space for inspiration, communication, and networking among women scientists across disciplines. The specific objectives of the Conference series are to:

- inspire female youth to pursue and excel in science, technology and social sciences
- update the public on the contributions by eminent Malaysian Women Scientists
- recognize the outstanding lifetime contributions of a Malaysian Woman Scientist, with the conferment of a Lifetime Scientific Research Achievement Award
- encourage the development and recognise the contributions of an outstanding Young Malaysian Woman Scientist below 40 years, with the conferment of a Young Woman Scientist Award

The 5th National Conference on Contributions to National Development by Malaysian Women Scientists and Inventors was convened as a webinar on March 9th, 2024. A total of 78 participants registered for the Conference which was open to among others, academics, technologists, engineers and other professionals, and students (Upper secondary, Pre-University, Undergraduate and Postgraduate Students). Outstanding women scientists in the fields of Chemical Reaction & Energy Engineering, Ocean and Earth Sciences, Human Anatomy & Neuroscience, Cell & Molecular Biology, Palm Oil Milling Technology & Operations, Oil Palm Biomass Processing Technology, and Soil Sciences & Plant Nutrition described their trailblazing efforts in research and innovation.

Prof. Nor Aishah, honoured with the Outstanding Woman Scientist Lifetime Scientific Research Achievement Award, discussed the pressing issue of palm oil production waste. She highlighted the potential to transform this waste into valuable bio-based products like cellulose fibre and biofuels using innovative chemical engineering methods. She also explored leveraging biogas for methanol and hydrogen production, advocating for a circular economy approach to waste management and sustainability within the oil palm industry.

Dr. Mariatulqabtiah, co-recipient of the Young Woman Scientist Award, discussed her efforts at combatting infectious diseases through inventive vaccine and diagnostic research. Her team's accomplishments include creating a groundbreaking vaccine for avian influenza virus (AIV), employing innovative techniques to enhance immune responses. In addition to vaccine development, Dr. Maria focuses on rapid and affordable diagnostic approaches for various infectious viruses, aiming to bolster Malaysia's diagnostic capacities and emergency response to infectious outbreaks.

At the heart of Dr. Nahrul Hayawin's efforts, as a co-recipient of the Young Woman Scientist Award, lies the conversion of biomass waste into valuable resources. Her research began with exploring vermicompost production from oil palm biomass, harnessing the capabilities of an introduced earthworm species. Dr. Nahrul's innovative endeavors showcase the viability of renewable sources for sustainability within the biorefinery framework. She has effectively extended this methodology to various products, including medium-density fibreboard, composites, biofertilizer, and activated carbon.

In her closing remarks, Datuk Dr. Choo Yuen May, Chairperson of the Organizing Committee and LadyMINDS, emphasized the critical need for our nation to tap into its extensive pool of female talent to drive forward national development initiatives. She underscored the urgency of this endeavour, highlighting the immense potential and invaluable contributions that women can make in shaping the future trajectory of our country.

MINDS
MALAYSIAN INVENTION AND DESIGN SOCIETY

**5TH NATIONAL 2024
CONFERENCE - WEBINAR**
On Contribution to National Development by
Malaysian Women Scientists and Inventors

WELCOME ADDRESS
ACADEMICIAN EMERITUS PROF. TAN EBI
DATUK DR. AUGUSTINE S. H. ONG
PRESIDENT, MINDS

DATE: 9 MARCH, 2024
Start: (UTC+8) 9.00 AM - 1.30PM
WEBINAR

CHAIRPERSON & HOSTS
YENGE DATUK DR. CHOO YUEN MAY, FASE
CHAIRPERSON, MINDS
Chairperson, Organizing Committee
Chairman, LadyMINDS

KEYNOTE ADDRESS
PROF. DR. NOR AISHAH SAIDINA AHMAD
Professor, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
Malaysia (UTM), Johor Bahru, Johor, Malaysia
Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

ASSOC. PROF. DR. MARIATULQABTIAH ABDUL KAZAK
Associate Professor, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
Malaysia (UTM), Johor Bahru, Johor, Malaysia
Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

PL. DR. NAHRUL HAYAWIN BINTI SUDIRAL
Professor, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
Malaysia (UTM), Johor Bahru, Johor, Malaysia
Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

PANEL DISCUSSION
PROF. DR. DR. LEONG WAI YEE
Professor, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
Malaysia (UTM), Johor Bahru, Johor, Malaysia
Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

PROF. DR. LIM PHAIX SEN
Professor, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
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Teknologi Malaysia (2019)

