



Sustainable Technology for Economic Resilience

POSTER PRESENTATION SESSIONS



23rd and 24th of November 2023

Organized by
Faculty of Technology
University of Sri Jayewardenepura Sri Lanka

Thursday Afternoon, 23rd of November 2023

15.30 – 17.00

Two Sessions at **FF 06**

#	Tracks
1	ATS-Agricultural Technologies for Sustainability
2	MEP- Materials Engineering and Process Technology
3	MRA- Mechatronics, Robotics, and Automation
4	AID- Artificial Intelligence and Data Science

Thursday, 23rd November 2023 – 15.30 – 16.15 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr, Asangi Gannoruwa

Track		ATS-Agricultural Technologies for Sustainability	
Panel Members	ID	Abstract Title	Authors
Dr. Choolaka Hewawasam, Mr. Dilan Ranaweera Department of Civil and Environmental Technology, Faculty of Technology, University of Sri Jayewardenepura	11	Detecting Carrot Root and Carrot Leaves Diseases Using a Machine Learning Model and Digital Images	W.P.R. Srimali , H.M.E.P. Kumara and K.A.P. Kannangara, P. Gunawardhana and U. Samarathunga
	49	Optimization and comparison of Phosphate solubilizing capacity of Aspergillus spp.	A.A.A.U. Aberathna, D.A. Satharasinghe, A.P. Jayasooriya, R.N. Jinadasa, S. Manopriya, B.P.A. Jayaweera, C.A.N. Fernando, W.A.D.V. Weerathilake, G.A. Prathapasinghe, J.A. Liyanage and J.M.K.J.K. Premarathne
	89	Potential Use of Wood Ash as an Alternative Source of Potassium for Rice Cultivation in Low Country Wet Zone	W.M.S. Dheeraseskara, M.G.N. Rupasinghe, H.M.S.K. Herath and G.Y.A.D.D. Perera
	147	LED-NFT hydroponic system: new perspective for indoor cultivation	H.M.D.J. Jayasooriya, S.A.K.M. Sooriyaarachchi and K.M.R.D. Abhayapala
Track		MEP- Materials Engineering and Process Technology	
Dr. Rajitha Gunartne, Department of Materials and Mechanical Technology, University of Sri Jayewardenepura	183	Utilization of Ceylon Bowstring Hemp Fibers as a Reinforcing Filler in SBR Composites	W.P. Siriwardhana, A.A.G.K. Siriwardana, A. Gannoruwa, S. Rajapaksha, A.H.L.R. Nilmini, and G. Priyadarshana*
	194	The Revolution of Food Packaging Materials and Future Perspectives	B. P. S. Rajapaksha, R. A. Jayasinghe, A. H. L. R. Nilmini, V. Karunaratne, R. N. Wijesena, and G. Priyadarshana*
Dr. Rohan Dassanayake Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	244	Comparative Study of Graphene Oxide (GO) and Reduced Graphene Oxide (R-GO) Based Supercapacitors: Solvent Effects and Performance	U. L. I. Udayantha*, T. M. W. J. Bandara, C. P. Jayalath, and A. M. B. S. Alahakoon
	247	Preparation of a Carbon Black Dispersed Natural Rubber Material using Field Latex by Wet-Masterbatch Method	S.P.D.N. Wimukthi, S.H. Kelaniyagama, A. Gannoruwa*, S.M. Rajapaksha, A.A.G.K. Siriwardana, and G. Priyadarshana

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Poster Presentation Sessions

Track		MRA- Mechatronics, Robotics, and Automation	
Dr. Akila Wijethunga, Mr. Peshan Sampath Department of Materials and Mechanical Technology, Faculty of Technology, University of Sri Jayewardenepura	197	Review on Braille Display Actuation Methods for Visually Impaired Individuals	M.S.M. Marshad*, S.S.R. Coddipily, R.A.M. Chamishka, G.M.S.M. Gaspe and P.S.H. Pallemulla

Thursday, 23rd November 2023 – 16.15 – 17.00 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr, Rajitha Gunarathna

