

## SCHEMCON – 2021

Date: 22 – 23 October 2021

Organizers: IISER Bhopal and MANIT Bhopal

List of the winners under different categories selected in various technical sessions during SCHEMCON – 2021

### **M. P. Chary Award (awarded jointly)**

<b>Authors and Affiliation</b>	<b>Title of the Presentation</b>
Anupam Mukherjee Cavitation & Dynamics Lab, Process Engineering and Technology Transfer Division (PETT), CSIR-IICT, Hyderabad	Development of a Skid mounted Wastewater Recycling Unit (100 L/h) for Mechanized Sewage Cleaning System: A “Make in India” Initiative
Khantesh Agrawal Department of Chemical Engineering, Indian Institute of Science (IISc), Bangalore, Karnataka	Ultra-low Pt loaded Nanostructured Thin Film Electrodes for PEM Fuel Cell Vehicle Application

### **Session 1A: Separation Process**

<b>Position</b>	<b>Abstract No.</b>	<b>Title of the paper</b>	<b>Authors and Affiliation</b>
1 <sup>st</sup> Prize	SCHEM/21/016	Improving Flow Assurance of Waxy Crude Oil with the help of Fruit Extract	Biswadeep Pal, Tarun Kumar Naiya Dept. of Petroleum Engineering, IIT (ISM) Dhanbad
2 <sup>nd</sup> Prize	SCHEM/21/056	Removal of Contaminants from Water using Magnetic Nanoparticles	KoenaMaji, SurabhiAswath, Anindita Laha Department of Chemical Engineering, Manipal Institute of Technology, Karnataka
3 <sup>rd</sup> Prize	SCHEM/21/014	Forward Osmosis Aided concentration of Sucrose from Sugarcane Juice using Hydrophilized Polyamide Membrane	Srishti Sridhar <sup>1</sup> , Bukke Vani <sup>2</sup> , Mukunda Vani. M <sup>1</sup> <sup>1</sup> Department of Chemical Engineering, Anurag University, Ghatkesar, Telangana, India <sup>2</sup> PETT Division, CSIR-Indian Institute of Chemical Technology (IICT), Tarnaka, India

### **Session 1B: Process Modeling and Simulation**

<b>Position</b>	<b>Abstract No.</b>	<b>Title of the paper</b>	<b>Authors and Affiliation</b>
1 <sup>st</sup> Prize	SCHEM/21/083	Load Frequency Control of Multi-Source System with Wind Penetration using Hybrid Optimization Technique	Puja Patidar and Shashi Bhushan Singh Department of Electrical Engineering NIT Kurukshetra, Haryana 136119, India
2 <sup>nd</sup> Prize	SCHEM/21/045	Investigation and Simulation of Fluid Flow in a Microfluidic T-junction device using Open FOAM	Harsha Sri Vardhan Kanuru, Dushyant Singh Bhadouria, Hitesh Songara, Subhajit Patra Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, Madhya Pradesh

3 <sup>rd</sup> Prize	SCHEM/21/094	Inedible Plant: A Good Source of Environment Friendly Fuel	Shreya Singh, Vivek, Himani Agrawal, Aayush Gupta, Jatin Singh, S.K. Gupta Harcourt Butler Technical University, Kanpur, Uttar Pradesh
	SCHEM/21/096	Digital Sustainable Engineering: Will Abate Air Pollution?	Abhishek Mathur, S. Suresh Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, Madhya Pradesh

### Session 2A: Environmental Engineering

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/108	Effect of Split Angle on Hydrodynamics of Flow Through Ventilator Splitter	Aniruddh Mukunth, Raj Shree R., Naren P. R. School of Chemical & Biotechnology, SASTRA Deemed University, Tamilnadu
2 <sup>nd</sup> Prize	SCHEM/21/005	Pyrolysis Kinetics of Multilayer Plastic Waste and Process assessment to Fuel Conversion	Surya Karla <sup>1</sup> , Praneetha Buddha <sup>1</sup> , Harsha Nagar <sup>2</sup> , Vineet Aniya <sup>3</sup> <sup>1</sup> Dept. of Chemical Engineering, University College of Technology, Osmania University, Hyderabad <sup>2</sup> Department of Chemical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad <sup>3</sup> PETT Department, CSIR -Indian Institute of Chemical Technology, Hyderabad
3 <sup>rd</sup> Prize	SCHEM/21/006	Review on E-Waste and its Harmful Effects on Environment	P N Nikitha Bharathi, T. Bala Narsaiah Department of Chemical Engineering, JNTUH College of Engineering, Hyderabad