ASSOC. PROF. DR. SHEAH POKE SEE
Associate Professor, Chemical Engineering
Department of Chemical Engineering
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Teknologi Malaysia (2019)

DATUK STELLA AMBROSE
Datuk, Chemical Engineering
Department of Chemical Engineering
Faculty of Engineering, Universiti Teknologi
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Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

DR. WYANNIE VUJAYANATHAN
Dr., Chemical Engineering
Department of Chemical Engineering
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Awards: Distinguished Professor, Universiti
Teknologi Malaysia (2019)

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Group photo from the 5th National Conference on Contribution to National Development by Malaysian Women
Organising Committee Members and Celebrated Scientists:

Extreme Left Top: Y. Bhg. Academician Emeritus Prof. Tan Sri Datuk Dr Augustine Ong; Extreme Left Bottom: Organising Chairperson Datuk Dr. Choo Yuen May; Top Left to Right : Dr. Ravigadevi Sambanthamurthi, Prof. Dr. Lim Phaik Eem, Prof. Dr. Mariatulqabiah Abdu Razak; Middle Left to Right: Module 2 Chair Prof. Ir. Dr. Leong Wai Yie, Assoc. Prof. Cheah Pike-See, TS Dr. Nahrul Hayawin Zainal; Bottom Left to Right: Keynote Speaker Prof. Aishah Saidina Amin, Datin Stella Ambrose and Dr. Jeyanny Vijayanathan

PAKAR PERTANIAN EXPO 2024

The Academy of Tropical Agricultural Science Society (ATAS) actively participated in the Pakar Pertanian Expo 2024 event, which took place from 1-3 March 2024 at MAEPS, Serdang, running from 10 am to 6 pm. This event, organised by Nongyeh Global Sdn Bhd, stands as a premier gathering in Malaysia's agricultural industry, uniting stakeholders for more than just business growth opportunities.

ATAS played a pivotal role by bringing experts to the event, enriching visitors with fresh insights and experiences in agriculture. Notably, Dr. Ting Ho (ATAS Auditor and soil scientist) shared expertise in soil fertilisation and cultivation techniques, while Lincoln (ATAS member and co-founder of Rice Inc.) provided valuable insights into rice cultivation practices.

The opening ceremony was graced by the Deputy Minister of Agriculture and Food Security, YB Muhammad Sabu, with the distinguished presence of ATAS President, Academician Tan Sri Emeritus Prof. Datuk Dr. Augustine S H Ong. The event showcased a total of 280 booths, featuring prominent exhibitors such as Rivil, Persatuan Kebangsaan Pekebun-Pekebun Kecil Malaysia (PKPKM), GreenHouse Engineering Sdn Bhd, and many others.

The event was a resounding success, drawing an impressive attendance of 8,856 visitors, reinforcing its significance in fostering growth and innovation within Malaysia's agricultural landscape.



ATAS Booth at Pakar Pertanian Expo 2024

MALAYSIA'S ENGINEERING MARVEL: THE NEHEMIAH WALL

Have you ever observed the unique hexagonal patterns on flyovers? This architectural marvel is none other than the renowned Nehemiah Wall.

This innovative concept was born from the mind of a Malaysian engineer, Dr. Nehemiah Lee, who found inspiration in the Reinforced Earth concept pioneered by French architect Henri Vidal. Dr. Lee explained, "I've always been fascinated by the notion of constructing walls that not only provide structural strength but also offer versatility and utility."

Comprising three essential elements, Nehemiah Walls feature exterior blocks or facades, compacted soil or sand interiors, and galvanized carbon steel rods that interlock the blocks and reinforce the soil. Thanks to this ingenious design, Nehemiah Walls boast remarkable load-bearing capabilities surpassing conventional concrete structures.

The Nehemiah Wall system was first developed and introduced in Malaysia in 1993. Today, it stands as a testament to Malaysian ingenuity and innovation, with the technology exported to countries like Singapore, India, Bangladesh, Sri Lanka, and Indonesia. Over 2.2 million square meters of Nehemiah Walls, in various heights, configurations, and applications, have been erected worldwide, solidifying their global impact and widespread use.



