

## SCIENTIFIC PROGRAM

Day 1 : Thursday, 24 August 2023		
8:30 a.m.–9:00 a.m.	Conference Registration at <a href="http://www.ri2c-kmutnb.com">www.ri2c-kmutnb.com</a>	
9:00 a.m.–9:05 a.m.	General Introduction of RI <sup>2</sup> C 2023	
9:05 a.m.–9:15 a.m.	Opening Session - Introduction of King Mongkut's University of Technology North Bangkok (KMUTNB) - Welcome Speech from Conference Chair: Professor Somrerk Chandra-Ambhon Vice President for Research and Technology Development of KMUTNB - Opening remark from President of KMUTNB: Professor Suchart Siengchin	
9:15 a.m.–9:30 a.m.	Greeting and Welcoming by Master of Ceremony (MC)	
9:30 a.m.–10:40 a.m.	<b>Keynote Speaker I : Assoc.Prof.Dr. Eugene Kowch</b> (University of Calgary, Canada) <i>Topic : Leading Artificial Intelligence-Enhanced Teaching and Learning in Universities: A New Imperative for Transdisciplinary Innovation in Thailand</i>	
10:40 a.m.–11:50 a.m.	<b>Keynote Speaker II : Dr. Siwarutt Boonyarattanakalin</b> (SMS Corporation Co., Ltd., Thailand) <i>Topic : SMS's innovation for better life</i>	
11:50 a.m.–12:00 p.m.	General Introduction : Guidelines for Presenters	
12:00 p.m.–1:00 p.m.	<b>Break / Sponsor Lunch Presentation</b>	
1:00 p.m.–1:10 p.m.	Welcoming by Master of Ceremony (MC)	
1:10 p.m.–2:20 p.m.	<b>Keynote Speaker III : Prof.Dr. Piya Kovintavewat</b> (Nakhon Pathom Rajabhat University, Thailand) <i>Topic : Signal Detection and Decoding Evolution for High-Density Magnetic Recording Systems</i>	
2:20 p.m.–3:30 p.m.	<b>Keynote Speaker IV : Prof.Dr. Gui Yun Tian</b> (Newcastle University, UK) <i>Topic : Novel Electromagnetic Nondestructive Testing and Evaluation (NDT&amp;E) for Railway</i>	
3:30 p.m.–3:45 p.m.	General Introduction : Guidelines for Presenters	
3:45 p.m.–6:00 p.m.	<b>Parallel sessions (2 rooms)</b>	
	<b>Room I</b> Special session : Innovative Electricals and Electronics (iEE) IEEE-Education & Technology Chapter	<b>Room II</b> Special session : Innovative Electricals and Electronics (iEE) Electromagnetics & Antenna Applications
	1570913773	1570919866
	1570909312	1570925279
	1570928163	1570925283
	1570913944	1570928196
	1570919884	1570938848
	1570919881	1570938851
	1570919736	1570920754
	1570909750	1570945861
	1570919992	

**\*\* Oral Presentation 15 min (12 min presentation + 3 min Q&A) \*\***

## Room I

### Special session : Innovative Electricals and Electronics (iEE)

#### IEEE- Education & Technology Chapter

Chairman : Sasithorn Chookaew

Time	Paper ID	Title	Authors
3:45-4:00 p.m.	1570913773	Artificial Intelligence Avatars for Conversational Agents	Phatthachada Khampuong, Prachyanun Nilsook, Panita Wannapiroon
4:00-4:15 p.m.	1570909312	A Conceptual Framework of a High-performance Digital Education Organization	Surasak Srisawat, Panita Wannapiroon, Prachyanun Nilsook
4:15-4:30 p.m.	1570928163	IoT, 6G and Digital Twin For Smart Campus	Tanapeak Pexyea, Kobkiat Saraubon, Prachyanun Nilsook
4:30-4:45 p.m.	1570913944	Artificial Intelligence Engineering for Predictive Analytics	Sasitorn Issaro, Prachyanun Nilsook, Panita Wannapiroon
4:45-5:00 p.m.	1570919884	Multi Criteria Decision Making for Ranking Digital Vocational Education	Siriporn Chairungruang, Pallop Piriyasurawong, Prachyanun Nilsook
5:00-5:15 p.m.	1570919881	Digital Culture Leadership for Smart Schools	Phiraya Chompoowong, Prachyanun Nilsook, Pallop Piriyasurawong
5:15-5:30 p.m.	1570919736	System Architecture Analysis: Artificial Intelligence of Things	Sant Phanichsiti, Pallop Piriyasurawong, Prachyanun Nilsook
5:30-5:45 p.m.	1570909750	Hyflex Learning with Snoopathon for Metaverse	Jaruwan Karapakdee, Panita Wannapiroon, Prachyanun Nilsook
5:45-6:00 p.m.	1570919992	Intelligent Metaverse Museum Based on the Universal Design to Enhance Immersive Learning Experiences	Sittisak Chomjan, Panita Wannapiroon, Prachyanun Nilsook

