



2019 Research, Invention, and Innovation Congress (RI²C 2019)
11-13 December 2019 at Arnoma Grand Hotel Bangkok

Scientific Program

Day 1 : Wednesday, 11 December 2019

13.00–16.30	Registration / Tutorial session (I – III) Room : Thip-Ubol, Subongkoj, Pathummas (I) Smart Grid “DC Microgrid: Stability Issue & Solutions” (Prof.Dr. Babak Nahid-Mobarakeh; University of Lorraine) (II) Innovative Sensors and LoRaWan Applications (Prof.Dr. Prayoot Akkaraekthalin et al.; KMUTNB) (III) Innovative Materials and Mechanics (Prof.Dr. Oh Seok Kwon; Korea Research Institute of Bioscience & Biotechnology and Prof.Dr. Joachim Kaschta; Friedrich-Alexander-University of Erlangen-Nürnberg) (15.00–15.15 : Coffee Break)
17.30–19.30	Welcome Reception and Dinner (Room : Patamachart, 23 rd floor)

Day 2 : Thursday, 12 December 2019

08.00–09.00	Conference Registration
09.00–09.30	Opening Session (Room : Arnoma II - III)
09.30–10.00	Keynote Lecture I : Prof.Dr. Ashwani K. Gupta (University of Maryland) Topic : International Collaborations with Focus on Energy and Environment
10.00–10.30	Keynote Lecture II : Assoc.Prof.Dr. Yu-Shen Cheng (National Yunlin University of Science and Technology) Topic : Insect based biorefinery: a promising platform for conversion of agroindustrial wastes into value-added products
10.30–11.00	Coffee Break
11.00–11.30	Keynote Lecture III : Assoc.Prof.Dr. Rapeephun Dangtungee (KMUTNB) Topic : Novel functional polymers: Anti-ant and insect polymer masterbatch
11.30–12.00	Keynote Lecture IV : Mrs. Kalyaporn Ungsamatkosa (Robert Bosch Automotive Technologies (Thailand) Co., Ltd) Topic : Trend in Automotive Industry and Implication to Thailand
12.00–13.00	Lunch (Room : Arnoma I & Mango (1 st floor))



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Day 2 : Thursday, 12 December 2019						
13.00–15.00	Parallel sessions (6 rooms)					
	Arnoma II	Arnoma III	Thip-Ubol	Subongkoj	Pathummas	Sarochoa
	Special session for Council of University Presidents of Thailand	<ul style="list-style-type: none"> • Environmental & Energy Technology • Food Science RI2C-0121 RI2C-0162 RI2C-0067 RI2C-0057 RI2C-0060 RI2C-0028 RI2C-0061 RI2C-0085	Electromagnetic Waves and Its Applications RI2C-0155 RI2C-0157 RI2C-0158 RI2C-0160 RI2C-0190 RI2C-0073 RI2C-0164 RI2C-0165	Electrical Circuit Design and Systems RI2C-0084 RI2C-0087 RI2C-0072 RI2C-0069 RI2C-0071 RI2C-0135 RI2C-0065 RI2C-0128 RI2C-0091	Innovative Materials and Mechanics I RI2C-0200 RI2C-0238 RI2C-0202 RI2C-0203 RI2C-0204 RI2C-0205 RI2C-0266	Innovative Materials and Mechanics II Invited Speaker I Invited Speaker II Invited Speaker III RI2C-0218 RI2C-0219 RI2C-0220 RI2C-0221 RI2C-0206
15.00–15.15	Coffee Break					
15.15–17.15	Parallel sessions (6 rooms)					
	Arnoma II	Arnoma III	Thip-Ubol	Subongkoj	Pathummas	Sarochoa
	Special session for Council of University Presidents of Thailand	<ul style="list-style-type: none"> • Environmental & Energy Technology • Food Science RI2C-0144 RI2C-0122 RI2C-0123 RI2C-0154 RI2C-0170 RI2C-0031 RI2C-0126 RI2C-0108 RI2C-0013	Electromagnetic Waves and Its Applications RI2C-0021 RI2C-0148 RI2C-0130 RI2C-0079 RI2C-0037 RI2C-0120 RI2C-0131	Fuel Cell Energy Source for Electric Vehicle Applications RI2C-0178 RI2C-0184 RI2C-0175 RI2C-0049 RI2C-0064 RI2C-0140 RI2C-0141 RI2C-0038 RI2C-0019	Innovative Materials and Mechanics I RI2C-0208 RI2C-0201 RI2C-0210 RI2C-0211 RI2C-0212 RI2C-0213 RI2C-0244 RI2C-0132	Innovative Materials and Mechanics II RI2C-0222 RI2C-0223 RI2C-0224 RI2C-0225 RI2C-0226 RI2C-0227 RI2C-0228 RI2C-0271
18.00–20.00	Banquet Party & Best Paper Award presented (Room : Arnoma I - II)					



