

i-SPiKE²⁰²³

INTERNATIONAL EXHIBITION & SYMPOSIUM ON PRODUCTIVITY, INNOVATION, KNOWLEDGE & EDUCATION

“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT

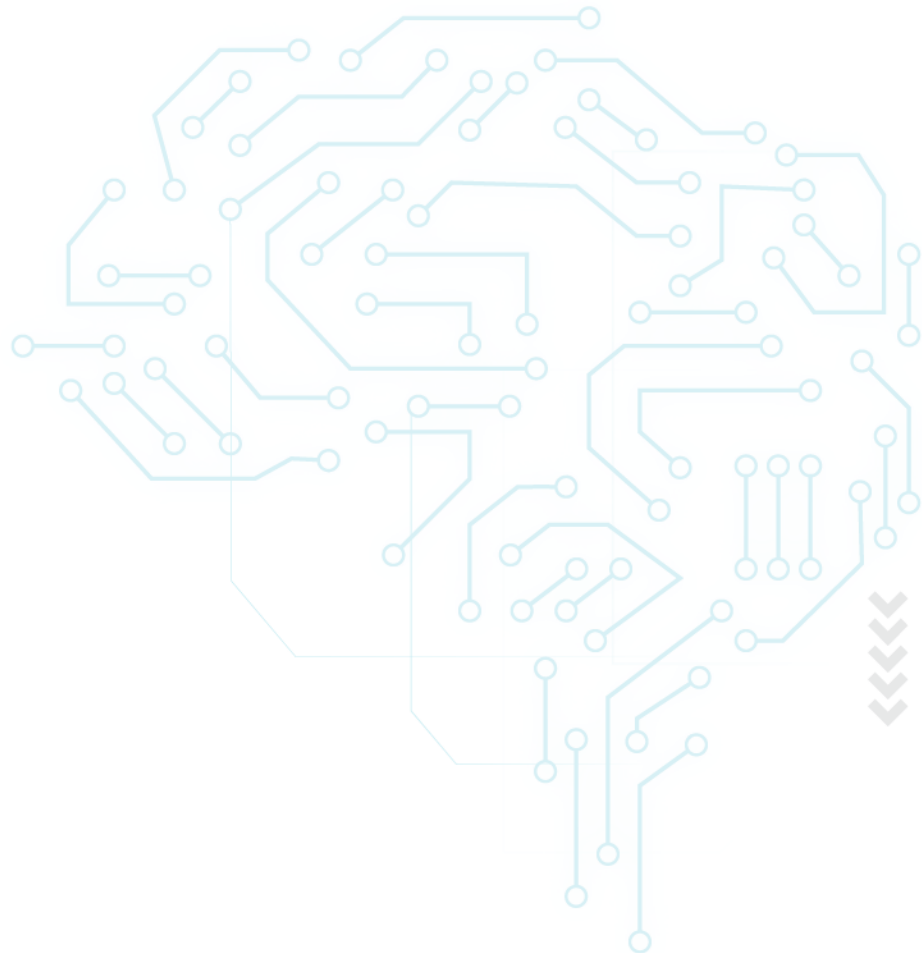


i-SPiKE 2023

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Noraini Binti Sa'ait, Siti Farah Binti Lajim, Nur Ainaa Binti Hasim,
Nathaniel Anak Sanor, Norazrieen Binti Mohd Helmi, Jordan
Juman Buayeh Jeremy & Mohamad Osman Bin Samsudin</i> | 527-531 |
| 30. | <i>Fire Prevention and Safety (FIPRESA)
Aristole Anderson Peter, Azrul Hafiz Bin Riezman, Ellysa Syahira
Binti Mohammad Hartolo, Fhacillyiana Nawie Anak Empatie,
Nurain Binti Shariff, Elizabeth Caroline Augustine & Nur Farhani
Binti Samasu</i> | 532-536 |
| 31. | <i>MicroCol: A Synergistic Approach to Classroom Learning
Nurul Fitriah Alias & Rafiza Abdul Razak</i> | 537-541 |
| 32. | <i>Arabic-KAFA: An Augmented Reality Application for Learning
Arabic Vocabulary
Mohd Akashah Bin Mohamad Yusof, Nasirah Ismail, Muhamad
Zaidi Zakaria, Wan Ab Aziz Wan Daud & Muhammad Taufiq
Abdul Ghani</i> | 542-545 |
| 33. | <i>Developing A Comprehensive Framework for Assessing the
Impact of Political Instability on Foreign Direct Investment Inflows
in Malaysia
Mohamad Aizad Mohamad Azahar & Hafizah Hammad Ahmad
Khan</i> | 546-549 |
| 34. | <i>Access Audit & Scoring Compliance Assessment for The Elderly –
Friendly Mosque. Case Study: Heritage Mosque – Masjid Diraja
Sultan Suleiman & National Mosque of Malaysia
Che Muhamad Hanif Che Wil @ Ismail & Hafiszah Ismail</i> | 550-556 |