## Room II

### Special session : Innovative Electricals and Electronics (iEE)

#### Electromagnetics & Antenna Applications

Chairman : Nonchanutt Chudpooti

Time	Paper ID	Title	Authors
3:45-4:00 p.m.	1570919866	Through-Wall Human Sensing Using mmWave FMCW Radar	Kritthee Phaisiri, Akkarat Boonpoonja, Chainarong Kittiyapunya, Kamol Kaemarungsi, Nonchanutt Chudpooti
4:00-4:15 p.m.	1570925279	The Ultra-Wideband Antipodal Vivaldi Antenna with Diamond Shaped Parasitic Patch	Wanwisa Thaiwirot, Chanikarn Wanna, Nonchanutt Chudpooti
4:15-4:30 p.m.	1570925283	Analysis of Flexible Dual-Band Microstrip Patch Antenna for Wearable Applications	Wanwisa Thaiwirot, Prayoot Akkaraekthalin
4:30-4:45 p.m.	1570928196	Flexible Chipless RFID Sensor for permittivity sensing of Cylindrical Impedance Surface	Rattapong Suwalak, Chuwong Phongcharoenpanich, Danai Torrungrueng, Titipong Lertwiriyaprapa
4:45-5:00 p.m.	1570938848	Illumination and Bandwidth Control Circuit for LED Optical Wireless Transmitter Driver Integrated with Passive Second-order Equaliser for Pipe Robot Application	Kamol Boonlom, Rungrat Viratikul, Ian Robertson, Tim Amsdon, Nonchanutt Chudpooti, Nutapong Somjit
5:00-5:15 p.m.	1570938851	Investigation of Electromagnetic Mode Transition in 220-325-GHz Horn-type Connector	Rungrat Viratikul, Binbin Hong, Panuwat Janpugdee, Nonchanutt Chudpooti, Ian Robertson, Nutapong Somjit
5:15-5:30 p.m.	1570920754	Prospects for Artificial Intelligence and Learning Analytics in Engineering Higher Education	Zhe Wang; Qian Ma; Nutapong Somjit; Ian Robertson
5:30-5:45 p.m.	1570945861	Non-Destructive pH Sensor using 3D-printed honeycomb resonator for Liquid-Mixture Characterization	Patchadaporn Sangpet, Sukanya Chudpooti, Nutapong Somjit, Ian D. Robertson, Prayoot Akkaraekthalin, Nonchanutt Chudpooti

## SCIENTIFIC PROGRAM

Day 2 : Friday, 25 August 2023					
8:30 a.m.– 9:00 a.m.	Conference Registration at <a href="http://www.ri2c-kmutnb.com">www.ri2c-kmutnb.com</a>				
9:00 a.m.– 10:30 a.m.	Parallel sessions (5 rooms)				
	Room I Innovative Sustainable Sciences (iSS)	Room II Innovative Materials Engineering (iME)	Room III Innovative Electricals and Electronics (iEE)	Room IV Innovative Electricals and Electronics (iEE)	Room V Innovative Electricals and Electronics (iEE)
	ISS_10	IME-2023-12	1570925282	1570907557	1570944712
	ISS_11	IME-2023-07	1570928197	1570918026	1570906952
	ISS_17	IME-2023-19	1570928492	1570919552	1570918484
	ISS_01	IME-2023-20	1570944724	1570924054	1570924980
	ISS_04	IME-2023-32	1570938946	1570924735	1570924982
	ISS_07	IME-2023-24	1570925306	1570924968	1570925253
	ISS_08				
ISS_30					
10:30 a.m.– 10:35 a.m.	Break				
10:35 a.m.– 12:15 p.m.	Room I Innovative Sustainable Sciences (iSS)	Room II Innovative Materials Engineering (iME)	Room III Innovative Electricals and Electronics (iEE)	Room IV Innovative Electricals and Electronics (iEE)	Room V Innovative Electricals and Electronics (iEE)
	ISS_18	IME-2023-25	1570925215	1570915052	1570915764
	ISS_02	IME-2023-02	1570927473	1570925075	1570916969
	ISS_32	IME-2023-03	1570928008	1570924746	1570919251
	ISS_23	IME-2023-28	1570944718	1570925013	1570919431
	ISS_03		1570944720	1570925098	1570924979
12:05 p.m.– 1.00 p.m.	Lunch Break				
1.00 p.m.– 2.45 p.m.	Parallel sessions (5 rooms)				
	Room I Innovative Sustainable Sciences (iSS)	Room II Innovative Materials Engineering (iME)	Room III Innovative Electricals and Electronics (iEE)	Room IV Innovative Electricals and Electronics (iEE)	Room V Innovative Electricals and Electronics (iEE)
	ISS_22	IME-2023-01	1570913957	1570918352	1570920032
	ISS_25	IME-2023-18	1570919531	1570918353	1570920037
	ISS_26	IME-2023-04	1570919578	1570919594	1570922820
	ISS_27	IME-2023-14	1570919751	1570920065	1570923373
	ISS_31	IME-2023-09	1570919805	1570924557	1570924978
	ISS_28	IME-2023-30	1570927969	1570925218	1570913484
	ISS_21		1570928012	1570928091	
	ISS_29				
	ISS_29				
2.45 p.m.– 2.50 p.m.	Break				
2.50 p.m.– 5.15 p.m.	Room I Innovative Sustainable Sciences (iSS)	Room II Innovative Materials Engineering (iME)	Room III Innovative Electricals and Electronics (iEE)	Room IV Innovative Electricals and Electronics (iEE)	Room V Innovative Electricals and Electronics (iEE)
	ISS_05	IME-2023-31	1570918879	Close	1570918870
	ISS_19	IME-2023-11	1570918880		1570918876
	ISS_20		1570918893		1570919947
	ISS_24		1570919620		1570927441
	ISS_12		1570919647		1570944731
	ISS_13		1570920126		1570948031
	ISS_14		1570920922		
	ISS_15				
	ISS_16				