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Day 3 : Friday, 13 December 2019						
8:30–10:30	Parallel sessions (6 rooms)					
	Arnoma II	Arnoma III	Thip-Ubol	Subongkoj	Pathummas	Sarochoa
	Operation Systems and Data Information Management Technology RI2C-0102 RI2C-0103 RI2C-0032 RI2C-0035 RI2C-0005 RI2C-0119 RI2C-0007	<ul style="list-style-type: none"> • Food Science • Applied Biotechnology RI2C-0025 RI2C-0042 RI2C-0099 RI2C-0145-0183 RI2C-0100 RI2C-0022 RI2C-0136 RI2C-0083	Wireless Controlling System and Related Topics RI2C-0129 RI2C-0088 RI2C-0089 RI2C-0052 RI2C-0146 RI2C-0081 RI2C-0189 RI2C-0192	Computing and Information Technology RI2C-0010 RI2C-0012 RI2C-0062 RI2C-0093 RI2C-0115 RI2C-0118 RI2C-0016	Innovative Materials and Mechanics III RI2C-0230 RI2C-0231 RI2C-0232 RI2C-0233 RI2C-0234 RI2C-0235 RI2C-0236	Innovative Materials and Mechanics IV RI2C-0250 RI2C-0251 RI2C-0252 RI2C-0209 RI2C-0254 RI2C-0255 RI2C-0256 RI2C-0257
10.30–10.45	Coffee Break					
10.45–12.00	Parallel sessions (6 rooms)					
	Arnoma II	Arnoma III	Thip-Ubol	Subongkoj	Pathummas	Sarochoa
	Operation Systems and Data Information Management Technology RI2C-0152 RI2C-0117 RI2C-0173 RI2C-0188 RI2C-0111	<ul style="list-style-type: none"> • Food Science • Applied Biotechnology RI2C-0156 RI2C-0002 RI2C-0080 RI2C-0133 RI2C-0149 RI2C-0150	Innovative Electricals and Electronics I RI2C-0109 RI2C-0110 RI2C-0074 RI2C-0195 RI2C-0196	Computing and Information Technology RI2C-0033 RI2C-0051 RI2C-0053 RI2C-0066 RI2C-0139	Innovative Materials and Mechanics III RI2C-0237 RI2C-0253 RI2C-0239 RI2C-0240 RI2C-0241	Innovative Materials and Mechanics IV RI2C-0258 RI2C-0259 RI2C-0260 RI2C-0261 RI2C-0262
12.00–13.00	Lunch (Room : Arnoma I & Mango (1st floor))					



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Day 3 : Friday, 13 December 2019						
13.00–15.00	Parallel sessions (5 rooms)					
	Arnoma II	Arnoma III	Thip-Ubol	Subongkoj	Pathummas	Sarochoa
	Innovative Electricals and Electronics II RI2C-0023 RI2C-0114 RI2C-0077 RI2C-0026 RI2C-0180 RI2C-0082	Room preparation for Closing Remarks	Industrial Process Investigation and Related Topics RI2C-0105 RI2C-0176 RI2C-0036 RI2C-0169 RI2C-0041	Computing and Information Technology RI2C-0076 RI2C-0137 RI2C-0142 RI2C-0153 RI2C-0075 RI2C-0127 RI2C-0168	Innovative Materials and Mechanics III RI2C-0242 RI2C-0243 RI2C-0245 RI2C-0246 RI2C-0247 RI2C-0248 RI2C-0249 RI2C-0207	Innovative Materials and Mechanics IV RI2C-0263 RI2C-0264 RI2C-0265 RI2C-0267 RI2C-0268 RI2C-0269 RI2C-0270
15.00–15.30	Closing Remarks (Room : Arnoma III)					

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



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Day 1 : Wednesday, 11 December 2019

13.00–16.30	Registration / Tutorial session (I – III) Room : Thip-Ubol, Subongkoj, Pathummas (I) Smart Grid “DC Microgrid: Stability Issue & Solutions” (Prof.Dr. Babak Nahid-Mobarakeh; University of Lorraine) (II) Innovative Sensors and LoRaWan Applications (Prof.Dr. Prayoot Akkaraekthalin et al.; KMUTNB) (III) Innovative Materials and Mechanics (Prof.Dr. Oh Seok Kwon; Korea Research Institute of Bioscience & Biotechnology) (Prof.Dr. Joachim Kaschta; Friedrich-Alexander-University of Erlangen-Nürnberg)
17.30–19.30	Welcome Reception and Dinner (Room : Patamachart)

Day 2 : Thursday, 12 December 2019

Session: Environmental & Energy Technology (EN)

Food Science (FS)

Room: Arnoma III

Time	Paper ID	Title	Authors
13.00–15.00	RI2C-0121	Carbon Footprint Analysis of Napier Pakchong 1 Grass Plantation in Prachinburi Province	Thanutyot Somjai and Chalita Suwan
	RI2C-0162	Mobility of Polyethylene Glycol-Modified Urethane Acrylate (PMUA) Nanoparticles in Soils	Warapong Tungittiplakorn, Viranart Kongbua, Anyamanee Tulaphan, and Kannika Kaewtawee
	RI2C-0067	Investigation of morphology and photocatalytic activities of electro spun chicken feather keratin/PLA/TiO ₂ /Clay nanofibers	Isarankura Na Ayutthaya Siriorn and Wootthikanokkhan Jatuphorn
	RI2C-0057	Electrochemical Oxygen Reduction Reaction Performance of Water Hyacinth Derived Porous Non-precious Electrocatalyst in Alkaline Media	Kriangsak Ketpang, Jenkamol Prathum, Punnarat Juprasat, Wararak Junla, Kittisak Wichianwat, Apichat Saejio, Chedthawut Poompipatpong, and Noppavan Chanunpanich
	RI2C-0060	Highly Active and Durable Transition Metal-Coordinated Nitrogen Doped Carbon Electrocatalyst for Oxygen Reduction Reaction in Neutral Media	Kriangsak Ketpang, Apikom Boonkitkoon, Nattawan Pitipuech, Chedthawut Poompipatpong, Jakkid Sanetuntikul and Sangaraju Shanmugam
	RI2C-0028	Rapid drying of high-moisture paddy using a pneumatic dryer with corrugated-surface drying column	Chatchai Nimmol, Aswin Yodrux, and Anucha Hirunwat
	RI2C-0061	Input/output Linearization Control Technique for Anaerobic Digestion Reactor with Recirculation	Sura Srisuddee, Malinee Sririyanun, Chanin Panjapornpon, and Atthasit Tawai
	RI2C-0085	Performance and ethanol crossover of passive direct ethanol fuel cell stack	Panuwat Ekdharmasuit
15.15–17.30	RI2C-0144	Preliminary analysis of hydrogen production integrated with proton exchange membrane fuel cell	Lida Simasatitkul, Suksun Amornraksa, Natcha Wangprasert, and Thanaporn Wongjirasavat
	RI2C-0122	Development of Purification Process using Electrocoagulation Technique for Biodiesel Produced via Homogeneous Catalyzed Transesterification Process of Refined Palm Oil	Rossarin Ampairojanawong, Ajalaya Boripun, Sayan Ruankon, Thanapong Suwanasri, and Tawian Kangsadan