CATEGORY: BSP YOUNG INVENTOR

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| 1. | <i>Automatic Key Holder
Nur Alya Syahirah Noor Azahan, Nik Nurfatihah Mohd Termidzi,
Mariam Setapa, Shafiza Safie, Tismazammi Mustafa, Khairunnisa
Rahman & Siti Maziah Ab Rahman</i> | 557-564 |
| 2. | <i>Smart Waste Bins
Nurul Afni Muhammad Amali, Muhammad Baihaki Othman,
Mariam Setapa, Liziana Kamarul Zaman, Wan Asma Hanim Wan
Mustapha, Firdawati Mohamed & Norshaieda Abdullah @
Adnan</i> | 565-573 |
| 3. | <i>Travel Eye – New Way of Travelling
Syairunessa Farhana Mohamad Handal, NurFakiera Mohamad
Yussuf, Nur' Atasha Amiera Nurdin, Muhammad Firdaus Karia &
Adrianna Aziz</i> | 574-578 |
| 4. | <i>Equal Education (e2): Easy-To-Use Application Software to
Provide Awareness on Educational Rights of Children with
Disabilities in Malaysia
Muhammad Fikri Othman, Nur Ezan Rahmat, Norazlina Abdul
Aziz & Hartini Saripan</i> | 579-583 |

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| 5 | CNN-Based Model on Potential Dyslexia Detection Based on Automated Handwriting Features Extraction
<i>Siti Azura Ramlan, Iza Sazanita Isa, Ahmad Puad Ismail, Muhammad Khusairi Osman & Zainal Hisham Che Soh</i> | 584-588 |
| 6. | EDUxic for Dyslexic: A Framework for Teaching Aids
<i>Norarifah Ali, Azhari Md Hashim, Roslinda Alias & Muhammad Nidzam Yaakob</i> | 589-595 |

CATEGORY: BST YOUNG INVENTOR

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| 1. | Flood, Earthquake, Air Pollution (FEAR) Alert and Monitoring System with WiFi Module
<i>Mohd Sufian Ramli, Siti Sufiah Abd Wahid, Khairul Kamarudin Hasan & Danial Zarif Mohammad Zaharuddin</i> | 596-600 |
| 2. | C++ Rush: Interactive Game for Novices in Learning Basic Computer Language
<i>Muhammad Salman Hakim Shaiful Nizam & Arifah Fasha Rosmani</i> | 601-606 |
| 3. | GoBox
<i>Aqib Syahir Bin Ahmad Tarmizee, Ariff Hakimi Bin Ahmad Khusairi, Muhammad Zulhilmi Bin Mohamad Fauzi, Nur Afiqah Binti Zakaria & Nur Nadiyah Binti Zuber</i> | 607-611 |
| 4. | Smart Vision the Smart Projector
<i>Muhammad Hazim Bin Roslan, Harith Danial Bin A.S Azmi, Muhamad Hakim Bin Anuar, Muhammad Faris Syazwi Bin Shukri, Muhammad Zahiruddin Bin Omar, Afidah Binti Sapari & Dr Vani A/P Tanggamani</i> | 612-618 |
| 5. | UniEase
<i>Muhammad Haziq Syukran Bin Abdul Manaf, Muhammad Sallehudin Bin Samudin, Muhammad Syukran Bin Mohamed Desa, Aisya Nurdania Binti Mohd Noor Azian, Alia Hasanah Binti Abdul Rahim, Nurin Syakira Binti Ahmad Zainuddin & Nor 'Asyiqin Abu</i> | 619-622 |
| 6. | Exploring the Potential of Aloe Vera and Coconut Oil in Natural Toothpaste Tablets
<i>Muhammad Nazrul Afiq Zulkifli, Muhammad Irfan Mustakim, Nurul Ain Jaaizah Muhamad Zaki, Nur Syabila Husna Mohd Bakti, Nurul Aimi Zakaria, Zubainun Mohamed Zabidi & Ahmad Nazib Alias</i> | 623-627 |
| 7. | Building Resilient Start-Up: A Comprehensive Strategic Framework for Start-Up Survival
<i>Irme Rafhan Ibrahim, Ammar Yasir Mustafa, Aqilah Hanif, Batrisyia Tihani Hamdan, Maisarah Ruslan, Wan Hafiz Aizuddin Wan Yusoff & Suriana Ramli</i> | 628-638 |