**Room I**

<b>Session : Innovative Sustainable Sciences (iSS)</b>			
<b>Chairman : Atthasit Tawai</b>			
<b>Co-Chairman : Marttin Gundupalli</b>			
<b>Time</b>	<b>Paper ID</b>	<b>Title</b>	<b>Authors</b>
9:00-9:15 a.m.	ISS_10	Optimization of Organosolv Pretreatment with Acid Catalyst to Enhance Enzymatic Saccharification of Corn Husk	Engkarat Buakeaw, Diana Jose, Wawat Rodiahwati, Martin Paulraj Gundupalli, Keerthi Katam, Malinee Sriariyanun, Kraipat Cheenkachorn
9:15-9:30 a.m.	ISS_11	Process optimization of deep eutectic solvent pretreatment of coffee husk biomass	Sukunya Areeya, Marttin Paulraj Gundupalli, Babu Dharmalingam, Baranitharan Paramasivam, Elizabeth Jayex Panakkal
9:30-9:45 a.m.	ISS_17	Effect of oxalic acid pretreatment on enzymatic saccharification of Napier grass for biofuel production	Danipa Panyarachun, Elizabeth Jayex Panakkal, Atthasit Tawai, Wawat Rodiahwati, Baranitharan Paramasivam, Malinee Sriariyanun, Kraipat Cheenkachorn
9:45-10:00 a.m.	ISS_01	The effects of combustion phasing induced by water injection on DeNOx performance of GDI engine at MBT ignition timing	Nattapon Boontek, Kampanart Theinnoi, Sak Sittichompoo
10:00-10:15 a.m.	ISS_04	Activity for Diesel Particulate Matter Oxidation of Silver Supported on Al <sub>2</sub> O <sub>3</sub> , TiO <sub>2</sub> , ZnO, and CeO <sub>2</sub> : The Effect of Oxygen Concentration	Punya Promhuad, Boonlue Sawatmongkhon, Nuwong Chollacoop, Kampanart Theinnoi, Thawatchai Wongchang, Ekachai Juntasaro
10:15-10:30 a.m.	ISS_07	The Influence of Direct Non-Thermal Plasma Treatment on Soot Characteristic under Low Exhaust Gas Temperature	Teerapong Iamcheerangkoon, Nuwong Chollacoop, Boonlue Sawatmongkhon, Thawatchai Wongchang, Kampanart Theinnoi, Ekachai Juntasaro
10:30-10:45 a.m.	ISS_08	Performance analysis of integral process of bio-oil production, bio-oil upgrading, and hydrogen production from sewage sludge	Lida Simasatitkul, Apiwat Lakkhanasombut, Worawit Morin, Supachai Jedsadajerm, Suksun Amornraksa, Karittha Im-orb
10:45-11:00 a.m.	ISS_30	Nano-particle Characteristic Emitted from Gasoline Direct Injection Engine Equipped with Non-Thermal Plasma Device	Pichitpon Neamyong, Kampanart Theinnoi, Boonlue Sawatmongkhon, Sak Sittichompoo
11:00-11:15 a.m.	ISS_18	Manganese Constituent in Stainless Steels Oxidized in Oxygen Containing Water Vapor at 800 °C: High Temperature Oxidation and Volatilization	Methanan Sangsuebsri, Suwijak Pokwitidkul, Panya Wiman, Thammaporn Thublaor
11:15-11:30 a.m.	ISS_02	Development of cellulase immobilization on zinc oxide deposited on zeolite pellet	Tokla EOM, Jantiya Isanapong, Pisist Kumnorkaew, Peerapong Pornwongthong
11:30-11:45 a.m.	ISS_32	Performance Evaluation of Solar Radiation for Food and Agriculture Dryer	Sriwichai Susuk
11:45 a.m.- 12:00 p.m.	ISS_23	Spirulina cultivation using biogas CO <sub>2</sub> as the carbon source: Preliminary study on biomass growth and productivity	Raj Kumar Oruganti, Madhu Kumar Kumara, Rakesh Tejavath, Malinee Sriariyanun, Debraj Bhattacharyya
12:00-12:15 p.m.	ISS_03	Design and development of performance rating apparatus for cold room refrigeration unit using cooling-load balance method	Arruck Tragangoon, Khemapat Tontiwattanukul, Montri Ngamprukvanit, Chayanon Serttikul

