11th DAE – BRNS Biennial Symposium on

Emerging Trends in Separation Science and Technology

SESTEC – 2024

Technical Programme

Venue : HSNC University, Mumbai

July 10-13, 2024

Organised by

Bhabha Atomic Research Centre, Mumbai

in association with

Hyderabad (Sind) National Collegiate University, Mumbai

Association of Separation Scientists and Technologists

Wednesday, July 10, 2024

8:30 – 9:30	**Registration**		
9:30-10:30	**Inauguration, Keynote presentation & ASSET Award Distribution**		
10:30-11:00	***High Tea (Group Photo)***		
11:00 -12:45	***Session 1***		
	11:00 - 11:35	**PL-1** **Advanced polymer-based membranes with tailored adsorptive and catalytic properties** *(Prof. M. Ulbricht, University of Duisburg-Essen, Germany)*	
	11:35 -12:10	**PL-2** **Closed nuclear fuel cycle strategy in Russia** *(Prof. S. Kalmykov, Lomonosov Moscow State University, Russia)*	
	12:10-12:45	**PL-3** **Commissioning Experience of Demonstration Fast Reactor Fuel Reprocessing Plant** *(Shri K. Rajan, IGCAR, Kalpakkam, India)*	
13:00-14:00	***Lunch***		
	Session 2		
14:00-15:40		***Session 2A***	***Session 2 B***
	14:00 – 14:30	**IT-1** **Covalent organic framework membranes for molecular separation and beyond** *(Dr. Bishnu P. Biswal, NISER, Bhubaneswar)*	**IT-3** **Probing the possible building blocks of Fe^{3+} and Fe^{3+}-As^{3+} containing natural minerals for permanent decontamination** *(Prof. Sugata Ray, IACS,Kolkata)*
	14:30– 15:00	**IT-2** **Multiple Ligand and Selective Oxidation Based Approach for Am/Cm Separation** *(Dr. Arunasis Bhattacharyya, BARC, Mumbai)*	**IT-4** **Multiscale Modeling of Metal-Ion-Ligand Complexation and Decomplexation Phenomena in Solvent Extraction** *(Dr.Sk. Musharaf Ali, BARC,Mumbai)*
	15:00 – 15:20	**SL -1** **Aqueous reprocessing of metallic alloy fuels at IGCAR** *(Dr B. Sreenivasulu, IGCAR, Kalpakkam)*	**SL-3** **Production and electrochemical separation of rare earth radiometals for formulation of theranostic radiopharmaceuticals** *(Rubel Chakrarvarty, BARC, Mumbai)*
	15:20– 15:40	**SL -2** **Speciation of actinides with various complexing agents (Aqueous chelators, Deep eutectic solvents and Electrodic materials) and their relevant applications** *(Dr. Ashutosh Srivastava, BARC, Mumbai)*	**SL-4** **Recent Advances in Liquid–Liquid Extraction: Equipment and Control Philosophy** *(Dr. M.V.S.R. Ravi Kanth, NFC , Hyderabad)*

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15:40-16:10	*Tea Break*	
16:10-18:00	*Session 3*	
	Session 3A **Oral Presentations (10 papers)** ***(A1, A10, B46, B49, B7, B80, D15, D-17, E4, E8)***	***Session 3B*** **Oral Presentations (10apers)** ***(A15, A5, B5, B55, C12, C13, D1, E14, E9, F12)***
18:00-18:30	*Sponsor Presentation*	
18:30 - onward	**Cultural Program and Dinner**	