### Session 2B: Recent Trends in Chemical Engineering

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/032	Facile Construction of a WS <sub>2</sub> /CdS Heterostructures for Visible-light Photoelectrochemical Photoanode	Muthuraja V, Praveen Meduri Department of Chemical Engineering, IIT Hyderabad, Telangana (India)
2 <sup>nd</sup> Prize	SCHEM/21/001	Review on Metal Oxide Catalysts for Water Splitting Applications	Anjali Prasad, S. Suresh, Sunder Lal Pal Department of Chemical Engineering Maulana Azad National Institute of Technology Bhopal, Madhya Pradesh, India
3 <sup>rd</sup> Prize	SCHEM/21/069	Synthesis of Alkyd Resins from Polyethylene Terephthalate	Nandakumar Vijay Gurav, Aakanksha Mukesh Mhatre, Rohitbabu G. Nalwala Department of Chemical Engineering, Gharda Institute of Technology, Lavel, Khed

	SCHEM/21/019	Natural Convection Cooling of A Thermal Flask	M. Sai Soumya Sri1, K.Sujana, K.Vamsy Vaishnavi, B. Sreenivasulu Gayatri Vidya Parishad College of Engineering, Visakhapatnam, A.P, India
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### Session 3A: Wastewater Treatment

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/022	Treatment of Rice Gruel Wastewater using a Microbial Fuel Cell Incorporated with Sulfonated Polysulfone Membrane	S. Anil Reddy <sup>1</sup> , Srishti Sridhar <sup>1</sup> , Shaik Nazia <sup>2</sup> , Mukunda Vani <sup>1</sup> Chemical Engineering Dept., Anurag University, Ghatkesar, Hyderabad <sup>2</sup> PETT Division, CSIR-Indian Institute of Chemical Technology, Hyderabad
2 <sup>nd</sup> Prize	SCHEM/21/060	Study on the Effect of Magnetic Field on the Electrolysis of Water	P Venkata Varaha Mahadesh, V Sri Vishnu Vardhan Sharma, K J Vishal, A Bilwesh, T S Ramya Lakshmi, J V S Murty Dept. of Chemical Engineering, Gayatri Vidya Parishad College of Engineering (A), Visakhapatnam, Andra Pradesh
3 <sup>rd</sup> Prize	SCHEM/21/067	Intensification of Temperature Swing Adsorption	Saima M. Parkar, Rutuja S. Mulukh, Gautami J. Narhari, Sunil J. Kulkarni Department of Chemical Engineering, Gharda Institute of Technology, Lavel, Maharashtra

### Session 3B: Nanotechnology, Composite and Waste Management

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/117	Evaluation of Performance and Combustion of DI Diesel Engine using Blended Waste Packaging Plastic Pyrolysis Oil	Bablu Alawa, Sankar Chakma Department of Chemical Engineering, Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
2 <sup>nd</sup> Prize	SCHEM/21/116	Waste Derived Magnetic Nanoparticles and Its Characteristic Behaviors in Oil Separation	Abhinav Chandel <sup>1</sup> , Vishrant Kumar <sup>2</sup> and Sankar Chakma <sup>2</sup> <sup>1</sup> Department of Physics, <sup>2</sup> Department of Chemical Engineering, Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
3 <sup>rd</sup> Prize	SCHEM/21/113	A Study on the Recent Advances in the Synthesis Route of Graphene Nanomaterial	Aban Mandal, Anubhav Das, Ranjana Das, Chiranjib Bhattacharjee Jadavpur University, Kolkata 700032, West Bengal

	SCHEM/21/118	Waste Derived Porous Superhydrophobic Carbon Nanomaterials for Photo-thermal Degradation and Desalination	Vishrant Kumar <sup>1</sup> , Abhinav Chandel <sup>2</sup> and Sankar Chakma <sup>1</sup> <sup>1</sup> Department of Chemical Engineering, <sup>2</sup> Department of Physics, Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
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### Session 3C: Nanotechnology

