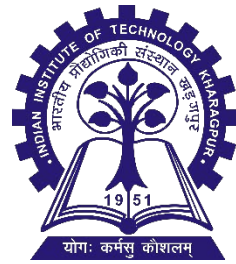




5th Indo-German Workshop on
Advances in Materials, Reaction, and Separation
Processes



February 19-21 | 2024



Indian Institute of Technology Kharagpur

Supported by:



Sunday, 18 February 2024

7:00 PM

*Welcome Reception (Venue - Technology Club)***Monday, 19 February 2024**

8:30 AM Opening Remarks

9:00 AM *Refreshment break*

9:30 AM	Andreas Seidel-Morgenstern	MPI - Magdeburg	Improved provision of pure enantiomers by coupling separation, racemization and recycling processes
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10:00 AM	Sirshendu De	IIT Kharagpur	Indigenous spinning of hollow fiber membranes and their applications
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10:30 AM	Akkihebbal K Suresh	IIT Bombay	Transport rate intensification using nanofluids
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11:00 AM	Bhaskar Bhaduri	IIT Kharagpur	Ceria-supported chemical vapor deposition grown carbon nanoforest for the removal of potentially toxic chemicals from water
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11:30 AM *Coffee Break*

12:00 PM	Rabibrata Mukherjee	IIT Kharagpur	
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12:30 PM	Anand V Rao	ICON Analytical	
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1:00 PM *Lunch Break (Venue - SATHI Lawn)*

2:30 PM	Olaf Deutschmann	Karlsruhe Institute	Metals as carbon-free energy carriers
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3:00 PM	Sri Sivakumar	IIT Kanpur	Development of Nanocatalysts for Environmental Applications
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3:30 PM	Jens Bremer	Clausthal University	Enhancing Flexibility in Green Energy Production: Redesign of Established Catalysts and Processes
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4:00 PM	Chinmay Ghoroi	IIT Gandhinagar	Nano-scale Surface Engineering to Engineer Reactions Involving Particulate Solids: CO ₂ Capture Using Nano-coated Micron-size CaO
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4:30 PM *Coffee Break*

5:00 PM	Amol A. Kulkarni	NCL Pune	Process for Continuous Production of Mesoporous Silica: Dealing with Complexities in Reaction Engineering and Scale-up
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5:30 PM	Minaz Makhania	KBR India	Developments in Reaction Engineering: Reaction and Diffusion in Foam Based catalysts
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6:00 PM	Vivek V. Buwa	IIT Delhi	Particle-/Structure-resolved CFD simulations of Solid-Catalyzed Gas-Phase Reactions in Packed Beds
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6:30 PM	Eric Otto	Otto von Guericke University	Modeling and control of particle formation in fluidized beds
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7:30 PM

Gala Dinner

Session – Separation: principles & processes

Session – Novel developments in reaction engineering

Session – Process Optimization & Intensification

Tuesday, 20 February 2024

Session – Fundamentals and Modelling

8:30 AM	Pushpavanam S	IIT Madras	Cavitation microstreaming by a confined air bubble in water
9:00 AM	Heiko Briesen	TU Munich	Fluidized bed hot melt coating for efficient protection of sensitive materials
9:30 AM	Dipankar Bandyopadhyay	IIT Guwahati	Self-organization at the Mesoscale
10:00 AM	Chandan Bera	INST Mohali	Theoretical and Computational Studies of 2D Materials
10:30 AM	Abhijit Chatterjee	IIT Bombay	Probabilistic microkinetic modelling approach: Tackling complexity in heterogeneous catalysis, multicomponent materials and solid state ionics

11:00 AM *Coffee Break*

Session – Novel Developments in Reaction Engineering

11:30 AM	Robert Güttel	Ulm University	The Periodic Transient Kinetic Method for Investigation and Modeling of Surface Reaction Steps in Hydrogenation of CO and CO ₂
12:00 PM	Koustuv Ray	IIT Kharagpur	Catalytic activity-property relationship with First-principles based surface adsorption and activation calculation
12:30 PM	Wieland Kortuz	MPI - Magdeburg	Mechanistic kinetic modeling in homogeneous and heterogeneous catalysis
1:00 PM	Akash Bhimrao Shirsath	Karlsruhe Institute	Investigating gas-phase and surface kinetics in packed-bed reactors: a detailed analysis with DETCHEM

1:30 PM *Lunch Break (Venue - SATHI Lawn)*

Session – Separation: principles & processes

3:00 PM	Rajdip Bandyopadhyaya	IIT Bombay	Materials for detecting, reacting and separating contaminants and pollutants from water
3:30 PM	Sebastian P. Schwaminger	Medical University of Graz	The versatility of iron oxide nanoparticles
4:00 PM	Santosh Kumar Sriramoju	NCL Pune	Coal Rejects Based Adsorbents for Tertiary Treatment of Coke Oven Waste Water

4:30 PM Arun Singh ANTON PAAR India Ltd.

4:50 PM *Coffee Break*

Session – Process Optimization & Intensification

5:10 PM	Madivala G. Basavaraj	IIT Madras	Exploiting Colloids and Interfaces Principles to Develop Materials for Applications in Catalysis
5:40 PM	Lothar Kaps	MPI - Magdeburg	Forced Dynamic Operation – From Theory to Experiment
6:10 PM	Irin Wilson Panjikkaran	Evonik - MPI	Membrane reactor concept for improved hydroformylation

6:40 PM **Poster Session (Venue: Vikramshila Foyer)**7:45 PM *Dinner (Venue - SATHI Lawn)*

Wednesday, 21 February 2024**Session – Fundamentals and Modelling**

8:30 AM	Ulrich Nieten	University of Stuttgart	Upscaling from rigorous pore-scale simulations to process models
9:00 AM	Wolfgang Peukert	Erlangen-Nürnberg	Progress in nanoparticle property design, fractionation and multidimensional characterization
9:30 AM	Dipin S. Pillai	IIT Kanpur	Mathematical modeling of self-propelling droplets
10:00 AM	Abir Ghosh	IIT (BHU) Varanasi	Instabilities of a Confined Thin Viscoelastic-Porous Bilayer under External Electric Field
10:30 AM	Patrick Lott	Karlsruhe Institute	Pyrolysis of methane and biogas for large-scale hydrogen production and simultaneous carbon capture

11:00 AM *Coffee Break*

Session – Smart Materials

11:30 AM	Animangsu Ghatak	IIT Kanpur	Some Results on Elasto-Capillary Effect
12:00 PM	Achim Kienle	Otto von Guericke University	Tailor-made PHA biopolymers from waste
12:30 PM	Chandra Shekhar Sharma	IIT Hyderabad	Uncovering the Potential of Candle Soot Nanocarbon for Energy Storage Applications
1:00 PM	Karthik S. Pushpavanam	IIT Gandhinagar	Fluorogenesis: Inducing Fluorescence in a Non-Fluorescent Protein Through Photoinduced Chromophore Transfer of a Genetically Encoded Chromophore

1:30 PM *Lunch Break (Venue - SATHI Lawn)*

3:00 PM Valedictory Session

7:00 PM *Dinner (Venue - SATHI Lawn)*

