



Future-Ready Solutions through Advanced Technologies

POSTER PRESENTATION SESSIONS



21st and 22nd November 2024

Organized by

Faculty of Technology

University of Sri Jayewardenepura Sri Lanka

Thursday Afternoon, 21st of November 2024
13.00 – 16.00

Two Sessions at FF 06

#	Tracks	Session
1	ISA-Information Systems / Applications and IS Strategies	Poster Session 1 –13:00 to 14:30
2	FNP- Food Security, Nutrition and Processing Technology	
3	EES- Energy, Environment and Sustainability	Poster Session 2 - 14:30 to 16:00
4	BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing	
5	MEP-Materials Engineering and Process Technology	

International Conference on Innovation and Emerging Technologies 2024

Poster Presentation Sessions



Poster Session 01

Thursday, 21st November 2024 – 13.00 – 14.30 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Mrs. D.R.N. N Rathnayake

Track		ISA-Information Systems / Applications and IS Strategies	
Panel Members	ID	Abstract Title	Authors
Dr. (Mrs.) Wijendra Gunathilake Senior Lecturer, Department of Computer Science, General Sir John Kothalawala Defence University Mr. Chamila Karunatilake Department of Information and Communication Technology, Faculty of Technology, University of Sri Jayewardenepura	14	Factors Associated with the Identification of Software Quality Assurance Practices Towards Waterfall and Agile Information Systems Projects of BOI Registered Software Companies in Sri Lanka	A.L.C.D. Pathiraja
	116	Exploring the Impact of Evolution and Maintenance on Software Architecture: A Study Based on Start Ups and a Large-scale Organization	K.H.O. Lakananda, A.P.T. Theekshani, S.V.P.A.P. Sawbhagya, B.N.S. Lankasena
	221	Relativity Assessment on Lehman's Law on Software Quality Evolution Context in Sri Lanka	H.M.G. Divyanjalee, A.B. Hewavithana, A.M.Y.N. Amarakoon, N. Lankasena
Track		FNP- Food Security, Nutrition and Processing Technology	
Panel Members	ID	Abstract Title	Authors
Dr. Rumesh Liyanage & Dr. Madhubhashini Kumari Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	23	Optimization of Organoleptic, Physicochemical, and Nutritional Quality of Guava Jam Enriched with Raisins	M.A.F. Hasna, I.D. Singhalage
	83	Sustainable Use of Fish Processing By-Products in Canned Pet Food Production	T.D.P. Waththegama, T.A.D.H. Amali
	136	Development of Coconut Milk-Based Fruit Smoothie	R.K.D.D. Samarakkodi, B.G.R.R. Bandara, G.A.A.R. Perera, M. Sivaji, L.L.W.C. Yalegama
	144	Development of Vegan Sausage Using Baby Jackfruit (<i>Artocarpus heterophyllus</i>) and Banana Floret (<i>Musa paradisiaca</i>) as a Meat Substitute	P.D.T. Sewmini, K.M.G.M.M. Kariyawasam

	148	Development of Beetroot (<i>Beta vulgaris</i>) Incorporated Blackcurrant (<i>Ribes nigrum</i>) Concentrate and Study the Acceptability of the Product	R.M.S.M. Rathnayaka , K.G.L.R. Jayathunge
	149	Comprehensive Analysis of Crack Formation in Soft Dough Biscuits	P.S.T.J. Bandara , M.K.A. Sandaruwani
	205	Enzymatic Hydrolysis of Yellowfin Tuna Proteins Using Extracted Papain Enzyme from Papaya Latex	M.H.M.O.N.K. Medagoda , D.S. Ariyaratna, D. Pavalakumar, L.J.S. Undugoda
	213	Enhancing the Probiotic Viability, Textural, and Sensory Attributes of Yogurt through the Incorporation of Pectin Extracted from Fruit Peels	S.M.D.S.C. Senaratne , G. Somaratne, D. Roy
	222	Sorption Efficiency of Calcium Ions by Green Leafy Vegetables	C.S. Hiddallaarachchi , U.K. Jayasundara
	240	Development of a Moringa Powder (<i>Moringa oleifera Lam.</i>) Incorporated Rice Paper Snack	P.D.N. Fernando , W.P.K.M. Abeysekera, H.M.T. Herath
	252	Development of Food Consumption Monitoring System for Tracking and Analyzing Pre-Packaged Fast-Food Intake to Promote Healthier Eating Practices	R.W. Wedage , K.M.P.B.N. Perera

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Poster Presentation Sessions