Nehemiah Wall in the Process Of Construction

Source: <https://www.geosininindo.co.id/post/nehemiah-walls-sistem-perkuatan-tanah-dengan-batang-besi>



Nehemiah Wall

Source: <https://www.nehemiah-grp.com/nehemiah-walls>

MINDS CELEBRATES IR PROF DR LEONG WAI YIE'S TRIUMPH: 2023 INWES DISTINGUISHED WOMAN IN ENGINEERING AWARD



MINDS extends its heartfelt congratulations to its Council Member Ir. Prof Dr Leong Wai Yie for her exceptional achievement in clinching the prestigious 2023 INWES Distinguished Woman in Engineering Award. Hosted by the International Network of Women Engineers and Scientists (INWES) this accolade celebrates Dr. Leong's outstanding

contributions to global capacity building and her unwavering dedication to advancing the representation of women in STEM (Science, Technology, Engineering, and Mathematics). Serving as the Theme-1 Lead of the World Federation of Engineering Organizations (WFEO) Committee on Women in Engineering, Dr. Leong's leadership and advocacy have left an indelible mark on the international engineering community. The award ceremony took place from 3rd to 6th September, 2023, alongside the International Conference of Women Engineers and Scientists (ICWES) at the Aoteo Centre in Auckland, New Zealand. The award was conferred by Prof Dr Jung Sun Kim, President of INWES. Reflecting on her achievement, Dr. Leong expressed her gratitude, stating, "I am honoured to receive the INWES Distinguished Woman in Engineering award. This recognition reflects my commitment to paving the way for aspiring women engineers and embodying the transformative spirit that shapes our global landscape." She further emphasized the pivotal role of organizations like INWES in driving progress for women in science and engineering, underscoring the collective effort required to effect meaningful change.



Left to right: Dr Leong Wai Yie, Prof Jung Sun Kim, INWES President Nelly Sakyi-Hagan, INWES Awards Committee Chair

Source: WFEO website

UPCOMING EVENTS

ITEX 2024



The 35th International Invention, Innovation and Technology Exhibition (ITEX) 2024 is set to return from **16 – 18 May 2024** with one goal in sight: empowering entrepreneurs to transition from scientific discovery to commercial application. ITEX is the region's leading exhibition to showcase new inventions, technologies, and products, targeted at securing investment, manufacturing, and commercialization prospects and partners. The theme for this year's event is **Ai Unleashed: Pioneering the Future with Generative Innovation**.

In line with Malaysia's Commercialization Year, championed by the Ministry of Science, Technology and Innovation, ITEX 2024 will continue to embrace the goal of transforming great ideas into commercial realities. It aims to bridge the gap between research and the marketplace, encouraging the adoption of groundbreaking discoveries and their translation into tangible commercial impact.

Marking its 35th anniversary, ITEX 2024 celebrates a rich history of promoting innovation. The event will culminate in a prestigious awards ceremony and a grand dinner at Malam Budaya Cipta, providing a fitting finale to this exciting showcase of innovation.

Global MINDS 2024



The image shows a promotional poster for the Global MINDS 2024 event. The poster is divided into three main sections: a dark blue left panel with an illustration of two children in lab coats, a white middle panel with text and icons, and a yellow right panel with details and a QR code.

Organised by:  

GLOBAL MINDS 2024

Date: 29 - 30 May 2024
(9.30 AM - 5.30 PM) | **Venue:** National Science Centre, Bukit Kiara KL

ABOUT US

Malaysian Invention and Design Society (MINDS) will be organizing the Global MINDS camp on 29 - 30 May 2024. This two day camp will be held at the National Science Centre, Bukit Kiara where participants ages 9 to 12 can explore arts and science. The objectives of Global MINDS are as follows :

- i) To produce global Malaysians through the learning of the United Nations languages. e.g Multilanguage besides the National Language.
- ii) To inspire creative minds among young Malaysians.
- iii) To promote interest in Science and Technology among young Malaysians.

The event consists of four main modules :

- 1 Introduction to creativity, invention, science and humanities
- 2 Experiment session conducted by National Science Centre
- 3 Painting, and learning speech delivery skills
- 4 Invention Workshop (Stem Ai)

DETAILS

The fee for the event is set at **RM 100** per head and includes in this price are several items as outlined below :

-  We will provide free T-shirt
-  We will provide certificate
-  We will provide breakfast, lunch and afternoon tea
-  Exciting experience at National Science Centre

The registration deadline is at **18th May 2024**

SCAN QR CODE TO REGISTER



Global Minds 2024, hosted by MINDS, is a two-day event from 29th to 30th May designed to ignite creativity, spark a passion for science and technology, and equip young Malaysians with the skills to thrive in our ever-changing world. Tailored for 7 to 12 year olds it promises an exciting adventure filled with discovery and innovation. This programme goes beyond traditional learning. It's a journey that fosters global citizenship, encourages creative thinking, and introduces young minds to the fascinating worlds of science, invention, and the humanities. The modules are:

- Introduction to Creativity, Invention, Science, and Humanities
- Experiment Session conducted by National Science Centre
- Painting
- Learning Speech Delivery Skills
- Invention Workshop (STEM AI)



2024 MALAYSIA INVENTOR & INNOVATOR CONVENTION (MyIIC)

8-10 December 2024 | Universiti Sains Malaysia (Penang)

JOINTLY ORGANISED BY

  **USM**
UNIVERSITI SAINS MALAYSIA

YOUR OPPORTUNITY TO ...

- Network with prolific Malaysian inventors, C-suite leaders and innovation specialists across semiconductor, medical, agricultural and space industries.
- Explore emerging trends in fast-growing industries & innovation showcases by Malaysian engineers/researchers.

Register Now!



Register Before 1st November 2024
(Only 300 Seats Available)

University/College Student	RM 20
MINDS Member	RM 100
Non-MINDS Member	RM 250



myiic.official@gmail.com

GOLD SPONSOR

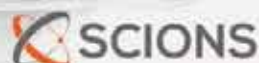


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BRONZE SPONSORS

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Pre-Convention Workshop
Date : 8 Dec 2024 (Sunday)
Venue : Lantai Seni, Kompleks Cahaya (KOMCA),
Universiti Sains Malaysia

Time	Program
1300-1700	Title : Runlic Easy Coding for Internet of Things (IoT) Application Instructor : Miroslav Kostacki (Chief Technology Officer, STEMSEL Foundation)  Join STEMSEL Foundation's electrifying workshop for college and university students. Master "runlic," a groundbreaking coding system that lets you build mind-blowing STEM projects with artificial intelligence (AI) and space tech in just a few hours, not hundreds. Imagine creating inventions like - a system that uses runlic to send data from satellites and visualize it on a map! This hands-on workshop equips you to dominate competitions, become a time-saving pro, and develop a game-changing edge for any business. Be part of the future where Penang truly becomes the place where STEM meets Space! Scan the QR code to witness Krishna's "runlic" space creation come to life! 

Date : 9 Dec 2024 (Monday)
Venue : Dewan Utama Pelajar, Universiti Sains Malaysia

Time	Program
0800-0900	Registration
0900-0910	Welcome Address By YBhg. Academician Tan Sri Emeritus Professor Datuk Dr. Augustine Ong Soon Hock, President, Malaysian Invention & Design Society (MINDS)
0910-0925	Opening Address By Guest of Honor Yang Amat Berhormat Chow Kon Yeow, Chief Minister of Penang
0925-1000	Awards Presentation
1000-1100	Exhibition Tour/Networking Session
1100-1200	Session 1: Innovation in Artificial Intelligence (AI) Era by Mr Ewe Kok Hoeng, Software Engineering Director, Intel
1200-1300	Session 2: Easy Coding: An Accelerator for Internet-of-Things (IoT) Innovation (1) Mr Peng Choo (CEO, STEMSEL Foundation) (2) Mr Miroslav Kostacki (CTO, STEMSEL Foundation)
1300-1400	Lunch Break
1400-1500	Session 3: Innovation in Semiconductor Industry by Ms. Debra Bell, Vice President, DRAM Processing Engineering, Micron
1500-1600	Session 4: Innovation in Medical Industry by Dr. Fu Yongli, Vice President, Research & Development, B Braun
1600-1630	Tea Break
1630-1730	Panel Discussion #1: Conversation with Industry Leaders Moderator: Ms. Ong Wui Leng (Fellow, Penang Institute) Panelists: 1. Mr. Tan Chun Chiat (Chief Operation Officer, Oppstar) 2. Mr. Ewe Kok Hoeng (Engineering Director, Intel) 3. Mr. Peng Choo (Chief Executive Officer, STEMSEL Foundation) 4. Mr. Miroslav Kostacki (Chief Technology Officer, STEMSEL Foundation) 5. Ms. Debra Bell (Vice President, Micron) 6. Dr. Fu Yongli (Vice President, B Braun)

Date : 10 Dec 2024 (Tuesday)
Venue : Dewan Utama Pelajar, Universiti Sains Malaysia