**Room I** (continue)

Lunch Break 12:15-1:00: p.m.			
<b>Session : Innovative Sustainable Sciences (iSS)</b> <b>Chairman : Prapakorn Tantayotai</b> <b>Co-Chairman : Theerawut Phusantisampan</b> <b>Co-Chairman : Diana Jose</b>			
Time	Paper ID	Title	Authors
1:00-1:15 p.m.	ISS_22	Progress in Environmental technology patenting and dynamics of Environmental Performance Index	Tatyana Maximova, Dmitry Verzilin, Min Zhang
1:15-1:30 p.m.	ISS_25	Economic assessment of medium and large-scale landfill mining business: Case Study Thailand	Anupong Muttaraid, Sirintornthep Towprayoon, Chart Chiemchaisri, Thapat Silalertruksa, Komsilp Wangyao
1:30-1:45 p.m.	ISS_26	Machine Learning techniques for the design and optimization of Polymer Composites: A Review	J. Maniraj, A. Felix Sahayaraj, C. Ram Kumar, D. Ashok Kumar, I. Jenish, Indran Suyambulingam, M. R. Sanjay, Suchart Siengchin
1:45-2:00 p.m.	ISS_27	Revolutionizing the World with Smart Polymer Composite Materials: A Comprehensive Review	A. Felix Sahayaraj, S. Dharmotharan, D. Sandeep, P. Ramachandran, I. Jenish, Divya Divakaran, Indran Suyambulingam, M. R. Sanjay, Suchart Siengchin
2:00-2:15 p.m.	ISS_31	Mechanical properties of pyrolysis carbon black in rubber compound application	Teerapat Anupabphan, Chonlakarn Wongkhorsub
2:15-2:30 p.m.	ISS_28	Understanding the environmental distribution and potential health risks of pollutants from deodorant products: a review	Meenakshi Kakara, Srideep Dasari, Martin Paulraj Gundupalli, Tawiwan Kangsadan, Keerthi Katam
2:30-2:45 p.m.	ISS_21	Pharmaceuticals and agro-chemicals in groundwater of Hyderabad, India	Kalyani Subbalakshmi Golakoti, Sneha Maloth, Madhu Kumar Kumara, Murali Krishna Sabavath, Malinee Sriariyanun, Debraj Bhattacharyya, Keerthi Katam
2:45-3:00 p.m.	ISS_29	A Comparison of Fiber Types in Community for Mist Collection	Thana Ananacha, Onvalee Amornleetrakul
3:00-3:15 p.m.	ISS_05	Utilization of Nongkhai black jasmine rice bran oils for development of functional drink emulsion	Ketinun Kittipongpittaya, Teerawan Suwan, Piyaruch Kullamethee, Premsak Puangploy, Pattaranan Yimchom, Tanyaporn Intaratul
3:15-3:30 p.m.	ISS_19	Cider production from King mandarin (Citrus nobilis L. Osbeck) and its antioxidant activity	Hao Thien Vo, Bich Ngoc Thi Bui, Chau Minh Luu, Thanh Ngoc Nguyen, Long Dang Hoang Bui, Nhi Yen Thi Tran, Phat Tan Dao, Phong Xuan Huynh
3:30-3:45 p.m.	ISS_20	Antidiabetic Activity and Molecular Docking Analysis of Milky Mushroom (Calocybe indica) Grown on the Renewable Substrate	Anne Sahithi Somavarapu Thomas, Vijaya Lakshmi Murugan Kavitha, Jayapriya Sekar, Mahalakshmi Velmurugan, Vinodhini Shanmugam, Malinee Sriariyanun

**Room I** (continue)

Time	Paper ID	Title	Authors
3:45-4:00 p.m.	ISS_24	Levan production in shake flask and fermenter – influence of feeding strategy on levan yield and molecular weight distribution	Bhuvaneshwari Veerapandian, Saravanan Ramiah Shanmugam, Srividhya Krishnan, Subramaniyasharma Sivaraman, Ponnusami Venkatachalam
4:00-4:15 p.m.	ISS_12	Conversion of lignocellulose residue obtained from biorefinery stream to electricity by microbial fuel cell	Keerthi Katam, Maythee Saisriyoot, Supacharee Roddecha, Peerapong Pornwongthong, Malinee Sriariyanun
4:15-4:30 p.m.	ISS_13	Climate-Conscious Food Preserving Technologies for Food Waste Prevention	Yousif Alhammadi, Doris Ying Ying Tang, Kit Wayne Chew, Suksun Amornraksa, Pau Loke Show
4:30-4:45 p.m.	ISS_14	Ultrasound-Assisted Food Processing: A Mini Review of Mechanisms, Applications, and Challenges	Mahra Alshehhi, Guowei Wu, Tawian Kangsadan, Kit Wayne Chew, Pau Loke Show
4:45-5:00 p.m.	ISS_15	The future of food preservation: active packaging with controlled release systems	Khadija Farousha, Pei En Tham, Suksun Amornraksa, Kit Wayne Chew, Pau Loke Show
5:00-5:15 p.m.	ISS_16	From kimchi to kefir: an exploration of probiotics, benefits, and future	Malak AbuZaid, Sook Sin Chan, Atthasit Tawai, Kit Wayne Chew, Pau Loke Show