Poster Session 02

Thursday, 21st November 2024 – 14.30 – 16.00 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr. E.V.A. Premalal

Track		EES- Energy, Environment and Sustainability	
Panel Members	ID	Abstract Title	Authors
Dr. Pabasari Koliyabandara Department of Civil and Environmental Technology, Faculty of Technology, University of Sri Jayewardenepura.	45	Development of a Smartphone-Based Water Turbidity Monitoring System	W.M.R.B. Weerasekara , U.G.N.P. Darshani, Choolaka Hewawasam
	87	Development of Oil Adsorbent Mat Using Waste Human Hair as a Natural Oil Sorbent	H.A.S. Hitige , E.V.A Premalal
	99	Short-Term Quality Assessment in Drinking Water: A Case Study in Nilwala Basin, Sri Lanka	P.M.G.A. Yasara , M.M.M. Muneeb, S.S.K. Chandrasekara
	137	Organic Dye Removal from Aqueous Solutions Using Magnesium Oxide and Activated Charcoal	M.G.S.S. Bandara , S.M.P.A. Koliyabandara, U.S.P.R. Arachchige
	145	Development of a Guideline to Select Industrial Boiler Fuels for Sustainable Boiler Operations	K.G.M.K. Gunawardhana , Pradeep Gajanayake, H.G.T.P. Samarawickrama
	156	Development of User-Friendly Processes for Color Measurement in the Textile Industry Discharge Wastewater to Reduce Environmental Pollution	K.M.S.T. Maduranga , S.H.I.S. Gunasiri, Pradeep Gajanayake
	199	Vibrational Sensing Methods for Measuring Time of Flight to Assess Internal Characteristics of Trees	S.N. Alahendra , C.C. Liyanage, G.G.T. Chandrathilake, W.K.I.L. Wanniarachchi
	214	Microplastics in Personal-Care and Cosmetic Products: A Systematic Review of Prevalence, Usage, and Mitigation Strategies	A.H. Weerakoon , H.D.M.U. Wijesinghe, T.S. Ukwatte, G.Y. Jayasinghe
Track		BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing	
Panel Members	ID	Abstract Title	Authors
Dr. Asanka Sanjeewa Department of Biosystems Technology, Faculty of Technology, University of Sri	21	Preliminary Study on the Extraction Efficacy of Two Polar Solvents on Polyphenol Content, Antioxidant and Bactericidal Properties of <i>Capsicum frutescens</i> Leaves	A. Logachandran , M. Kanagaraju, S.A.M.A.G.M. Senanayake
	61	Isolation and Characterization of Thermostable Cellulase-Producing Bacteria from Compost Production Plant in Kurunegala	Y.M. Bandara , P.S.T. Amandani, H.D.S. Kavishka, H.D.D. Sadeepa

Jayewardenepura	172	Identification and Virtual Screening of Natural Compounds from <i>Acalypha indica</i> as Potential Inhibitors of Senecavirus A 3C Protease	S. Poorni , H. Wijekoon, H. Adhikari, W.M.M.P. Hulugalla, N.M.T. Anupama, N. Nethmini, N. Gamage, L. Ranathunga
	184	Enhanced Removal of Heavy Metals (Copper, Cadmium, and Chromium) From Textile Wastewater Using Crab Shell-Derived Chitosan/Alumina Composite	D.S. Ramanayake , A. Niriella, R.S. Dissanayake
	254	A Comparative Study to Find Effective Methods for Rhamnolipid Extraction and Purification from <i>Pseudomonas aeruginosa</i> towards Their Antibacterial Efficacy against Uropathogenic <i>Proteus mirabilis</i>	N.P. Pananwala , B. Premakanthan, M.I. Mohamad, N.M.C. Nissanka, K.A.A. Dilhari, G. Priyadarshana, M.M. Weerasekera
Track	MEP-Materials Engineering and Process Technology		
Panel Members	ID	Abstract Title	Authors
	44	Design of a Foldable and Portable Motorbike Helmet	D.K.K.C. Kankanamge , S.K.R.G. Siriwardhana, A.G.S.S. Ambagaspiya, R.S. Dassanayake
	52	Characterization of PEO-Based Stretch Film with <i>Artocarpus heterophyllus</i> (Jackfruit) Latex as a Green Packaging Solution	N.V.P.K. Gamage , W.S.S. Gunathilake, H.C.S. Perera, B.S. Dassanayake, C.P. Jayalath
	59	Recent Advancements of Intelligent Packaging Materials in Fruits and Vegetables Manufacturing Industry, Limitations, and Future Perspectives	B.P.S. Rajapakshe , A.H.L.R. Nilmini, R.A. Jayasinghe, V. Karunaratne, R.N. Wijesena, G. Priyadarshana
	187	Fabrication of Ceramic Engobe Using Low-Cost Raw Materials Available in Sri Lanka	A.M.C.A. Kumara, Uditha Amarasinghe, R. Dissanayake