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RI2C-0123	Electrocoagulation with AC electrical current at low voltage for separation of crude glycerol from biodiesel product mixture	Warakorn Sakkamas, Ajalaya Boripun, Rossarin Ampairojanawong, Sayan Ruankon, Thanapong Suwanasri, and Tawiwan Kangsadan
RI2C-0154	Catalytic Cracking of Heavy Oil from Waste Plastic in Tapered Circulating Fluidized Bed Riser Reactor	Parinya Khongprom, Thanapat Whansungnoen, Permsak Pienduangsri, Waritnan Wanchan, and Sunun Limtrakul
RI2C-0170	Microwave-assisted pyrolysis of fuel oil for hydrocarbons upgrading	Suksun Amornraksa, and Thanida Sritangthong
RI2C-0031	Criteria Analysis of Food Safety using the Analytic Hierarchy Process (AHP) - A Case study of Thailand's Fresh Markets	Chewaphorn Chaiyaphan, Kasin Ransikarbun
RI2C-0126	Influence of Packaging and Storage Conditions on the Quality and Shelf-life of Chewy Santol (Kraton-Yee) Candies	Phanida Renumarn1 and Natthaya Choosuk
RI2C-0108	Possible intestinal absorption enhancers from Citrus hystrix	May Phyu Thein Maw, Panadda Phattanawasin, Chanokporn Sukonpan, and Nusara Piyapolrungruj
RI2C-0013	Resistant Starch from Mixed Flours (Banana, Jackfruit Seed and Job's Tear) and The Application in Food Product	Ratchanee Charoen, Sakaewan Tasana, Wacharin Somprasong, Sriwiang Rittisak and Wanticha Saveboworn

Session: Innovative Materials and Mechanics (iMM) I

Room: Pathummas

Time	Paper ID	Title	Authors
13.00–15.00	RI2C-0200	Comparative Study on Cutting Force Simulation Using DEFORM 3D Software During High Speed Machining of Ti-6Al-4V	Santosh Kumar Tamang
	RI2C-0238	Experimental Investigation of Steel Confinement of Clustered Large-Size Stud Shear Connector in Full-Depth Precast Bridge Deck Panel	Krissachai Sriboonma
	RI2C-0202	Wrinkling Prediction of Rectangular Cup Deep Drawing Process for Aluminum Alloy Sheets by Using the Modified Yoshida Buckling Test	Tanongsak Bunyan
	RI2C-0203	Effect of Blank Holder Force and Edge Radius on Joining Strength in Flat-Clinching Process	Panuwat Soranansri
	RI2C-0204	A Simplified Element-By-Element Preconditioned Conjugate Gradient Iterative Solver for LEFM Analysis	Sutthisak Phongthanapanich
	RI2C-0205	Implicit Formulation of Assumed Strain Quasi-Conforming Finite Element	Sacharuck Pornpeerakeat
	RI2C-0206	A Microscopic Numerical Simulation of Carbon Dissolution in Different Coke Shapes in the Dripping Zone of Blast Furnace	Jennarong Tungtrongpairoj
	RI2C-0207	Crashworthiness investigation of multi-stage structures designed for underrun protection devices	Saharat Chanthanumataporn
15.15–17.15	RI2C-0208	Real-time Process Monitoring of Laser Welding by Infrared Camera and Image Processing	Boonrit Kaewprachum
	RI2C-0201	Numerical Simulation of Cutting Force in High Speed Machining of Inconel 718	Nabam Teyi
	RI2C-0210	Investigation of Anisotropy Effect on the Material Properties obtained from Biaxial Tests	Yingyot Aue-u-lan
	RI2C-0211	Development of Barkhausen Noise Measuring System for Evaluating Steel Properties: Hardness	Jadsalid Khongpreechar
	RI2C-0212	Case Depth Evaluation of Induction Hardened Steel Using Barkhausen Noise Technique	Porawon Nitjarunkul
	RI2C-0213	Shaft Crack Detection during operation by Using Ultrasonic Technique	Saharat Kositkun



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	RI2C-0189	The Optimal Number of Workers for Job Rotation to Prevent Workers from Occupational Hazards	Krisada Asawarungsaengkul
	RI2C-0132	Optimization Approach to Multi-Objective Person-Job Fit Job Assignment Problem	Krisada Asawarungsaengkul