**Room II**

**Innovative Materials Engineering (IME)**

**Chairman : Thamrongsin Siripongsakul**

**Co-Chairman : Thammaporn Thublaor**

Time	Paper ID	Title	Authors
9:00-9:15 a.m.	IME-2023-12	The Study of Tensile Effect on Sensitization and Corrosion Resistance of Stainless Steels	Supat Ieamsupapong, Pattarapon Taksina, Thiti Phakdeemee
9:15-9:30 a.m.	IME-2023-07	Oxidation behaviour of hot-rolled steel strips produced from medium and thin slabs in 20% $H_2O-N_2$ at 600-900°C	Seksan Singthanu, Thanasak Nilsonthi
9:30-9:45 a.m.	IME-2023-19	Fracture Prediction of Aluminum Alloy Sheet AA2024-T3 Using Analytical Stress and Experimental Strain Based Failure Criteria	Jurarat Sawangpan, Sansot Panich, Kotchakorn Wiratchakul
9:45-10:00 a.m.	IME-2023-20	Prediction of Tool Wear in Fine Blanking Punch with PVD Coating with TiCN for JIS.SKH51 High Speed Tool Steel using Archard Wear Model	Monrudee Phabsimma, Sansot Panich
10:00-10:15 a.m.	IME-2023-32	Study on the effect of hydrogen in Argon-Nitrogen shielding gas on pitting corrosion for austenitic stainless steel by GTA welding process	Thammaporn Thublaor, Sompong Chueaprakha, Somrerak Chandra-ambhorn, Thamrongsin Siripongsakul
10:15-10:30 a.m.	IME-2023-24	Numerical Investigation of Failure in Epoxy-Based Adhesive Joints	Kerati Suwanpakpraek, Baramee Patamaprohm, Arisara Chaikittiratana
Break 10:30-10:35 a.m.			
10:35-10:50 a.m.	IME-2023-25	Polyethylene glycol (PEG) coated magnetite nanoparticles prepared by Sol-Gel method for Biotechnology Applications	Panakamon Thonglor, Darren Albutt
10:50-11:05 a.m.	IME-2023-02	Preparation and Characterization of Easy Wrap Film Prepared from Domestically Polymeric Materials	Rungsima Yeetsorn, Sunanta Chuayprakong
11:05-11:20 a.m.	IME-2023-03	Controlled Release of Mahaad Extract using Span 80 Co-loaded on a Dendritic Fibrous Silica	Sukanya Thepwatee, Jiradchaya Pramongkit, Pawanrat Kimjui
11:20-11:35 a.m.	IME-2023-28	Role of Pineapple Leaf Microfiber (PALMF) in PALMF-filled Polyurethane Composites for Sustainability	Sunanta Chuayprakong, Taweechai Amornsakchai
Lunch Break 11:35 a.m.-1:00: p.m.			



**Room II** (continue)

<b>Innovative Materials Engineering (iME)</b>			
<b>Chairman : Wanlop Kitisatorn</b>			
<b>Time</b>	<b>Paper ID</b>	<b>Title</b>	<b>Authors</b>
1:00-1:15 p.m.	IME-2023-01	Development of Silver Nanoparticles-Loaded Chitosan/PVA Gel	Jiranan Puangjumpa, Supawadee Jupear, Narumol Kreua-ongarjnukool, Pitt Supaphol, Saowapa T. Niyomthai
1:15-1:30 p.m.	IME-2023-18	Effect of CNT on the physical and electrical properties of CNT/UHMWPE nanocomposite sensor	Patsakorn Longphiew, Surangsee Dechjarern
1:30-1:45 p.m.	IME-2023-04	Preparation and Characterization of a Novel Additive for Elastomeric Polymer from Oligoisoprene Modified Mesoporous Silica	Nathapong Sukhawipat, Laksana Saengdee, Narongrit Sosa, Pongtanawat Khemthong, Jatuporn Wittayakun, Pamela Pasetto
1:45-2:00 p.m.	IME-2023-14	Morphology, thermal and mechanical property of thermoplastic starch biocomposite.	Sirisart Ouajai, Preedawadee Supingkalad, Thanyarat Teropas
2:00-2:15 p.m.	IME-2023-09	Oxidation and Chromium Volatilisation of AISI 430 Stainless Steel in O <sub>2</sub> -H <sub>2</sub> O and Ar-CO <sub>2</sub> -H <sub>2</sub> O at 800°C	Padungaut Srihathai, Supreeya Chaicharoen, Niramom Yamdee, Tanatorn Keawchusaeng, Watcharapon Tengprasert, Panya Wiman, Thammaporn Thublaorg
2:15-2:30 p.m.	IME-2023-30	Recycling PET bottles for 3D-printint Filament: Effect of chain extender	Pornlada Pongmuksuwan, Pornsak Srisungsitthisunti, Naret Intawong
Break 2:30-2:50 p.m.			
2:50-3:05 p.m.	IME-2023-31	Enhancing the performance of soil-cement pavement through modified natural rubber latex with coumarone-Indene resin	Pornlada Pongmuksuwan, Wanlop Kitisatorn
3:05-3:20 p.m.	IME-2023-11	Microstructural characteristics and mechanical properties of AISI 4140 steel clad with WC, Cr <sub>3</sub> C <sub>2</sub> and TiC particles using the gas tungsten arc welding process	Apichart Chaichawalit, Attaphon Kaewvilai, Thanasak Nilsonthi

### Room III

#### Session : Innovative Electricals and Electronics (iEE)

##### Computer, IT, AI and Machine Learning

Chairman : Nattawat Chantasen

Time	Paper ID	Title	Authors
9:00-9:15 a.m.	1570925282	A Comparative Study of Multi-class Sentiment Classification Models for Hotel Customer Reviews	Jantima Polpinij, Kiatnumchai Innork, Khanista Namee, Manasawee Kaenampornpan, Umaporn Saisangchan, Samruan Wiangsamut
9:15-9:30 a.m.	1570928197	Predicting the Close-price of Cryptocurrency Using the Kernel Regression Algorithm	Jantima Polpinij, Khanista Namee, Chumsak Sibunruang, Aniruth Chothanom, Thanachai Khamket, Areej Meny, Rungtip Charoensak, Manasawee Kaenampornpan, Bancha Luaphol
9:30-9:45 a.m.	1570928492	Ballet Gesture Recognition and Evaluation System (Posé Ballet): Dynamic Improvement from Laboratory to Art Gallery	Apirath Limmanee, Pitsini Mano
9:45-10:00 a.m.	1570944724	Computational Based Methodology to Investigate Pipe Thickness Using Thermal Nondestructive Technique	Thiraphat Phuakpewvong, Karuna Tuchinda
10:00-10:15 a.m.	1570938946	A Study on the Influence of Spindle Rotation Speed of Digimatic outside Micrometer	Natthaphon Bun-Athuek
10:15-10:30 a.m.	1570925306	A Case Study of an Adaptive Delta-Stepping Algorithm in OpenMP	Mandeep Khadka, Rachata Ausavarungnirun, Christian Terboven

Break 10:30-10:35 a.m.