Friday Morning, 22nd of November 2024
09.00– 12.00

Two Sessions at FF 06

#	Tracks	Session
1	MRA- Mechatronics, Robotics, and Automation	Poster Session 3 - 9:00am to 10:30
2	ATS- Agricultural Technologies for Sustainability	
3	GGG- Geo Resources, Geo Environment and Geotechnics	Poster Session 4 - 10:30 to 12:00
4	AEN- Automotive Engineering	
5	AID- Artificial Intelligence and Data Science	

Poster Session 03

Friday, 22nd November 2024 – 09.00 – 10.30 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Mr. E.K.N. Malinda

Track		MRA- Mechatronics, Robotics, and Automation		
Panel Members	ID	Abstract Title	Authors	
Dr. Ruchire Wijesinghe Assistant Professor Department of Electrical and Electronics Engineering Faculty of Engineering Sri Lanka Institute of Information Technology	104	Automated System for Optimized Motorcycle Parking in Urban Environments	R.M.N.M. Ariyaratna	
	182	Portable Fully Automatic Wire Stripping and Crimping Machine	R.A.S.K. Ranawaka, R.A.S.L. Ranaweera	
	250	Advanced Sensor Fusion Based Smart Vehicle Navigator for Enhanced Driving Safety	Jasmine Jayakody	
	277	Development of Wearable Devices for Visually Impaired People in Sri Lanka	A. Bathmangani, D.D.B. Senanayake, and R.D.A.U. Pallegama	
Track		ATS- Agricultural Technologies for Sustainability		
Panel Members	ID	Abstract Title	Authors	
Dr. Ruwanga Amarasinghe SLTC Research University Mr. Dilan Ranaweera Department of Civil and Environmental	29	Assessment of Knowledge, Attitudes, and Practices of Tea Land Owners on Leaf Harvesting Policies in Sri Lanka	D.M.N.T. Dissanayaka, S.A.M.B.C. Samarasekara, S.D.T. Maduwanthi, N.K.M.C. Nagahawaththa	
	34	Advancing Agricultural Engineering: The Role of Emerging Technologies in Precision Agriculture and Sustainable Development in Asia	S.M.A.B.K. Samarakoon, C.P. Rupasinghe	

Poster Presentation Sessions

Technology, Faculty of Technology, University of Sri Jayewardenepura	57	Revolutionizing Small-Scale Poultry Farming in Sri Lanka with Affordable Automation for Quality Checking, Sorting, and Counting of Eggs	R.K.D.N. Rathnayaka, K.A.R.P. Athukorala, B.W.N.S.K. Madawala , N.G.A. Senavirathna, L.H.N. De Silva
	70	Development of Biodegradable Nursery Containers Using Corn Waste: An Eco-Friendly Solution for Agriculture Industry	S.L.T. Kumarasingha , C.J. Abeywickrama, U.A.S.K. Edirisinghe, J.A.E.C. Jayawardena
	80	Development of Compost-Enriched Coco Peat Media to Grow <i>Trichoderma harzianum</i> as a Biofungicide	C.A.E. Gayesha, K.V.V.S. Kudaligama, T.H.P.S. Fernando, R.G.U. Jayalal, E.P.N. Udayakumara
	173	Use of Electric Fence to Protect Coconut Plantations from Terrestrial Animals	G.D.K. Samaranayake , B.G.S.S. Gamage, T.M.S.K. Piyadasa, A. Dangolla
	183	Advances in Hyperspectral and Multispectral Imaging for Rice Disease Identification: A Systematic Review	H.D.M.U. Wijesinghe , U.T. Ukwatte, A.H. Weerakoon, G.Y. Jayasinghe
	227	Hydration Stability of Urea Nanocrystals as a Sustained Nitrogen Source in Agriculture	E.M.B.M. Ekanayake , N.H. Madanayake, N.M. Adassooriya
	235	Evaluating Different Trellising Designs for Heavy Fruit Bearing Cucurbits	H.D.S.N. Wijesooriya , J.M.D. Jayamanna, J.K.W.N. Subashini
	237	Evaluation of Alternative Potting Mixture for Black Pepper (<i>Piper nigrum</i> L.)	P.A.H.I. Rupasinghe , K.D.N. Priyadarshani, L.N. Weerasinghe
	272	Evaluation of Local Ginger (<i>Zingiber officinale</i> Roscoe) Accessions under Coconut Cultivation in Low Country Intermediate Zone of Sri Lanka	S.I.C. Silva , A.L.S. Dharmaparakrama, S.S. Munasinghe, W.A.A.H. Shamaka, K.G.P. Shantha, S. Amarakoon, M.M.S. Malkanthi