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| 8. | Fostering A Global Talent Mindset for Young Entrepreneurs in Malaysia (Tertiary Level)
<i>Nur Hafizah Binti Ab Aziz, Nurhanim Binti Ibrahim, Mai Tiara Alia Binti Meor Mahaputra, Wan Fatanah Syaza Binti Wan Kefli, Noor Halimatun Saadiyah Binti Mohamed Ayub, Suraya Abdul Karim & Suriana Ramli</i> | 639-649 |
| 9. | New Entrepreneurship Education Framework for Malaysian Secondary Schools Based on Design Thinking, Flipped Classes, and the Korda Method
<i>Nur Atiqah Binti Hamizan, Hafiz Amin Bin Suhaimi, Nur Hidayah Binti Aboo Bakar, Jasnan Bin Jounin, Nur Farahana Binti Zahari, Suzielawati Binti Kahulan & Suriana Binti Ramli</i> | 650-655 |
| 10. | Development of Reporting System for Unsafe Actions and Unsafe Conditions
<i>Ahmad Saiful Ahmad Suhaimi & Aznifa Mahyam Zaharudin</i> | 656-664 |
| 11. | Basalt Fibre Reinforced Polymer Composite Filled with Nano Silica for Green Truck Body Panel
<i>Mohamad Asrofi Muslim, Aidah Jumahat & Shahrul Azam Abdullah</i> | 665-669 |
| 12. | SurfSphere: All-In-One Platform for Surfing Competition
<i>Muhammad Shafiq Angullia Tawfeik Bin Sulleiman Angullia & Ong Yew Chuan</i> | 670-673 |

CATEGORY: CSC YOUNG INVENTOR

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|----|---|---------|
| 1. | Zodia Army
<i>Sharvina Sekaran</i> | 674-678 |
| 2. | IOT Based Drainage Monitoring System
<i>Abhinaashgovin A/L Venoth, Sukhiirtan Sankaran, Sheshan A/L Velan, Atishvar A/L Moganthera Thevar & Sharvin A/L Saravanan</i> | 679-682 |
| 3. | Projek Peningkatan Rangsangan Otak Murid Melalui Inovasi 'Fresh Up Me!'
<i>Muhammad Ashraf Hakimi bin Khairul, Muhammad Nizamudin bin Mohd Johar, Muhammad Aiman bin Muhammad Amin & Lokman bin Ramdan Mohamed</i> | 683-688 |
| 4. | Poplasty AC: Domestic Waste as Activated Carbon for River Water Treatment
<i>Ghazali bin Sabudin, Nur Atiqah binti Akhyani & Norazura binti Jaballudin</i> | 689-693 |
| 5. | Lipellent
<i>Zuriahanim binti Abdul Manan, Batrisyia Aliah binti Mohd Hadaffi, Nur Imanina binti Mohd Ali, Nur Arissa binti Redzuan & Nur Aqilah binti Saiful Bahri</i> | 694-696 |
| 6. | Centennial Garden 'The Smart Way for Green Planting'
<i>Nurhazwani binti Zanuddin, Fakharudin bin Shahudin & Norazura binti Jaballudin</i> | 697-701 |