Session: Innovative Materials and Mechanics (iMM) II

Room: Sarocha

Time	Paper ID	Title	Authors
13.00–15.00	RI2C-0214	Modified Biaxially Stretched PP for Energy Storage in Capacitors	Joachim Kaschta
	RI2C-0215	Receptonics for Bionanoelectronic Nose	Oh Seok Kwon
	RI2C-0216	Synthesis of Interfacing Agents for Selective Molecular Recognition: Toward High-Performance Biosensors	Chul Soon Park
	RI2C-0217	Fluorescent polydopamine nanoparticles as a probe for zebrafish sensory hair cells targeted in vivo imaging	Joonwon Bae
	RI2C-0218	Experimental Study on Heat Dissipative Ability in Recycled Thermoplastic Vulcanizate and Reclaimed Rubber Composites	Rungsima Yeetsorn
	RI2C-0219	Physical and Mechanical Properties of Poly(Butylene Succinate) and Poly(Lactic Acid) under Landfill Conditions	Narumon Seeponkai
	RI2C-0220	Antimicrobial Assay on PVDF Nanofiber Membrane	Noppavan Chanunpanich
	RI2C-0221	Effect of Solvent Cleaning on Thermo-Mechanical and Rheological Properties of Plastic Wastes from Municipal Solid Waste (MSW)	Laongdaw Techawinyutham
15.15–17.15	RI2C-0222	Effect of Natural Rubber Compound (NRC)/ Methyl Methacrylate (MMA) Coating on Abrasion and Hardness, Adhesive and Shear Properties for Pavement Surface	Matuphum Phutotum
	RI2C-0223	The Effects of Various Ratios of Hybrid Filler on Rubber Vulcanisates Properties Based on Passenger Car Tyre Tread Compounds	Chatchatree Thongsaen
	RI2C-0224	Effects of Rubber and Mould Temperatures on Solid Tyre Curing Process	Sittichai Limrungruengrat
	RI2C-0225	Eco-Friendly Composites Derived from Natural Rubber and Wasted Materials	Chonpicha Loonpun
	RI2C-0226	Influence of Temperature, Time and Crosslinking Agent on Structure and Properties of Polyurethane Gel	Pornlada Pongmuksuwan
	RI2C-0227	Jute Fiber Reinforced Thermoplastic Composites Fabricated by Direct fiber feeding injection molding process (DFFIM) process	Prattakon Sarasook
	RI2C-0228	Crystallization Behaviors of Plasticized Poly(Lactic Acid)/Microcrystalline Cellulose Composite Sheet	Suttinun Phongtamrug
	RI2C-0271	Characterization of a Thermo-Sensitive Injectable Hydrogel as an Iloprost Delivery System for Dental Use	Saowapa Niyomthai

Special Session: Electromagnetic Waves and Its Applications

Room: Thip-Ubol

Time	Paper ID	Title	Authors
13.00–15.00	RI2C-0155	Infrastructure Robotics Research at the University of Leeds	Nonchanutt Chudpooti
	RI2C-0157	Flexible Rectennas for Wireless Power Transfer to Wearable Sensors at 24 GHz	Nonchanutt Chudpooti
	RI2C-0158	Millimeter-wave Dual-Function Hollow Metal Waveguide to Microstrip Transition and Bandpass Filter based on ENZ Metamaterial	Nonchanutt Chudpooti
	RI2C-0160	96-GHz Complementary Split Ring Resonator for Thin Photoresist Film Thickness Characterization	Nonchanutt Chudpooti
	RI2C-0190	Moisture Content Detection System by using Microwave Sensor	Somporn Seewattanapon
	RI2C-0073	Comparison of Different Order Filtering Antennas	Ekasit Nugoolcharoenlap
	RI2C-0164	Linen Laundry Management System in Hospital by Using UHF-RFID	Kittisak Phaebua
	RI2C-0165	Sectoral Spherical Dielectric Lens Antenna on a Reflector for Ku-band Communication	Kittisak Phaebua



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15.15–17.00	RI2C-0131	Rail Defect Detection using Matrix Pencil Method-Based Radar Target Identification	Pongsathorn Chomdee
	RI2C-0021	Triple Band-Notched UWB Slot antenna Using Three Rectangular Slots	Tuanjai Archevapanich
	RI2C-0148	Lowpass Filters with Non-uniform Dielectric Properties using 3D Synthetic Printed Substrates	Sarawuth Chaimool
	RI2C-0130	Wideband UHF Reflector Antenna for DVB Applications	Sitthichai Dentri
	RI2C-0079	The indicate purifying of biodiesel with the reflection coefficient measurement of the simple microwave sensor	Nutdechatorn Puangngernmak
	RI2C-0037	Droplet Detection with Interdigitated Capacitor Sensor	Thanatcha Satitchantrakul
	RI2C-0120	The Hexa-Band Antenna with Reconfigurable Pattern	Thanatcha Satitchantrakul