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/011	Stripping Voltammetric Sensing of Lead Ions (Pb <sup>+2</sup> ) in Water using a bare Gold Electrode	Monika <sup>1</sup> , Babankumar S Bansod <sup>1,2</sup> <sup>1</sup> AcSIR -CSIR-Central Scientific Instrument Organisation, Chandigarh, <sup>1,2</sup> CSIR-Central Scientific Instrument Organisation, Chandigarh
	SCHEM/21/078	Estimation of Thermophysical Properties and Critical Properties of Natural Deep Eutectic Solvents (NADES)	M.Kalyani <sup>1</sup> , P. Anusha <sup>1</sup> , N. V. Rane <sup>2</sup> , Alka Kumari <sup>3</sup> , S. Illaiah <sup>1</sup> <sup>1</sup> Univ. College of Technology, Osmania University, Hyderabad <sup>2</sup> ICT, Mumbai, Maharashtra <sup>3</sup> PETT Division, CSIR -Indian Institute of Chemical Technology, Hyderabad
2 <sup>nd</sup> Prize	SCHEM/21/034	Does shift to Electric Vehicles reduce Carbon Footprint? A Case Study: Tata Nexon versus Tata Nexon EV	Raghavendra B. Iyer <sup>1</sup> , Suprajha N. <sup>1</sup> , Vengdhanathan S. <sup>1</sup> , Devaraj S. <sup>2</sup> <sup>1</sup> School of Chemical and Biotechnology, SASTRA Deemed University, Tamilnadu <sup>2</sup> Anusandhan Kendra, SASTRA Deemed University, Tamilnadu
3 <sup>rd</sup> Prize	SCHEM/21/004	Investigation of the Structural, Mechanical and Thermal Properties of Polyvinyl Alcohol-Polyaniline Film Doped with Zinc Oxide Nanoparticles	Siddharth Tiwari, Sufiyan Ahmed, Akhil Shenoy M.S. Ramaiah Institute of Technology, MS Ramaiah Nagar, Bengaluru, Karnataka

### Session 4A: Energy and Environment

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/064	Renewable Energy Resources: Potential, Estimation, Utilization and Limitation	Siddhi Shukla, Prashant Kumbhkar, Samatha Singh Department of Chemical Engineering, Indore Institute of Science and Technology, Indore, Madhya Pradesh
2 <sup>nd</sup> Prize	SCHEM/21/091	Conversion of Plastic Waste to Fuel: Economical Technique for Waste Reduction and Energy Recovery	Mehtab Singh Chouhan, Sanjay Verma, Ashok K. Sharma and Sarita Sharma Chemical Engineering Department, Ujjain Engineering

			College, Ujjain, Madhya Pradesh
3 <sup>rd</sup> Prize	SCHEM/21/043	Biodiesel production from Chlorella Minutissima Algae Oil using Sodium Silicate as a Heterogeneous Catalyst Employing Thermal and Microwave Assisted Transesterification Process	Sonali <sup>1</sup> , Rajiv Arora <sup>2</sup> , Disha Guliani <sup>3</sup> , Ravinder Kumar Wanchoo <sup>1</sup> , Amrit Pal Toor <sup>1,3</sup> <sup>1</sup> Dr. S.S. Bhatnagar University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh <sup>2</sup> Shaheed Bhagat Singh State Technical Campus, Ferozepur, Punjab <sup>3</sup> Energy Research Centre, Panjab University, Chandigarh

### Session 4B: Biochemical Engineering

Position	Abstract No.	Title of the paper	Authors and Affiliation
1 <sup>st</sup> Prize	SCHEM/21/085	Development of a Low Cost in Vitro System for Growing of Carnivorous Plants	Aveek Samanta <sup>1</sup> , Subir Samanta <sup>2</sup> <sup>1</sup> Department of Botany, Prabhat Kumar College, Contai, WB <sup>2</sup> Department of Botany, Aghore Kamini Prakash Chandra Mahavidyalaya, WB
2 <sup>nd</sup> Prize	SCHEM/21/081	Continuous Pharmaceutical Manufacturing (CPM) as an Approach Towards Sustainability: A Case Study in The Indian Context	Md Meraj Khalid Department of Chemical Engineering, Aligarh Muslim University, Aligarh, UP
3 <sup>rd</sup> Prize	SCHEM/21/070	Comparative analysis of Batch reactor and Tubular Coil Reactor for Biodiesel production	Ajeet Kumar Pajapati <sup>1</sup> , Dr Rakesh Kumar <sup>2</sup> Dept. of Chemical Engineering and Engineering Sciences, Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi, India
	SCHEM/21/102	Adsorption of Heavy Metals from Waste Water using Low Cost Adsorbents	Mrityunjay Kumar, Oyshee Goswami, Kadrunnisa Khatun, Sonali Samanta, Keka Rana Dept. of Chemical Engineering, Haldia Institute of Technology, Haldia, West Bengal