Track		AID- Artificial Intelligence and Data Science	
Panel Members	ID	Abstract Title	Authors
Dr. Thilak Chaminda Hapugahage, School of Computing, Esoft Metro Campus Mr. Chamila Karunathilake, Department of Information and Communications Technology, Faculty of Technology, University of Sri Jayewardenepura	102	Smart Helmet Detection System to Enhance the Safe Driving Mode of Motor-Cyclists	D. Kamalathanan*, R. Wijesinghe
	134	Suspicious Activity Likelihood Detection, Indication & Tracking, and Alert System.	S. Elancheliyan*, O. Geenath, T. Sandarekha, D. Gunasinghe, D. Alwis
	225	A Comparative Investigation into Computer Vision-based Freshness Classification of Frigate Tuna (Auxis thazard) Fish Using Eyes and Gills	M.N. Madhubhashini*, C. Liyanage, A. Alahakoon, G.L.R. Prasanga
	252	Hand Landmark Based Approach to Enhance Sinhala Sign Language Gesture Recognition	C. Wijayagrahi*, S.S. Vitharana, S.S. Vitharana

Friday Afternoon, 24th of November 2023
13.00– 15.00

Two Sessions at **FF 06**

#	Tracks
1	BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing
2	EES- Energy, Environment, and Sustainability
3	FNP- Food Security, Nutrition, and Processing Technology

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Friday, 24th November 2023 – 13.00 – 13.30 IST (UTC+5.30)

Room: FF 06

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

Track			
BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing			
Panel Members	ID	Abstract Title	Authors
<p>Dr. Dimuthu S. Manamgoda Department of Botany, Faculty of Applied Science, University of Sri Jayewardenepura</p> <p>Mr. Lalinka Herath, Lecturer on contract, Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University</p>	24	Formulating a Slow-releasing Organic Fertilizer Mixture to Enhance the Productivity in the Sri Lankan Rice Farming Industry	S. S. Fernando*, S.M.J.M. Kurera , C.H. Abeysekara and M. Kooragoda
	25	Optimization of Culture Conditions for Production of Alpha-Amylase Enzymes from Recombinant Escherichia coli clones	R. Bulegoda *, Shehan M.J.M. Kurera and S.N.T. De Silva
	26	Comparative Analysis of NAC67 Salinity Responsive Transcription Factor in Finger millet (Eleusine coracana) and Rice (Oryza sativa) under in silico Approach	H. N. Thenuwara*, D.R. Gimhani and D. Sripal
Track			
EES- Energy, Environment, and Sustainability			
<p>Dr. Chanaka Sandaruwan, SLINTEC, Pitipana</p> <p>Dr. H.K.B.S. Chamara, Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura</p>	73	Reviewing the Possibility of Increasing the Interior Cooling Effect of a Garment for Enhanced Thermal Comfort via Active and Passive Cooling Methods	R.A.C.K. Gunathilaka*, E.B.D.J. Mihiranga, W.K. Wimalsiri and R.A. Attalage
	87	Production of low cost nanocellulose bio adsorbent for water purification	K.G.H. Mekala* and S.M.P.A. Koliyabandara,
	112	Investigation of Socioeconomic Factors in Relation to Chronic Kidney Disease of Unknown Etiology in the northern part of Sri Lanka -A case study on Mallavi, Mullaitivu district, Northern Province, Sri Lanka	K. Senthilnathan*, K. P. P. Udayagee , and A. Niroshan,

Track		FNP- Food Security, Nutrition, and Processing Technology	
Dr.Pasan Bandara, Dr.D.W.M.M.M. Kumari Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	68	Utilization of Selected Plant Ingredients to Hinder the Glycaemic Impact of Cane Sugar and Wheat Bread	U.S. Wijewardhana*, M.A. Jayasinghe, I. Wijesekara and K.K.D.S. Ranaweera
	72	Effect of Non-thermal Preservation Techniques on the Quality Parameters of King Coconut (<i>Cocos nucifera</i> var. <i>Aurantica</i>) Water	S.M.T. Sasmini, B.G.R.R. Bandara*, M.P.M. Arachchige, M. Sivaji, H.P.D.T. Hewa Pathirana and L.L.W.C. Yalagama
	93	Determination of Arsenic, Lead, and Cadmium levels in Gotukola (<i>Centella asiatica</i>) and Mukunuwenna (<i>Alternanthera sessilis</i>) Exported to the European Union	P.H.M.G.S. Gimhani, C. Magamage*, G.A.A.R. Perera and G. Rathanayke