Session: Electrical Circuit Design and Systems

Room: Subongkoj

Time	Paper ID	Title	Authors
13.00–15.00	RI2C-0084	High Step-Up DC-DC Push-Pull Resonant Based on low Cost half-wave Class-D Rectifier	Anusak Billsalam
	RI2C-0087	DC-DC High Conversion Ratio Push-Pull Resonant Converter Based on Voltage Double Rectifier	Anusak Billsalam
	RI2C-0072	A Single-Stage High-Power-Factor LED Driver Based on Interleaved ZCDS Class-E Rectifier	Chainarin Ekkaravarodome
	RI2C-0069	Design of a Balanced Push-Pull Resonant Converter with a Voltage Doubler Class-DE Rectifier	Chainarin Ekkaravarodome
	RI2C-0071	Comparative Study of Si IGBT and SiC MOSFET in Optimal Operation Class-E Inverter for Domestic Induction Cooker	Chainarin Ekkaravarodome
	RI2C-0135	An Active-only Grounded Capacitance Simulator	Montree Siripruchyanun
	RI2C-0065	Interface Circuit for Three-Wire Resistance Temperature Detector with Lead Wire Resistance Compensation	Tipparat Junsing
	RI2C-0128	On a Design of Adjustable Passive Balancing Circuit Using PWM Technique for Li-Ion Battery	Supanat Apipatsakul

Session: Fuel Cell Energy Source for Electric Vehicle Applications

Room: Subongkoj

Time	Paper ID	Title	Authors
15.15–17.30	RI2C-0178	Model Based Control of Battery/Supercapacitor Hybrid Source for Modern e-Vehicle	Phatiphat Thounthong
	RI2C-0184	Model-Free Control of Multiphase Interleaved Boost Converter for Fuel Cell/Reformer Power Generation	Phatiphat Thounthong
	RI2C-0175	Differential Flatness-Based Energy/Current Cascade Control for Multiphase Interleaved Boost Fuel Cell Converter	Phatiphat Thounthong
	RI2C-0049	Study of Hamiltonian Energy Control of Multiphase Interleaved Fuel Cell Boost Converter	Phatiphat Thounthong
	RI2C-0064	The Effect of Optimal Vehicle Velocity Trajectory and Optimal Hybrid Energy Storage on Electric Vehicle Energy Consumption	Waiard Saikong
	RI2C-0140	Model-Based Control of Permanent-Magnet Assisted Synchronous Reluctance Motors	Songklod Sriprang
	RI2C-0141	Model-Free Based Torque Control of Permanent Magnet Synchronous Motor Drives	Songklod Sriprang
	RI2C-0038	Maximum Torque per Ampere and Field-weakening Controls for the High-Speed Operation of Permanent-Magnet Assisted Synchronous Reluctance Motors	Songklod Sriprang
	RI2C-0019	Combination of Active Braking and Torque Vectoring in Electronic Stability Control for Four-Wheel Independent Drive Electric Vehicle	Sitthichok Sitthiracha

Day 3 : Friday, 13 December 2019			
Session: Food Science (FS)			
Applied Biotechnology (AB)			
Room: Arnoma III			
Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0025	Utilization of egg albumen: Application and optimization of gelatin and carrageenan for pudding production via response surface methodology (RSM)	Sunee Eadmusik, Daungporn Chaiya, and Supaporn Soichuen
	RI2C-0042	Effect of oatmeal as a fat replacer on physical properties and sensory acceptance of creamy salad dressing	Nutsuda Sumonsiri, Benjaporn Panjun, Supanna Naksuk, Sarisara Boonmawat, Amornrat Mukprasirt, Pattama Phasuthan
	RI2C-0099	Effect of Drying on b-Carotene, a-Carotene, Lutein and Zeaxanthin Content in Vegetables and Its Application for Vegetable Seasoning	Kullamethee Piyarach, Kamnerd Nipawan, Chumphukhaw Chadapon, Suwannasit Daluwan and Rotjanapun Kunjana
	RI2C-0145-0183	Nutritional quantification and shelf life analysis of non-thermal processed coconut juice	Sasithorn Kongruang, Srawut Kleesuwan
	RI2C-0100	Antioxidant Activities of Centella asiatica Extract-loaded Bovine Serum Albumin Nanoparticles in Simulated Gastrointestinal System Study	Kittiya Kesornbuakao, Patteera Chanapongpisan, Malinee Sriariyanun, Ir. Lindayani and Patchanee Yasurin
	RI2C-0022	Surface Characteristics of Leafy Vegetables and Their Effects on Salmonella Attachment	Chanthima Phungamngoen and Sriwiang Rittisak
	RI2C-0136	Silver Nanoparticles impregnated Biocellulose Produced by Sweet Glutinous Rice fermentation with the genus Acetobacter	Duongruitai Nicomrat
	RI2C-0083	Application of Gelatin derived from Waste Tilapia Scales to an Antibiotic Hydrogel Pad	Benjamaporn Wonganu
10.45–12.15	RI2C-0156	Analysis of microbial consortia with high cellulolytic activities for cassava pulp degradation	Raviporn Runajak, Santi Chuetor, Wawat Rodiahwati, Malinee Sriariyanun, Prapakorn Tantayotai, and Somkiat Phornphisutthimas
	RI2C-0002	Profiling analysis of fatty acids and collagens obtained from sea cucumbers	Pascal Budzinski, Mananya Maimeun, Parita Mutrakulcharoen, Benjamaporn Wonganu, and Malinee Sriariyanun
	RI2C-0080	Physiochemical profiles, antioxidant and antibacterial capacity of honey from stingless bee <i>Tetragonula laeviceps</i> species complex	Araya Khongkwanmueang, Arpatsorn Nuyu, Lars Straub and Jakkrawut Maitip
	RI2C-0133	Improvement of Anthocyanin Stability in Butterfly Pea Flower Extract by Co-pigmentation with Catechin	Phoomjai Charurungsipong, Chairath Tangduangdee, Suksun Amornraksa, Suvaluk Asavasanti ³ , and Jenshinn Lin
	RI2C-0149	Statistical approach of nutrient optimization for microalgae cultivation	Pichayatorn Bunkaew and Sasithorn Kongruang
	RI2C-0150	Renewable Biodiesel Production from Oleaginous Yeast Biomass using Industrial Wastes	Sasithorn Kongruang, Sittiruk Roytrakul, Malinee Sriariyanun
Session: Innovative Materials and Mechanics (iMM) III			
Room: Pathummas			
Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0229	Selection of prefabricated concrete frame model in the south of Vietnam condition	Thanh Quang Khai Lam