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| 7. | Sad Nature Bag
<i>Nurul Hazirah Amani binti Hafizal, Khursiah Nur binti Mohamad Amin & Nurulhuda Insyirah binti Khairol Maizi</i> | 702-705 |
| 8. | Mehlcate Giff
<i>Noor Ruzzuwana binti Rahlan, Darshanaa A/P Gunasingam, Dania Balqis binti Rezaman, Aniq Hakimi bin Rozishahlan & Nur Zahirah Aqilah binti Johori</i> | 706-709 |

CATEGORY: CSP YOUNG INVENTOR

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| 1. | Gyroscopic Contactless Head Mouse
<i>Nannabhad Thammultri, Bhandhisa Pongsak, Pakin Teerachotmongkol & Athicha Siriboonlamom</i> | 710-713 |
| 2. | "Imagine Spacing Ruler, Your Writing Buddy"
<i>Saadiah Juliana Saadun, Putri Qisha Nur Iman, Damia Humaira Syuhaimi, Nurul Aina Amilia Mokhtar, Khayra Zarith Khuzairi, Siti Maslinda Syed Musa & Farah Ilyana Azlan</i> | 714-718 |
| 3. | SOAP4LYFE: Soap Used Cooking Oil with Sandal Wood and Black Seed
<i>Irdina Iwani Abd Jalil, Fatin Nur Amira A.Rosman & Fatin Nursabrina Lokman</i> | 719-723 |

CATEGORY: CST YOUNG INVENTOR

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| 1. | Smart Exposure to Artificial Intelligence (AI) Among the Primary School Students
<i>Muhammad Adam bin Helmi, Mohammad Qayyim bin Mohammad Rizal, Muhammad Anas bin Helmi & Adlin Elieza binti Nik Awang</i> | 724-726 |
| 2. | Go Beyond
<i>Raidahwafi binti Jalalin, Madni bin Siadi, Maimunah binti Tajuddin, Mohd Hafiz bin Abdul Karim & Myzan Luqman bin Mohd Yazid</i> | 727-729 |
| 3. | Sustainable Sap Hydrogels Enhance Controlled Urea Release in Agriculture
<i>Maizatul Husna Nasuha Mazlan, Alyasofea Nazrul Hisham, Hatika Kaco & Mohd Shaiful Sajab</i> | 730-736 |
| 4. | Coco M Board (Coconut Multipurpose Board)
<i>Norzalina binti Jenal, Badreyanaliss binti Ignicious Nizam, Farishah Najwa binti Roslan, Nurin Qistina Basyirah binti Rusli, Nur Hidayatul Munirah binti Mohd Zaiton, Nadhirah binti Abdul Halim & Fateha Syahera binti Khairul Anuar</i> | 737-740 |