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9:30-10:40	*Session 4*		
	9:30-10:05	**PL-4** **Integrated electrocoagulation and membrane distillation for treating hydraulic fracturing produced water** *(Prof. R. Wickramasinghe, University of Arkansas, USA)*	
	10:05-10:40	**PL-5** **Production and Applications of Radioisotopes at RIKEN RI Beam Factory – Search for New Elements through Therapy of Cancer** *(Dr. H. Haba, Nishina Center for Accelerator-Based Science, RIKEN, Japan)*	
10:40-11:10	*Tea Break*		
		Session 5	
11:10-12:50		*Session 5A*	*Session 5B*
	11:10-11:40	**IT-5** **Innovative Approaches for Sustainable Manufacturing of Functionalized Membranes for Metal Extraction and Recovery** *(Prof. C. Fontàs, University of Girona, Spain)*	**IT-7** **Synthesis of Functional Molecules, Polymers & Resins for Separation Chemistry** *(Prof K. Vijayakrishna, IIT, Bhubaneswar)*
	11:40-12:10	**IT-6** **Separation science at the core of environmental remediation of contaminated sediments** *(Prof. Upal Ghosh, University of Maryland, USA*	**IT-8** **N-heterocyclic ligands for separation of trivalent f-elements** *(Prof. Vladimir G. Petrov., Lomonosov Moscow State University, Russia)*
	12:10-12:30	**SL-5** **Uranium deposit of India along with current status of UCIL mines and future roadmap; An overview** *(Shri Prasanta Das，UCIL)*	**SL-7** **Role of supported liquid membrane for Actinide assay in Nuclear Fuel Cycle** *(Dr. Sumana Paul, BARC)*

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	12:30-12:50	**SL-6** **Bioremediation of uranium contamination with enzymatic uranium mineralization** *(Dr. C Acharya, BARC, Mumbai)*	**SL-8** **Conducting molten salt electrorefining of Uranium metal at 10 kg per batch scale: Challenges and recent achievements** *(Shri S.P. Ruhela, IGCAR, Kalpakkam)*
13.00-14.00	***Lunch***		
14:00-16:00	***Session 6*** ***(Poster presentation With Floating Tea)*** ***(A2, A3, A4, A6, A7, A8, A11, A12, A13, A14, A16, A17, A18, A19, B1, B2, B3, B4, B6, B8, B9, B10, B11, B12, B13, B14, B15, B17, B18, B19, B20, B21, B23, B25, B26, B27, B28, B29, B30, B31, B34, B36, B37, B38, B39, B40, B41, B44, B45, B47, B48, B50, B51, B52, B53, B54, B56, B59, B60, B61, B62, B64, B65, B66, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B81, B82, B83, B84, B85, C1, C4, C5, C6, C10)***		
	Session 7		
16:00-18:00		***Session 7A*** ***Oral Presentations*** ***(A9, B16, B57, B58, C15, C18, E15, E16, F2, F4)***	***Session 7A*** ***Oral Presentations*** ***(B22, B24, B63, B67, C19, C2, E17, E18, G3, G5)***
18:00-18:30	***Break***		
18:30 - onward	***Dinner***		

Friday, July 12, 2024

		Session 8	
9:30-11:00		***Session 8A*** ***Wealth from Waste: Recycling Perspectives***	***Session 8B*** ***HWB Session***
	9:30-10:00	**IT-9** **Advanced Oxidation Methods for Treatment of Industrial Wastewater** *(Prof. Anurag Garg, IIT Mumbai)*	**IT-12** **Non-nuclear Applications of Heavy Water/Deuterium** *(Smt Ananya Verma, HWB, Mumbai)*
	10:00-10:30	**IT-10** **Deep Eutectic Solvent: Promising alternative for the recovery of metal values from waste through hydrometallurgical route** *(Prof. Sujata Mishra, ITER, Siksha 'O'Anusandhan, Bhubaneswar)*	**IT-13** **Isotopic Separations at HWB** *(Ajit R Dusane, HWB, Mumbai)*