Poster Session 04

Friday, 22nd November 2024 – 10.30 – 12:00 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr. Ranga Weerasekara

Track	GGG- Geo Resources, Geo Environment and Geotechnics		
Panel Members	ID	Abstract Title	Authors
<p>Dr.(Eng.) A.M.L.N. Gunathilaka Department of Civil Engineering Faculty of Engineering Technology, The Open University of Sri Lanka</p> <p>Eng. Dinal Priyankara Department of Civil and Environmental Technology, Faculty of Technology, University of Sri Jayewardenepura</p>	273	Emerging Trends in Disaster Management with Concern to Artificial Intelligence (AI): With Special Focus on Landslides	B.P.G.S.Y. Weerasinghe
Track	AEN- Automotive Engineering		
Panel Members	ID	Abstract Title	Authors
<p>Eng. Jaanaka Wimaladharma Former Operations Manager, Nokia Sri Lanka and Maldives</p> <p>Prof. Mahinsasa Narayana Department of Chemical and Process Engineering, Faculty of Engineering, University of Moratuwa</p>	257	A Comprehensive Review of Transportation Systems: Trends, Challenges, and Innovations of New York and Tokyo	V. Mary Vithiya

Track		AID- Artificial Intelligence and Data Science	
Panel Members	ID	Abstract Title	Authors
<p>Dr.Randima Dinalankara The Head, Senior Lecturer (Department of Computer Engineering), Faculty of Engineering , University of Sri Jayewardenepura</p> <p>Ms.Chamindi Samarasekara Lecturer, Department of Information and Communication Technology, Faculty of Technology, University of Colombo</p>	12	Enhancing Lost and Found Systems with Multimodal Deep Learning: Integrating SBERT and Siamese Networks for Improved Semantic Matching	B.M.P. Dhanawardhana, K.A.D. Chalana, I.D.S.P. Abeywardena, B.N.S. Lankasena, B.M. Seneviratne, M.H. Paul
	26	Wind and Solar PV Generation Forecasting Methods Based on Weather Data	E. Sinthujan , W.N.D. Fernando, R. Sukiraj
	32	Deep tRF-Net: A Deep Learning Approach for Multi Class Cancer Classification Using tRNA Derived Fragments Expression Patterns	M. Manage , S. Vidanagamachchi, V. Thambawita
	79	Deep Learning Based Human Nail Disease Recognition System	V. Geerthana , M. Janotheepan, M.M.R. Ahamed
	86	Stacking Machine Learning Model for Bus Dwell Time Prediction with Low Sampling Rate GPS Trajectory Data	R. Shiveswarran, T. Uthayasanker
	123	AI-Powered Driving Assistant: Reducing Road Accidents with Object Detection and Lane Keeping	L. Jerith , I.B. Samarakoon
	127	AI-Driven Bud Detection and Emasculation Assistance in Okra (<i>Abelmoschus esculentus</i> L.)	D. Tharaka , A. Withanage, R.E. Wijesinghe, K. Subasinghage, U. Kumarasinghe, K.M.R.D. Abhayapala, A.H. Wijethunge, W. Chithral
	161	Design of a M-Learning System with Collaborative Filtering for Enhancing English Speaking Proficiency in University Students	H. Pathirana , D. Alwis
	202	Transforming Software Development: The Evolutionary Role of AI, ML, and Blockchain	S.M. Rupasinghe , H.P.M.S.S. Shavindi, K.N.A. Vithana, B.N.S. Lankasena
	253	Deep Learning-Based Growth Monitoring and Yield Approximation of Oyster Mushroom	T.M.C.D.D. Senarathne , B.W.D. Priyankara, R.D.V.M. Senevirathne, H.Y.R. Atapattu
263	AI Powered Hand Gesture Recognition with Flex Sensors: A Real Time Solution for Improving Communication Individuals with Hearing and Speech Impairments	C. Rathnayake, R. Gamage	