Friday, 24th November 2023 – 13.30 – 14.00 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr. H. G. S. Maduranga

Track		BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing	
Panel Members	ID	Abstract Title	Authors
Dr. Dimuthu S. Manamgoda Department of Botany, Faculty of Applied Science, University of Sri Jayewardenepura Mr. Lalinka Herath, Lecturer on contract,	27	ISSR-Based Genetic Diversity Assessment of Arrowroot (<i>Maranta arundinacea</i> L.) Germplasm in Sri Lanka	S.S. Sivalingam*, D.R. Gimhani, S. Malki, M.H.F. Mushfika and A.C. Wijesinghe
	35	Refurbishment of High-Density Polyethylene Container Closure System for a Pharmaceutical Company	S. Mapa * and U. Nishadhika

Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University	38	Antioxidant and sun protection potential of a range of Sri Lankan plants: suitability in cosmeceutical applications	V. T Thangavel*, N. Punyasiri, W.P.K.M Abeysekara and K. Abeysekara
Track	EES- Energy, Environment, and Sustainability		
Dr. Chanaka Sandaruwan, SLINTEC, Pitipana	115	Spatial Distribution of Ground water Hardness within the Vallipuram aquifer of Jaffana peninsula	R. Sharmila*, N. Anoja and K.A. Sirisena
Dr. H.K.B.S. Chamara, Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	123	Exploring Sustainable Reforestation strategies through conservation of Banana Peel waste to plantable papers with native seed embedding	P.G.R.L.P. Senarath
	131	The Assessment of treated wood waste management and potential health and environmental impacts: A case study on Moratuwa MC	I.S. Hewage*, M.S. Mendis, K.G.N.H. Weerasinge and R.U.Halwatura
Track	FNP- Food Security, Nutrition, and Processing Technology		
Dr.Pasan Bandara, Dr.D.W.M.M.M. Kumari	94	Assessing the Present Status and the Existing Problems of Wine Industry: A Case Study of Wine Manufacturing SMEs/ Companies in Sri Lanka	S. Karthigayini*, P.N.R.J. Amunugoda and R.A.U.J. Marapana
Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	96	Development of Gluten-free Beetroot Crackers	J.R. Nahomi*, M. Thanesh and K. Piranavan
	136	Effect of In Vitro Digestion on Total Phenolic Content of Selected Breakfast Foods	S.D. Epa Arachchi* and R.A.U.J. Marapana

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Friday, 24th November 2023 – 14.00 – 14.30 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Dr. Rohan Dasanayake

Track		BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing	
Panel Members	ID	Abstract Title	Authors
<p>Dr. Dimuthu S. Manamgoda Department of Botany, Faculty of Applied Science, University of Sri Jayewardenepura</p> <p>Mr. Lalinka Herath, Lecturer on contract, Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University</p>	101	Development of Batik Textile Colourant Using Mahogany Shale; Swietenia macrophylla, and Onion Peel; Allium cepa L.	U. Kaushalya N.K. Chandrasri*, A.G.C.S Amarasinghe and I.K. Hewavitharana
	126	Flaxseed Gel as a Natural Alternative for Commercial Growth Media for Selected Bacterial and Fungal Strains	T.D.C Perera*, Y. Ganeshalingam, A.M.K.C.B. Aththanayake and D.S.R.K. Polegodage
	140	Identification of Minimum Effective Concentration for Dettol against Escherichia coli	U.I. Perera and S. Mapa*
Track		EES- Energy, Environment, and Sustainability	
<p>Dr. Chanaka Sandaruwan, SLINTEC, Pitipana</p> <p>Dr. H.K.B.S. Chamara, Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura</p>	175	Identifying the Feasible Upcycling and Micro-plastic Elimination Methods of Used Face Masks for Sri Lankan Conditions	J.J.D.B. Ranjan and K.H.P. Madusanka,*
	207	Comparison of Lichen Species Diversity in Two different Distributed Sites in Kandy City, Sri Lanka	E.S.M. Edirisinghe,* , S.N.P. Athukorala and D. M. De Costa
	238	Treated Drinking Water Quality in Vavuniya Urban Council: A Comprehensive Analysis	S.Gamsathvani and P. Mithurshan