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	RI2C-0230	Compressive Strength and Workability of Cement Mortar Containing Recycled Asphalt Pavement	Jirayut Suebsuk
	RI2C-0231	Eco-Friendly Fired Clay Tiles with Greenish and Greyish Colored Incorporating Alternative Recycled Waste Materials	Purinut Maingam
	RI2C-0232	Properties of Cement Fly Ash Gravel Materials in Laboratory	Krissakorn Krairan
	RI2C-0233	The Behavior of Cement Fly Ash Gravel Column under Triaxial Compression Test	Wiroj Kanwiriyalet
	RI2C-0234	Effect of Bottom Ash on Swelling Characteristics of Expansive Clay	Bundit Adulyamet
	RI2C-0235	Unconfined Compressive and Splitting Tensile Strength of Dredged Sediments Stabilized with Cement and Fly Ash	Hatairat Poorahong
	RI2C-0236	Flexural Behavior of Compacted-Cement Sand Reinforced with Geogrid	Supphanut Chuenjaidee
10.45–12.00	RI2C-0237	Application of Lateritic Soils Stabilized with Para Rubber and Geopolymer as Pavement Materials	Chanon Dejdonbom
	RI2C-0253	A Novel Ceramic Backing Strip from Metakaolin-Based Geopolymer with Gas Flow Holes for Welding Application	Chayanee Tippayasam
	RI2C-0239	Strength and Noise Reduction of Geopolymeric Material Produced from Waste Sludge	Janjit Iamchaturapatr
	RI2C-0240	Numerical Simulation and Experiment on Steel Fiber Concrete Beams	Thi My Dung Do
	RI2C-0241	Effect of Plastic and Tire Wastes on Marshall Properties, Density and Water Absorption of Polymer Pavement	Chanidapa Choeycharoen
13.00–15.00	RI2C-0242	Microstructure, Hardness, Adhesion and Corrosion Properties of Ti and TiN Films on Stainless Steel 316L	Karuna Tuchinda
	RI2C-0243	Manufacturing of the Talar Body Prosthesis by Hot Forging Process	Kumpanat Sirivedin
	RI2C-0244	Investigation of Welding Speed Parameters on Ni-Base Superalloy by Laser Welding Process	Kumpanat Sirivedin
	RI2C-0245	Development of Stress- and Strain-Based Fracture Forming Limit Curves of Sheet Aluminium-Alloy AA2024-T3 through Various Approaches	Tanakorn Jantarasricha
	RI2C-0246	Welded Stainless Steel: Surface Oxidation, Characterization, Hardness and Corrosion Resistance	Attaphon Kaewvilai
	RI2C-0247	New emerging Al7075 based hybrid nanocomposite for automotive applications: a sustainability approach	M. Chandrasekaran
	RI2C-0248	Development of the Fuel Briquette Compression Machine	Sakultala Wannapakhe
	RI2C-0249	Effects of Preheating and Dual Shielding on Flux-Cored Arc Welded High-Strength Carbon Steel for Hardfacing Application	Attaphon Kaewvilai

Session: Innovative Materials and Mechanics (iMM) IV

Room: Sarocha

Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0250	Synthesis of Palladium Chloride Impregnated on Al ₂ O ₃ - Pillared Clay for Reduction of Nitrobenzene	Jedsada Maliwong
	RI2C-0251	Ring Opening of Epoxides Catalyzed by PdCl ₂ Impregnated on Al ₂ O ₃ - Pillared Clay	Piyarat Trikittiwong
	RI2C-0252	The Properties of 0.5BZT - 0.5BCT Piezoelectric Ceramic from Gel Casting Process by Using Ethylene Glycol Diglycidyl Ether (EGDGE) Epoxy Resin as a Gelling Agent	Tanikan Thongchai
	RI2C-0209	Effect of Fiber Laser Surface Modification on the Corrosion Behavior of 316L Stainless Steel	Rachapong Tangkwampian
	RI2C-0254	Electrically Conducting Poly(Pyrrole-co-Para-Phenylenediamine) as Potentiometric Transducers in Urea Biosensor Fabrication	Walaiporn Prissanaroon-Oujai
	RI2C-0255	Programmable 4D-printed Responsive Structures	Sunanta Chuayprakong
	RI2C-0256	Phase Inversion-Induced Rosin In situ Forming Matrix Using Various Organic Biocompatible Solvents for Periodontitis Treatment	Nutdanai Lertsuphotvanit
	RI2C-0257	Morphological, Thermal and Mechanical Properties of Poly(Lactic Acid)/Cellulose/ Nanoclay Composite	Sirisart Ouajai