#### Session : Innovative Electricals and Electronics (iEE)

##### Communication & IoT

Chairman : Akkachai Phuphanin

Time	Paper ID	Title	Authors
10:35-10:50 a.m.	1570925215	Evaluation of Trickle Timer under Uncertainty Channel	Boonpipob Napisiripakorn, Kanabadee Srisomboon, Wilaiporn Lee
10:50-11:05 a.m.	1570927473	Development and Installation of an Alert System to Reduce Human-Elephant Conflict Using Laser Diodes and Light Sensors in the Forest Interface of Chonburi Province, Thailand	Ruth Phatanacharoen, Chaiyaporn Khemapatapan
11:05-11:20 a.m.	1570928008	Improving Indoor Positioning System using Machine Learning Techniques	Thanapoom Angamnuaysiri, Nawin Poyen, Paradon Siangchin, Kitipoth Wasayangkool, Kanabadee Srisomboon, Wilaiporn Lee
11:20-11:35 a.m.	1570944718	UV C Sterilization Autobot	Sualuck Meesomklin, Nipat Nipatchai, Kullaya Seneewong Na Ayuthaya, Prayoot Akkaraekthalin
11:35-11:50 a.m.	1570944720	ETT Smart Shelve System with Application	Sualuck Meesomklin, Prayoot Akkaraekthalin, Sarawut Anukool, Ekkapol Panyoo, Phanuphong Naraga, Nipat Pholchom, Tanayuk Bamrunpong, Saharat Prodkornburi, Kasama Boonprasertsin, Peerapat Jumnongsri

Lunch Break 11:50 a.m.-1:00: p.m.

**Room III** (continue)

**Session : Innovative Electricals and Electronics (iEE)**

**Electronics and Circuits**

**Chairman : Banyat Boribun**

Time	Paper ID	Title	Authors
1:00-1:15 p.m.	1570913957	Design and Simulation of 4 Bit-Flash ADC for High-Speed Applications	Lokesh Ichchangi, Prashant V Joshi
1:15-1:30 p.m.	1570919531	Dynamic Chinese Character Display Using Microcontroller-Based LED Dot Matrix Billboard	Ke Duan, Ronaldo A Juanatas, Junduo Wang
1:30-1:45 p.m.	1570919578	Design, Fabrication and Experimental Study Lab on a Chip by Screen Printing for Depressive Substance Analysis	Warisara Boonsiri, Kessararat Ugsornrat, Wichayaporn Kamsong, Patiya Pasakon, Chanpen Karuwan, Adisorn Tuantranont
1:45-2:00 p.m.	1570919751	A Second Generation Voltage Conveyor (VCII)-based Transimpedance-mode Instrumentation Amplifier	Montree Siripruchyanun, Burin Theppota, Wiset Saksiri
2:00-2:15 p.m.	1570919805	A Sinusoidal Quadrature Oscillator using VDGA-based All-pass Filters	Burin Theppota, Montree Siripruchyanun
2:15-2:30 p.m.	1570927969	A Low-voltage Four-quadrant Current-mode Precision Multiplier/Divider Employing Single BiCMOS VDGA	Jirawat Hirunporm, Burin Theppota, Montree Siripruchyanun
2:30-2:45 p.m.	1570928012	Enhancement of 8 Leads Small Outline Integrated Circuit Package with AuPd Coated Cu Wire Bonding for Automotive Devices	Nawapat Maneeroth, Kessararat Ugsornrat, Chalernsak Sumithpibul

Break 2:45-2:50 p.m.

**Session : Innovative Electricals and Electronics (iEE)**

**Innovation Electrical Education**

**Chairman : Kanokwan Klinieam**

Time	Paper ID	Title	Authors
2:50-3:05 p.m.	1570918879	Enhancing understanding of electrical systems in Simulink through game-based learning	Mohammad Afkar, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak, Serge Pierfederici
3:05-3:20 p.m.	1570918880	Teaching Method Based On Recognizing Personal Characteristics in Renewable energy program	Omid Arefian, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak
3:20-3:35 p.m.	1570918893	Educating execution of a DC-DC converter model in the MATLAB/Simulink software by connecting blocks	Amirhosein Mansouri, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak
3:35-3:50 p.m.	1570919620	Multi-Purposeful Visualization Card: A Creative Teaching Tool For Attractive Engineering Education	Alireza Parsay, Mahdi Gandomzadeh, Aslan Gholami, Matheepot Phattanasak, Roghayeh Gavagsaz-Ghoachani
3:50-4:05 p.m.	1570919647	Learning modeling based on visual and auditory sense in engineering education	Seyed Ali Alenabi, Matheepot Phattanasak, Roghayeh Gavagsaz-Ghoachani
4:05-4:20 p.m.	1570920126	Teaching renewable energy engineering with gifs and memes: an innovative approach to education	Vanoosheh Ghazanfari Savadkoohi, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak
4:20-4:35 p.m.	1570920922	Empirical learning through the collective involvement of individuals in the field of switching DC-DC converters	Mohammad Afkar, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak, Serge Pierfederici