Track		FNP- Food Security, Nutrition, and Processing Technology	
Dr.Pasan Bandara, Dr.D.W.M.M.M. Kumari Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	145	Development of an Instant Fried Rice and Suitable Seasoning Powder Mix Incorporated with Powdered Leaves of Moringa oleifera	B.A.R.I.S. Chandradasa, B.E.P. Mendis, S.M.A.C.U. Senarathne* and R.P.N.P. Rajapakse
	167	Pilot Study on The Determination of Change in Microbiological Quality of Cooked Rice Packets Over Time in Borella Area in Colombo District	A.H.L.J.H. Atapattu, D. Pavalakumar, L.J.S. Undugoda*, S. Pathirage, and S.I. Fonseka
	169	A Comparative Study on Quality Parameters of Milk; Based on Selected Milk Collection and Chilling Centers in Sri Lanka	R.L.D. Jananika, R.M.S. Gunathileke, K.N. Wijayasekara* and N. Kannangara

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Friday, 24th November 2023 – 14.30 – 15.00 IST (UTC+5.30)

Room: FF 06

Session Coordinator: Ms. Udani Gunawardhana

Track		BBI- Biotechnology, Bioengineering, and Industrial Bioprocessing	
Panel Members	ID	Abstract Title	Authors
<p>Dr. Dimuthu S. Manamgoda Department of Botany, Faculty of Applied Science, University of Sri Jayewardenepura</p> <p>Mr. Lalinka Herath, Lecturer on contract, Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University</p>	50	Development of a protocol for shortening the breeding cycle of Pomegranate (<i>Punica granatum</i> L.) by in vitro seed culture	Y.C Weerathne*, D. Udayanga and L.G.I Samanmalie
	53	Variation of Microalgal Diversity in Selected Coastal Locations of Sri Lanka with Varying Degrees of Water Pollution.	R.M.D. Rathnayake*, B.L.W.K. Balasooriya, S.A.V. Viduranga
	153	miRNA Profiling of <i>Edwardsiella piscicida</i> Challenged Olive Flounder (<i>Paralichthys olivaceus</i>) Plasma Derived Extracellular Vesicles (EVs)	C. Nikapitiya*, P. W. Withanage, E.H.T.T. Jayathilaka and M. De Zoysa
	168	Isolation of the beta-Rhizobium cupriavidus bacteria from the <i>Mimosa pigara</i> plant and soil application Rhizobium biofertilizer effect of the Waraniya (<i>Capsium Annuum</i>) chili plants.	S.G.A Umayangana *
	241	Effective comparison of antibiotic effectiveness of commercially available growth media and natural growth media	Y. Ganeshalingam*
	243	Isolation, Extraction and Characterization of Marine Bio Pigments and the Study of their Applicative Feasibility in Skin Care Products.	F. S. A. Hamid*, T. T. Sithambaram, H. A. Fahim, Tehani, M. N. Rodrigo and A.M.K.C.B. Aththanayake

	264	Commercially Potential Ceylon Cinnamon (<i>Cinnamomum zeylanicum Blume</i>) Leaf Tea: A Medicinal Tea	P.N. Edirisooriya*, A.A. Wijeweera, W.P.K.M. Abeysekara, W.K.S.M. Abeysekera and G.A.S. Premakumara
Track	FNP- Food Security, Nutrition, and Processing Technology		
Dr.Pasan Bandara, Dr.D.W.M.M.M. Kumari Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura	173	A Comparative Study of Fatty Acid Composition of Coconut Oil from Different Sources by Gas Chromatography-Mass Spectrometry	E.M.R.D. Edirisinghe, H.M.D. Nayomi* and M.A.J.W. Perera
	211	Evaluation of The Effect of Different Packaging Materials on the Shelf Life of Dried Red Pepper (<i>Capsicum annum L.</i>) Flakes Stored in Different Environment Conditions	G.M.G.B. Oshadhi*, M.P.M. Arachchige and N. Hettiarachchi
	255	A Comparative Study of Soxhlet Extraction and Maceration Techniques for Phenolic Compounds Extraction in <i>Zingiber officinale</i> , <i>Coccinia grandis</i> , and <i>Clitoria ternatea</i>	G.A.H.K.Y. Jayaweera, A.M.A.U. Alahakoon*, G.L.R. Prasanga, K.G.L.R. Jayathunge, M. Silva and J. Chandrapala