

Jose V Parambil
(Editor)

*Abstracts of the International Conference on Separation
and Purification Technologies 2023, IIT Patna
ICSPT 2023 (7-8 December 2023)*

Organized by
Department of Chemical & Biochemical Engineering,
Indian Institute of Technology Patna, India

Published by
AIJR Publisher, Dhaurahra, Balrampur, India 271604



Table of Contents

Disclaimer	i
Preface	vii
About the Conference	viii
About the Conference Organizer	ix
Director's Message	xii
Message from the A. Dean-R&D.....	xiii
Keynote Speakers.....	xiv
Glimpses from the Conference	xv
Conference Schedule	xvi
Sponsors.....	xvii
Technical Sessions	xviii
Microwave-assisted Anzymatic Pretreatment of Microalgal Biomass for Recovery of Valuable Bioproducts <i>Mamta Bhandari, Chhavi Chauhan, Sanjeev Kumar Prajapati</i>	1
Pretreatment, Separation and Purification Techniques for Food Industry Waste Utilization <i>Winny Routray, Subhanki Padhi, Shristi Shefali Saraugi, Abhirup Mitra</i>	2
Functionalized Materials for Water Purification <i>Somak Chatterjee</i>	3
Removal and Recovery of Chromium from Contaminated Agricultural Soil <i>G. Muthuraman</i>	4
Crystal Engineering of the Organic Solid-state Emitters <i>Aijaz Ahamad Dar</i>	5
Agricultural Waste Assessment as Adsorbents for the Removal of Pollutants from Industrial Effluents <i>Pushpa Jha</i>	6
Polygalacturonase from <i>Aspergillus carbonarius</i> - Production, Purification and its Applications in Food Industries <i>E. Nakkeeran</i>	7
Advanced Extraction Methods for the Recovery of Organic Chemicals from Aqueous Phase Derived Through Hydrothermal Liquefaction <i>Priya Bisht, Sushil Kumar, Sanjeev Kumar Prajapati</i>	8
LCMS based Dereplication Guided Identification and Purification of Novel Metabolites using Silica Matrix from <i>Dysoxylum malabaricum</i> <i>Nivedita Bhardwaj, Nancy Tripathi, Shreyans K. Jain</i>	9
Extraction and Purification of New Compounds from <i>Murraya paniculata</i> to Investigate their Cytotoxic Potential <i>Sanju Kumari, Jac Fredo AR and Shreyans Kumar Jain</i>	10
Interfacial and Dynamical Behavior of Droplet Coalescence: A Molecular Dynamics Study <i>Sana Perween, Sandip Khan</i>	11

Microalgal Biomass Harvesting using Sewage Sludge Cultivated in Hydroponics Effluent <i>Harshit Tiwari, Sanjeev Kumar Prajapati</i>	12
Prediction of Organic Dyes Absorption Wavelength Using Different Machine Learning Boosting Models <i>Kapil Dev Mahato, S S Gourab Kumar Das, Chandrashekhar Azad, Uday Kumar</i>	13
Micromachining of a Novel Electric Eel Inspired Microchannel for Bio-nano Particle Separation <i>Jeshurun A, Samuel G L</i>	14
Case Study on Advanced Separation Techniques used in Alkali Leaching-based Mineral Processing Plant <i>Vipin Kumar Sharma, Dr. T. Sunil Kumar Thamida, Dr. B. Naveen Kumar Reddy</i>	15
Removal of Ciprofloxacin from Aqueous Solution Using Graphene Oxide and Reduced Graphene Oxide <i>Shashi Prakash Gupta, Sujoy Kumar Samanta</i>	16
Wetting Modulation of Starch-Poly Vinyl Alcohol Based Membranes for Under Oil Recovery of Water <i>Arpita Padhan, Dr. Vickramjeet Singh</i>	17
Wetting Behavior and Interfacial Dynamics of Aqueous Deep Eutectic Solvents on Diverse Substrates through Molecular Dynamics Simulations: Implications for Enhanced Oil Recovery and Sustainable Applications <i>Alok Kumar, Swasti Medha, Devargya Chakraborty, Debashis Kundu, Sandip Khan</i>	18
Fabrication of Nonfluorinated and Superhydrophobic/Superoleophilic PDMS/PMMA Electrospun Membranes for Vacuum-driven Separation of Moisture from Virgin Coconut Oil <i>Mohammad Irfan, Pardeep Kumar, KSMS Raghavarao, Narendra Singh</i>	19
Effect of Sintering Temperature on Multipurpose Ceramic Membrane Fabricated Using Cheaper Raw Materials <i>Abhishek Keshav Sharan Saxena, A.B. Soni, Anandkumar Jayapal</i>	20
Sonocrystallization Approach to Modify Crystal Habit for Improving Powder Processability <i>Maan Singh, Madhukiran R. Dhondale, Dinesh Kumar</i>	21
Polymorphism in L-Glutamic Acid using Combined Cooling and Antisolvent Crystallization <i>Chahat Jain, Sameer V. Dalvi</i>	22
Encapsulation of Anthocyanins from <i>Garcinia indica</i> in the Nano-complexes formed by Sodium Caseinate and Carboxymethyl Cellulose <i>Chaitra Chandrakant Shanbhag, Regupathi Iyyaswami, Tshering Samdrup, Prajna Rao Krishnapura, Prasanna D. Belur</i>	23
Extraction of Cellulose from Lignocellulosic Biomass: Dependence of Rheological Properties on the Concentration, Ionic Strength and pH of Cellulose <i>Subhanki Padhi, Winny Routray</i>	24
Ultrasound-assisted Extraction and Quantification of Antioxidant Activity and Phenolic Content of <i>Cordia Dichotoma</i> Leaf Extracts <i>Monika C. Diwathe, Bidyut Mazumdar, Anandkumar J.</i>	25
Biochar as a Potential Filtration and Separation Media <i>Shristi Shefali Saraugi, Winny Routray</i>	26

Harnessing Microbial cell -Biochar Synergy for Eco-Friendly Wastewater Treatment <i>Aparna Singh, Soumya Koippully Manikandan, Vaishakh Nair</i>	27
Crystallization of 4-Acetaminophen (Paracetamol) Through Continuous Slug Flow Crystallizer <i>Neelesh Nandan, Jose V Parambil</i>	28
A study on the synthesis and characterization of 1:1 SMZ-ASA cocrystal with improved aqueous solubility and dissolution rate <i>Anindita Saha and Jose V Parambil</i>	29
Hydrophobic-Polar Natural Deep Eutectic Solvent-based Phytochemical Extraction from <i>Aegle marmelos</i> Leaves <i>Rashi Srivastava, and Jose V Parambil</i>	30
Research Photography Competition.....	31