**Room IV**

**Session : Innovative Electricals and Electronics (iEE)**

**Control, Measurement, and Robotics**

**Chairman : Chanin Joochim**

Time	Paper ID	Title	Authors
9:00-9:15 a.m.	1570907557	Stride length estimation using Fuzzy logic and a single shoe mounted IMU sensor	Niramon Ruangpayoongsak
9:15-9:30 a.m.	1570918026	The Propose Optimal Target Time by SKU in The Process of Loading Goods Using Tecnomatix Plant Simulation: A Pet Food Manufacturing Company Case Study	Kawintida Chantabut, Srisawat Supsomboon, Anan Butrat
9:30-9:45 a.m.	1570919552	Design of PLC-Integrated Object Detection for Categorizing Conveyor	Nuttapon Rothong, Borihan Butsanlee
9:45-10:00 a.m.	1570924054	Analysis of Longitudinal Rail Vehicle Dynamic and Design of Controller for Slip/Slide Protection	Surasak Roikrong, Chirdpong Deelertpaiboon
10:00-10:15 a.m.	1570924735	Development of an Autonomous Robotic Boat for Localization of Electricity Leakage in Water	Witthawas Pongyart, Nattapat Pongyart
10:15-10:30 a.m.	1570924968	Design and development of hand movement detection device for sign language using IMU and sEMG sensors	Niti Petranon, Sumet Umchid

Break 10:30-10:35 a.m.

**Session : Innovative Electricals and Electronics (iEE)**

**Statistics**

**Chairman : Nuanpan Lawson**

Time	Paper ID	Title	Authors
10:35-10:50 a.m.	1570915052	Some Properties and Parameter Estimation of Length-Biased of Maxwell-Boltzmann Distribution	Wikanda Phaphan, Ibrahim Abdullahi
10:50-11:05 a.m.	1570925075	Numerical Integral Equation Methods of Average Run Length on EWMA Control Chart for ARMAX(1, 1, r) with Exogenous Variables and Application	Kanita Petcharat
11:05-11:20 a.m.	1570924746	On Performance of New Mixed Nonparametric EWMA-MA-Sign Control Chart to Monitor Mean Change and Its Application	Weerawat Sudsutad, Saowanit Sukparungsee, Yupaporn Areepong
11:20-11:35 a.m.	1570925013	Performance Comparison of Numerical Integral Equation Methods on DMEWMA Control Chart for Moving Average Process Order q	Julalak Neammai, Yupaporn Areepong, Saowanit Sukparungsee
11:35-11:50 a.m.	1570925098	Numerical Integral Equation Methods of Average Run Length on Triple EWMA Control Chart for Autoregressive Process	Sirawit Makaew, Yupaporn Areepong, Saowanit Sukparungsee

Lunch Break 11:50 a.m.-1:00: p.m.

**Room IV** (continue)

**Session : Innovative Electricals and Electronics (iEE)**

**Signal and Image Processing**

**Chairman : Kanabadee Srisomboon**

<b>Time</b>	<b>Paper ID</b>	<b>Title</b>	<b>Authors</b>
1:00-1:15 p.m.	1570918352	The System Operates by Capturing Images of the Wall Surface and Applying Advanced Image Processing Algorithms to Analyze the Visual Data	Worawut Yimyam
1:15-1:30 p.m.	1570918353	Eggs Separation Process by Image Processing	Worawut Yimyam
1:30-1:45 p.m.	1570919594	The License Plate Recognition system for tracking stolen vehicles	Thidarat Pinthong, Worawut Yimyam
1:45-2:00 p.m.	1570920065	Automated Image Recognition for Consumer Behavior Analysis: Histogram of Orientation Gradient	Thidarat Pinthong, Worawut Yimyam
2:00-2:15 p.m.	1570924557	Detection and Recognition of Vehicle Components Using Image Processing and Deep Learning Techniques	Patiyuth Pramkeaw, Mahasak Ketcham, Thittaporn Ganokratanaa, Narumol Chumuang, Phumraphi Boonthai
2:15-2:30 p.m.	1570925218	The Alternative Abnormality Discovery and Recovery Algorithm Rooted on MDBUT-Mean Filter for CAIA	Vorapoj Patanavijit, Kanabadee Srisomboon, Wilaiporn Lee, Kornkamol Thakulsukanant
2:30-2:45 p.m.	1570928091	Denoising of Heart Sounds using Transform domain Adaptive Line Enhancer	Witthawas Pongyart, Nattapat Pongyart

## Room V

### Session : Innovative Electricals and Electronics (iEE)

#### Computer, IT, AI and Machine Learning

Chairman : Pongsarun Boonyopakorn

Time	Paper ID	Title	Authors
9:00-9:15 a.m.	1570944712	Time Series based Emotion Classification Algorithm exploiting Deep Learning	Phutipong Eiamcharoen, Kanabadee Srisomboon
9:15-9:30 a.m.	1570906952	Combining Machine Learning Models with ARIMA for COVID-19 Epidemic in Thailand	Wikanda Phaphan, Wararit Panichkitkosolkul, Patchanok Srisuradetchai
9:30-9:45 a.m.	1570918484	Factors Affecting Mathematics Achievement: Analysis of Learner Characteristics and Competencies	Siranee Nuchitprasitchai, Sakchai Tangprasert, Nalinpat Bhumpenpein, Yuenyong Nilsiam, Supakrit Yodpaka
9:45-10:00 a.m.	1570924980	Recognizing and Understanding Sport Activities based on Wearable Sensor Signals using Deep Residual Network	Sakorn Mekruksavanich, Ponnipa Jantawong, Anuchit Jitpattanakul
10:00-10:15 a.m.	1570924982	Improving Lower Limb Activity Recognition Based on Inertial Sensors using CNN-LSTM Network	Sakorn Mekruksavanich, Ponnipa Jantawong, Anuchit Jitpattanakul
10:15-10:30 a.m.	1570925253	Active Filtering Co-occurrence and Ontology Graph: AFCO for Search Algorithm	Nataporn Thammabunwarit, Maleerat Maliyaem, Amornvit Vatcharaphrueksadee, Puttakul Sakul-Ung

Break 10:30-10:35 a.m.