Time	Program
0800-0900	Breakfast
0900-1000	Session 5: Innovation in Modern Agriculture by Professor Dr. Phelin Yung, Taylor's University
1000-1100	Session 6: Legacy of Innovation in Penang's History by Datu' Dr. Ooi Kee Beng, Executive Director, Penang Institute
1100-1200	Session 7: Innovation in Automotive Electronic Packaging by Dr. Eu Poh Leng, Senior Director, Package Innovation, NXP
1200-1300	Session 8: TRIZ: Theory of Inventive Problem Solving by Mr. Tan Eng Hoo, President, Malaysia TRIZ Innovation Association (MyTRIZ)
1300-1400	Lunch Break
1400-1440	Session 9: Intellectual Property by Ms. Fiona Teresa Jeffrey, Senior Associate, Mark & Clark Sdn. Bhd.
1440-1520	Session 10: Aligning Patent with Overall Business Strategy by Mr. Lok Choon Hong, Founder & Managing Director, PINTAS IP Group
1520-1600	Session 11: Journey from Idea to Commercialization by Dr. H. Saitar S. Ennaman, Chief Executive Officer, SCIONS
1600-1630	Tea Break
1630-1730	Panel Discussion #2: Conversation with Innovators Moderator: Dr. Y. Wong Shue Fung (Board Member, REE SPG) Panelists: 1. Dr. Eu Poh Leng (Senior Director, Package Innovation, NXP) 2. Ms. Teoh Hui Kuan (Senior Staff Engineer, B Braun) 3. Dr. Norlita Amilia Ismail (Chief Executive Officer, SpaceIn) 4. Ms. Ravenna Chen (Chief Executive Officer, TusStar Malaysia)
1730-1735	Closing Remark by Mr. Ts. Cheah Bok Eng, Organizing Chair, 2024 Malaysia Inventor & Innovator Convention (MYIIC)

MINDS will be organising the inaugural Malaysia Invention and Innovator Convention (MYIIC) scheduled to take place on the 8th 9th and 10th of December 2024 at Universiti Sains Malaysia, Penang.

This landmark event aims to mobilize local talent for sustainable socio-economic growth. MYIIC will bridge the gap between industry and social needs by providing a platform for:

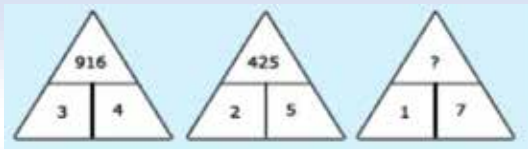
- **Talent Pipeline:** Connecting promising minds from public/private universities and schools with industry investors and innovators.
- **SME Support:** Assisting local Small and Medium Enterprises (SMEs) with intellectual property (IP) creation and protection strategies.

The convention promises a stimulating programme featuring:

- **Industry Leader Presentations:** Gain insights from thought leaders across AI, Semiconductor, Medical Technology, Modern Agriculture, and Intellectual Property.
- **Engaging Panel Discussions:** Participate in interactive sessions that delve deeper into critical innovation themes.
- **Pre-event IoT Workshop:** Get hands-on experience with the Internet of Things (IoT) technology

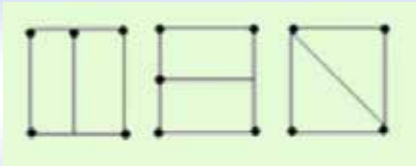
BRAIN TEASERS

A

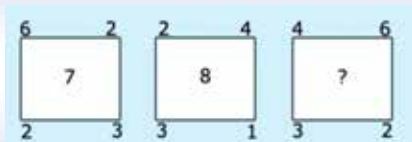


Remove 6 pins to make 10:

B.

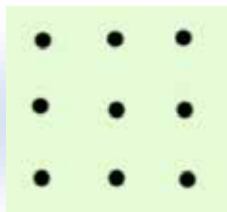


C.



Connect all the dots with only 4 straight lines without lifting the pencil.

D.



Answers

A: 149. Explanation: Triangle 1: $32=9$ and $42=16$ hence 916. Triangle 2: $22=4$ and $52=25$ hence 425 and so on

B: Remove pins from the left, right and bottom of the first figure (3)

Remove pin from the right side of the second figure (1)

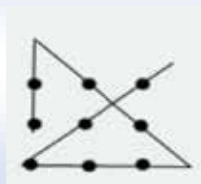
Remove pins from the top and bottom of the third figure (2)

$3+1+2 = 6$

C: 11

$6+4+3 -2 = 11$

D:





2024 MALAYSIA INVENTOR & INNOVATOR CONVENTION (MyIIC)

8-10 December 2024 | Universiti Sains Malaysia (Penang)



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