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	10:30-11:00	**IT-11** **Radiation Engineered Advanced Materials: Pioneering Sustainable Solutions for Water Pollution Remediation** *(Dr. Virendra Kumar, BARC, Mumbai)*	**IT-14** **Recovery of valuable metals at Heavy Water Board** *(Shri Nilesh Babasaheb Veer, HWB, Mumbai)*
11:00-11:30	***Tea Break***		
		Session 9	
11:30-12:50		***Session 9A***	***Session 9B***
	11:30-12:00	**IT-15** **High-loading Immobilization of ultra-selective nano-sorbents in water filters for fast cesium and ammonium removal** *(Dr. Oded Nir, Zuckerberg Institute for Water Research, Israel)*	**IT-17** **Processing of Uranium ores at UCIL Mill's in India** *(Shri J D Kannan, UCIL)*
	12:00-12:30	**IT-16** **Addressing Questions of Sustainability in Advanced Nuclear Fuel Cycles** *(Dr. Robin Taylor, National Nuclear Laboratory, UK)*	**IT-18** **From Concept to Reality: Zwitterionic Polymeric Membranes Revolutionizing Separation Technology** (Prof Arun M. Isloor, NIT, Surathkal)
	12:30-12:50	**SL-9** **Mechanisms of actinide and lanthanide extraction by polydentate N,O-donor ligands** *(Dr. Petr I. Matveev, Lomonosov Moscow State University, Russia)*	**SL-10** **Key Aspects in the Development of Analytical Methodologies for Radiopharmaceuticals in High Performance Liquid Chromatography** *(R Mercado, Chilean Nuclear Energy Commission, Chile)*
13.00-14.00	***Lunch***		
14:00-16:00	***Session 10*** ***(Poster presentation With Floating Tea)*** ***(C7, C8, C9, C11, C14, C16, C17, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D16, D18, D19, D20, D21, D22, D23, E1, E3, E5, E6, E7, E10, E11, E12, E13, E20, E21, F1, F3, F5, F6, F7, F8, F9, F10, F11, F13, F14, G1, G2, G4, G6, G7, G9, G10, G11, G12, G13, G14, G15, G16, G17, H1, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11, H12, H13, H14, H15, H17, I2, I3, I5, I8, I12, I13, I14, I15, I16, I17, I18, I19)***		

Friday, July 11, 2024

	Session 11	
16:00-18:00	***Session 11A*** ***Oral Presentations (10 papers)*** ***(B32, B33, I1, I11, C3, D2, E19, E2, I6, I9)***	***Session 11B*** ***Oral*** ***Presentations (10 papers)*** ***(B35, B42, I10, I4, G8, H16, E22, I7)***
18:30-onward	***ASSET Award Lectures and AGM meeting followed by dinner***	

Saturday, July 13, 2024

9:30-10.40	***Session 12***		
	9:30-10:05	**PL-6** **Application of Micro Polymer Inclusion Beads for Zn(II) Separation** *(Prof. Spas D. Kolev, The University of Melbourne, Australia)*	
	10:05-10:40	**PL-7** **Intensified separations using ultrasound focusing on extraction, leaching and crystallization** *(Prof. P Gogate, ICT, Mumbai, India)*	
10.40-11:10	***Tea Break***		
	Session 13		
		Session 13A	***Session 13B***
11:10-12:10	**11:10-11:40**	**IT-19** **Uranium Hexafluoride Chemistry in Ionic Liquids: Innovations for Nuclear Fuel Cycle Applications** *(Prof. Ken Czerwinski, University of Nevada, USA)*	**IT-21** **Rare Earths Resource Processing for Establishing Value Supply Chain** *(Dr. D. K. Singh, BARC, Mumbai)*
	11.40-12.10	**IT-20** **Seaweed-derived innovative materials for sustainable environmental remediation** *(Dr Ramavatar Meena, CSIR-CSMCRI, Bhavnagar)*	**IT-22** **Structurally Engineered Porous Monolith Materials as Solid-State Naked-Eye Ion-Sensors and Visible Light-Induced Photocatalysts for Environmental Decontamination Applications** *(Dr. D Prabhakaran, VIT Vellore)*

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12.15-13.00	*Break*
13.00-14.00	*Lunch*
Session 14	
14:00-15:00	*Panel Discussion & Valedictory Session*

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