### Session : Innovative Electricals and Electronics (iEE)

#### Computer, IT, AI and Machine Learning

Chairman : Nattawat Chantasen

Time	Paper ID	Title	Authors
10:35-10:50 a.m.	1570915764	Data-Driven Heart Disease Risk Prediction with Machine Learning on Healthcare Datasets	Sakchai Tangprasert, Ravipa Sonthana, Siranee Nuchitprasitchai, Nalinpat Bhumpenpein, Yuenyong Nilsiam
10:50-11:05 a.m.	1570916969	Computer-Assisted Qualitative Data Analysis in the Healthcare Cold Chain	Kasin Ransikarbum, Chewaphorn Chaiyaphan, Mathukorn Sainakham
11:05-11:20 a.m.	1570919251	A simplified volume of fluid method for interface tracking on adaptive Cartesian grids	Galing Tirtojati Suwito, Julian Vorspohl, Ekachai Juntasaro
11:20-11:35 a.m.	1570919431	Predictive Maintenance Using Machine Learning	Natthakarn Limprasert, Thanthiya Thimtheang, Kanyanut Wattanakul, Teerawat Sangpet, Temsiri Sapsaman
11:35-11:50 a.m.	1570924979	Attention Based Hybrid Deep Learning Network for Locomotive Mode Recognition in Natural Environments using Wearable Sensors	Sakorn Mekruksavanich, Ponnipa Jantawong, Anuchit Jitpattanakul

Lunch Break 11:50 a.m.-1:00: p.m.

**Room V** (continue)

**Session : Innovative Electricals and Electronics (iEE)**

**Computer, IT, AI and Machine Learning**

**Chairman : Tanapon Jentsuttiwetchakul**

Time	Paper ID	Title	Authors
1:00-1:15 p.m.	1570920032	Efficient Attendance Monitoring System (EAMS) using Haar Cascade and Local Binary Pattern Histogram Algorithm	Siranee Nuchitprasitchai, Pudsadee Boonrawd, Suwanna Bulao
1:15-1:30 p.m.	1570920037	Develop Type-2 Fuzzy Controller from Optimization of the Type-1 Fuzzy for the Engine Control using the Bee Colony Optimization Technique	Somporn Tiacharoen
1:30-1:45 p.m.	1570922820	Exploring Using Segment Anything Model to Assist Ground Truth Preparation for Timber Scaffolding Segmentation	Natthapol Saovana
1:45-2:00 p.m.	1570923373	Analysis of Customer Clustering for Make-To-Order Manufacturing Company	Phattarasaya Tantiwattanakul, Athakorn Kengpol
2:00-2:15 p.m.	1570924978	Human Activity Recognition and Payload Classification for Low-Back Exoskeletons using Deep Residual Network	Sakorn Mekruksavanich, Ponnipa Jantawong, Anuchit Jitpattanakul
2:15-2:30 p.m.	1570913484	Skin Cancer Detection Using Semi-Unsupervised Deep Learning in Generative Adversarial Networks: A Study on Melanoma Detection	Quang Nhat Tran, Siranee Nuchitprasitchai, Lu Suo, Russarin Jiraruttrakul, Sirirat Kakarndee

Break 2:30-2:50 p.m.

**Session : Innovative Electricals and Electronics (iEE)**

**Power Electronics and Other related areas**

**Chairman : Dusit Uthitsunthorn**

Time	Paper ID	Title	Authors
2:50-3:05 p.m.	1570918870	Current and capacitor-voltage balancing controls of three-level buck converter	Srimongkhon Udomkaew, Krittayot Sengsui, Wiset Saksiri, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak, Serge Pierfederici
3:05-3:20 p.m.	1570918876	Four-input boost converter for renewable energy applications	Krittayot Sengsui, Srimongkhon Udomkaew, Wiset Saksiri, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak, Serge Pierfederici
3:20-3:35 p.m.	1570919947	Two-output three-level buck converter: current control with capacitors voltage balancing control	Srimongkhon Udomkaew, Krittayot Sengsui, Wiset Saksiri, Roghayeh Gavagsaz-Ghoachani, Matheepot Phattanasak, Serge Pierfederici
3:35-3:50 p.m.	1570927441	Experiment Investigation on Cooling Performance of Lithium-ion Battery Thermal Management System using Flat Heat Pipe	Chokchai Anamtawach, Soontorn Odngam, Chaiyut Sumpavakup
3:50-4:05 p.m.	1570944731	Optimization of Injection Molding Parameters for Isotactic Polypropylene Using Box-Behnken Design: An Empirical Analysis	Nataphon Phupewkeaw
4:05-4:20 p.m.	1570948031	Quadruped Robot Standing Stability on Inclined Plane	Piyapol Thongkloa, Burit Limsamran, Amornphun Phanopas, Wisanu Jitviriyaya