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10.45–12.00	RI2C-0258	Catalytic Oxidation of Furfural to Succinic Acid in the Presence of Sulfonic Resins	Kamchai Nuithitikul
	RI2C-0259	Compatibility between Magnesium Stearate and Pharmaceutical Acidic Active Compounds/Excipients with DSC	Pornsit Chaiya
	RI2C-0260	Synthesis of Biogenic Nanosilica from Rice Husk: Using Scaling-Up Batch Reactor from Laboratory	Ravisara Chainaruprasert
	RI2C-0261	Emulsification of Water in Fuel Oil Emulsion by Phase Inversion	Prakorn Kittipoomwong
	RI2C-0262	Preliminary Ions Removal from Synthetic Iron Solution by Zeolite and Perlite via XRF Technique	Kronnika Saetan
13.00–15.00	RI2C-0263	Ellingham Approximation of the Formation of Oxides of Metals Constituent in Stainless Steels	Thamrongsin Siripongsakul
	RI2C-0264	Geometrical Construction of Auxiliary Axes in an Ellingham Diagram	Thamrongsin Siripongsakul
	RI2C-0265	Utilization of the Waste Chromium Oxide Rods from Thermal Spray Processes by Carbothermic Reduction	Penpisuth Thongyoug
	RI2C-0266	Effect of Cooling Rate on Microstructure of Rejuvenated Fe-Ni Based Superalloys	Tanaporn Rojhirunsakool
	RI2C-0267	The Effects of Austempering Temperature and Time on Mechanical Properties of Ductile Cast Iron Grade FCD450	Janthira Chantarach
	RI2C-0268	Effect of Double-Step Solution Treatment on Rejuvenation Heat Treated Microstructure of IN-738 Superalloy	Chuleeporn Paa-rai
	RI2C-0269	High Temperature Degradation of Thermal Oxides on AISI 430 and 304 Stainless Steels by Carbon	Penpisuth Thongyoug
	RI2C-0270	Effect of Atmosphere on Duplex Oxide Formed on 9Cr Steel at 550 °C	Mohammad Hassan Shirani Bidabadi

Session: Wireless Controlling System and Related Topics

Room: Thip-Ubol

Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0129	Meticulous Illumination Controller for Visual Comfort Using Wireless Sensor	N Loyalakpa Meitei
	RI2C-0088	Development of a Static Wireless Power Transfer System for Electric Bikes	Chaiyut Sumpavakup
	RI2C-0089	Sensor Development for Soil-Property Detection Using Near Infrared Spectroscopy	Phongphol Lostapornpipit
	RI2C-0052	Effects of Reader Antenna Orientation on Received Signal Strength of UHF RFID Tags for Handheld Reader Localization	Wutthisak Watthanapak
	RI2C-0146	Decode-and-Forward Relaying Protocol with Optimal Degrees of Freedom for Proactively Selective Wireless Relay Networks	Kampol Woradit
	RI2C-0091	D-STATCOM based Voltage Compensator for a new Micro Hydro Power Generation Scheme Supplying Remote Areas	Pukhrambam Devachandra Singh
	RI2C-0030	Remote Monitoring and Innovative Fire Prediction System for Dubai Secondary Distribution Substations	Islam Fakhri Mohd Abuhamdah
	RI2C-0081	Glass bottle bottom inspection based on image processing and deep learning	Wittaya Koodtalang

Session: Innovative Electricals and Electronics (iEE) I

Room: Thip-Ubol

Time	Paper ID	Title	Authors
10.45–12.00	RI2C-0109	Scaling Up of CO ₂ Sorption in DSU Fluidized Bed Reactor Based on CFD Simulation	Parinya Khongprom
	RI2C-0110	CFD Simulation of the Hydrodynamics in Three Phase Fluidized Bed Reactor: Effect of Particle Properties	Parinya Khongprom
	RI2C-0074	Hydrogen Flow Rate Control of a Proton Exchange Membrane Electrolyzer	Damien Guilbert
	RI2C-0083	Method of Preparation, Characterization and Application of a Hydrogel Pad derived from Waste Tilapia Scales	Benjamaporn Wonganu
	RI2C-0047	Design and simulation of reliable standard cell library for INDEP approach	Vijay Kumar Sharma