5.	Matrix Board <i>Muhammad Izzul Haiqal Bin Ismadi, Ahmad Aqil Bin Khalid, Muhammad FakhruRadzi Haiqal Bin Md Ismail, Muhammad Nasrullah Bin Suhaimi & Malik Bin Efendi</i>	741-744
6.	EGNA 3.0 <i>Nur Khaiza Binti Abdullah, Ana Zahra Binti Azman, Nur Umairah Syahmina Binti Mohd Shahrulaza, Nur Anida Farhana Binti Mohd Kairil & Zainab Binti Husain</i>	745-747
7.	GREEN As Model Urban Gardening in School <i>Nayudin Hanif</i>	748-756
8.	IOT Flood Monitoring System <i>Vimalan Pillai A/L Vajathan, Sachinn A/L Dhinakaran, Timothy Nathan A/L Thivianathan, Shaarveen A/L Tamilamuthan & Sanjay A/L Govindasamy</i>	757-760
9.	River Cleaning Robot <i>Yalleni A/P Thayalan, Indujaa A/P Kanaga Naidu, Yogini A/P Venugopal, Sarvina A/P Sasikumar & Thanishka Nair A /P Vimalan</i>	761-764
10.	IOT Based Smart Street Lighting System <i>Shivani Balakrishnan, Darshan A/L Kalidassen, Maniggandan A/L Manimaran, Shweta A/P Sivakumar & Darshanasri Vishnu</i>	765-768
11.	IOT Smart Irrigation Monitoring and Controlling System <i>Thanissa A/P Ganason, Lim Mei Lin, Sagunthali A/P Baskaran, Prishaashree A/P R N Raju & Guruprasath A/L Nanthakumar</i>	769-772
12.	Smart Waste Management System with IOT Monitoring <i>Sachein A/L Kalitazan, Suvarshan A/L Muniswaran, Sheshan A/L Velan, Suvathithan A/L Muniswaran & Dhanesh Shah</i>	773-777
13.	Smart Aquaponic Garden with an IOT Monitoring System <i>T. Yuvan Raj, C. Divashen, K. Nishart Pillaiy, S. Prethhic & S. Rishwin</i>	778-781
14.	Solar Tracker with IOT Monitoring <i>Saathish A/L Kumaran, Abinayashri A/P Srikanth, Hashini A/P K. Navukkarasu, Karthigeyan Utamanseelan & Hamshini A/P Ravachandran</i>	782-785
15.	Morusscented Candle <i>Farehan Binti Fauzi, Lam Mei Shan, Muhamad Haziq Bin Azizan, Syahzanani Binti Mohd Kamal & Muhamad Syamil Bin Zulkhairi</i>	786-788
16.	Paper Mache Mini Whiteboard <i>Keerthika A/P Thinesh, Ahvinaash A/L Vasu & Thanisha Sri A/P Balasingam</i>	789-792
17.	Brain Booster <i>Mohana Murugayan, Loghen Rajakumar & Udayaraj Gobinath</i>	793-797

18.	'OLIVA' Spoon <i>Rhubhambikhei A/P Murugan, Oviyea Balamurugan, Liyona Kannan & Avaneesh Santha Kumar</i>	798-802
19.	CR Spray <i>Syarifah Norziana binti Syed Osman, Muhammad Ilham Husaini bin Azhar, Futra Ramadani bin Saharuddin, Irdina Maisarah binti Ahmad Rafie & Nur Athirah binti Rosdy</i>	803-805
20.	Bio Natural Bromelain Soap with Black Seed <i>Nur Farisya Qistina Alia Binti Abdullah, Nurul Syasya Laiyinah Binti Shahrizul Fardli & Aisyah Binti Che Mohd Azam</i>	806-810
21.	Ecosoap Used Cooking Oil with Coffee and Black Seed <i>Nur Alya Mirza Binti Mohd Hairul Azmi, Anis Munawwarah Binti Ahmad Rizal & Niswah Binti Mohammad Mohdzir</i>	811-815
22.	Eco-Tin Composite Dental Care (ETC) <i>Norazura Binti Jaballudin, Rose Qaisara Binti Ahmad Zaki, Nur Durrani Farhanah Binti Rozuan, Nur Qaseh Rafhanah Binti Mohd Muhaidin & Amierah Humairah Binti Mohd Zairy</i>	816-821
23.	MYCELIA BIO-P <i>Nur Atiqah binti Akhyani, Ghazali Bin Sabudin & Norazura binti Jaballudin</i>	822-827
24.	OPF Paper: Wet Strength in Paper Making from Oil Palm Fronds <i>Fakharudin Bin Shahudin, Haslizaidi Bin Zakaria & Norazura Binti Jaballudin</i>	828-833
25.	Eco-Farming Pocket <i>Norazura binti Jaballudin, Nurhazwani binti Zanuddin & Fakharudin Bin Shahudin</i>	834-838
26.	3 SEKAWAN <i>Aleeya Batrisya binti Abdullah, Nurjannah binti Norazmi & Umi Adawiyah binti Mohamad Saiddin</i>	839-841
27.	Tri-S Innoforagri <i>Nur Huda Haida binti Roslan, Nur Liyana Nabilah binti Fadeli & Nurulain Faqihah binti Nor Sharifuddin</i>	842-846



Assalamualaikum warahmatullahi wabarakatuh,


First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