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Session: Industrial Process Investigation and Related Topics			
Room: Thip-Ubol			
Time	Paper ID	Title	Authors
13.00–14.45	RI2C-0105	An Investigation of Noise Characteristic During End Milling Process	Supakorn Charoenprasit
	RI2C-0176	Notifying Problems of a Machine by Using Machine Learning	Supod Kaewkorn
	RI2C-0036	Smart Quiz System for Classroom via LINEBot	Vitawat Sittakul
	RI2C-0169	Progress in a Development of a Laser-Based Weed Control System	Amarin Ratanavis
	RI2C-0041	Simulation of Queueing System for Commercial Bank in University: Case Study of Bangkok Bank at King Mongkut's University of Technology North Bangkok	Chanakarn Kiaramkul
	RI2C-0054	Image Classification of Forage Plants in Fabaceae Family Using Scale Invariant Feature Transform Method	Worawut Yimyam
	RI2C-0092	The Analysis of Internet Network System Using Graph Theory	Worawut Yimyam
Session: Operation Systems and Data Information Management Technology			
Room: Arnoma II			
Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0102	Additive Manufacturing - based Healthcare 3D Model for Education: Literature Review and A Feasibility Study	Kasin Ransikarbum
	RI2C-0103	Fuzzy Analytic Hierarchy Process (AHP)-based Criteria Analysis for 3D Printer Selection in Additive Manufacturing	Kasin Ransikarbum
	RI2C-0032	Cost Optimization Model for Plant Assignment in Industrial Estate Planning	Kasin Ransikarbum
	RI2C-0035	A Multi-objective Model for Ergonomic Workforce Scheduling with Bi Hazard Considerations	Tarit Rattanamanee
	RI2C-0078	Spatial Generalized Extreme Value Modelling of Extreme Temperature in northeast Thailand	Piyapatr Busabodhin
	RI2C-0005	An optimization model for product mix problem	Anan Butrat
	RI2C-0119	Assessment of Supply Chain Reliability: Development of AHP Model for SCOR Performance and Fault Tree Analysis.	Kittichai Athikulrat
	RI2C-0007	The Optimal Number of Reach Trucks and Order Picker Trucks in Warehouse Determining Using Simulation	Ananya Chyaphum
10.45–12.00	RI2C-0152	Method to Decrease Complexity in Engineering Design and Technical Systems	Pattarawit srimuang
	RI2C-0117	Development Process of Student Seats on Modified Pickup for School Transportation	Wisit Wiputgasemsuk
	RI2C-0173	Environment Generation from Real Map to Investigate Path Planning and Obstacle Avoidance Algorithm for Electric Vehicle	Rapas Udomsil
	RI2C-0188	A Feasibility Study of Using Machines in Sauce Manufacturing: A Case Study	Kanyapatchara Rakharn
	RI2C-0111	Heuristics for Multi-Depot Inventory Routing Problem	Chayathach Phuaksaman
Session: Innovative Electricals and Electronics (iEE) II			
Room: Arnoma II			
Time	Paper ID	Title	Authors
13.00–14.30	RI2C-0023	Improvement of Transmission Measuring for The Robotic Wireless Control	Sittichai Dentre
	RI2C-0114	Designing and Analyzing on Thermoelectric Cooler for Turbomolecular Pump Cooling Applications	Athorn Vora-ud
	RI2C-0077	Passivity-based Approach for Overhead Crane Anti-Sway Controller Design	Jidapa Doktian
	RI2C-0026	The Instrumentation of surface uniformity Commutator control spindle automatically	Panee Noiying
	RI2C-0180	Design and Implementation of Passive Harmonic Filter Using Simulation Tool	Nattapon Panmala
	RI2C-0082	Performance of Methods for Testing the Ratio of Coefficients of Variation of Two Gamma Distributions	Wararit Panichkitkosolkul



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Session: Computing and Information Technology (CI)			
Room: Subongkoj			
Time	Paper ID	Title	Authors
08.30–10.30	RI2C-0010	PM2.5 Prediction based Weather Forecast Information and Missingness Challenges: A Case Study Industrial and Metropolis Areas	Puttakul Sakul-ung
	RI2C-0012	Towards Privacy Framework in Software Development Projects and Applications: An Integrated Framework	Puttakul Sakul-ung
	RI2C-0062	Understanding Key Enablers of Cloud Computing Adoption and Acceptance Over Time	Nalinpat Porrawatpreyakorn
	RI2C-0093	A Conceptual Model of Requirement Engineering in Cloud Project Delivery for Thai Government Organizations	Ajchareeya Chaipunyathat
	RI2C-0115	A Librarian-inspired Approach to Decentralised Web Search	Mario Kubek
	RI2C-0118	Modeling a Hierarchical Abstraction Process on top of Co-Occurrence Graphs	Supaporn Simcharoen
	RI2C-0107	An Optimized Algorithm for Processing Original Image using Ground Truth	Ariel Estomagio Isidro
	RI2C-0016	A Super-Resolution Image Reconstruction using Triangulation Interpolation in Feature Extraction for automatic sign language recognition	Eakbodin Gedkhaw
10.45–12.00	RI2C-0033	Numerical Simulation for Fire Emergency Planning in a Home Appliances Factory	Kasin Ransikarbum
	RI2C-0051	Elimination of Blind Spots in Tag Readable Areas for UHF RFID in/Outlet Management System	Chawanat Lerkbangplad
	RI2C-0053	Path Planning for Autonomous Mobile Robot Navigation with Evolutionary Particle Swarm Optimization	Ittikon Thammachantuek
	RI2C-0066	The Prototype of Anthropomorphic Robot Arm Work Space Design for Self-reliant Patients	Chutiwan Boonarchatong
	RI2C-0139	Development of A Reconfigurable Spherical Robot III	Supaphon Kamon
13.00–14.45	RI2C-0076	High-Resolution Image Generation from Enlarged Image based on Interpolation Technique	Athaporn Kingboo
	RI2C-0137	Spatio-Temporal Seismic Data Analysis for Predicting Earthquake: Bangladesh Perspective	Risul Islam Rasel
	RI2C-0142	An MQTT-based IoT Cloud Platform with Flow Design by Node-RED	Choopan Rattanapoka
	RI2C-0153	An IoT System Design with Real-Time Stream Processing and Data Flow Integration	Phongsak Keeratiwintakorn
	RI2C-0075	Intelligent parking system using multiple sensor detection	Narongchai Jindaparakai
	RI2C-0127	Designing of Welding Defect Samples for Data Mining in Defect Detection and Classification using 3D Geometric Scanners	Papatsorn Singhatham
	RI2C-0168	Creating subsurface defect specimens for Deep Learning Analyzing of Radiographic Weld Testing	Niphaporn Panya

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