



Indo-France Seminar on Metal Nanoclusters

Supported by

Indo-French Centre for the Promotion of Advanced Research
(IFCPAR/CEFIPRA)

October 2-5, 2023

| Monday, 2 nd October 2023 | |
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| 8:30 - 9:00 AM | Registration |
| 9:00 - 9:15 AM | Inauguration |
| 9:15 - 9:25 AM | Address by Nitin Seth, Director CEFIPRA |
| Session-1 | |
| Chairperson: Rodolphe Antoine | |
| 9:25 – 10:00 AM | T Pradeep IIT Madras, Chennai Title: Metal Nanoclusters: Syntheses, characterization, surface functionalization and properties |
| 10:00 - 10:35 AM | Erik Dujardin Laboratoire Interdisciplinaire Carnot de Bourgogne, Dijon Title: Embedded photon sources for quantum plasmonics: Assets and challenges of metal nanoclusters |
| 10:35 – 11:10 AM Tea Break | |
| Session-2 | |
| Chairperson: T. Pradeep | |
| 11:10 - 11:45 AM | Rodolphe Antoine Light Matter Institute CNRS and University of Lyon Title: The emergence of mass spectrometry for characterizing nanomaterials. Atomically precise nanoclusters and beyond |
| 11:45 AM - 12:20 PM | Nandakumar Kalarikkal Mahatma Gandhi University, Kottayam, Kerala Title: Novel engineered nanostructured materials for tailored applications |
| 12:20 - 12:55 PM | Benoit Mahler Light Matter Institute CNRS and University of Lyon Title: Adding new flavors to 2D nanocrystals: how ligands influence the synthesis, morphology and properties of semiconducting nanosheets |
| 12:55 - 2:15 PM Lunch Break | |
| Session-3 | |
| Chairperson: Jean-Yves Saillard | |
| 2:15 – 2:50 PM | Jayasree R S |

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| | Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum Title: Gold quantum clusters: A potential candidate for biomedical imaging and therapy |
| 2:50 - 3:25 PM | K. K. Haldar Central University of Punjab, Bathinda Title: Design and Understanding of Multifunctional Nanoscale Energy Materials as Electrocatalyst |
| 3:25 - 4:00 PM | Martinus H. V. Werts Laboratoire SATIE, ENS Rennes and CNRS Title: Microfluidic and optical-spectroscopic analysis of functionalized nanoparticles and nano-bio-assemblies |
| 4:00-4:30 PM Tea Break | |
| Session-4 Chairperson: Chayan Kanti Nandi | |
| 4:30 - 5:05 PM | Anisha Gokarna Laboratory of Light, Nanomaterials and Nanotechnologies, Troyes Title: Solution grown, highly crystalline multifunctional ZnO structures: From heterostructured to large-scale efficient growth |
| 5:05 – 5:20 PM | Gulshan Kumar IIT Jodhpur, Rajasthan Title: Parametric Analysis of ZnO Nanowires growth on Metal Seeded Substrates via Chemical Bath Deposition and their low-temperature sensing |
| 5:20 – 5:35 PM | Anusri Medda IACS, Kolkata Title: Ultrafast Electron Transfer in the Heterostructures of CdSe NPLs-Au ₂₅ Nanoclusters for Photodetector Applications |
| 5:35 - 5:50 PM | Sarita Kolay IACS, Kolkata Title: Self Assembly of Metal Nanoclusters: Non-covalent Interactions and Optical Properties |

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| Tuesday, 3rd October 2023 | |
| Session-1 Chairperson: Xavier Le Guével | |
| 9:00 - 9:35 AM | Nikhil R. Jana IACS, Kolkata Title: Nanoparticle-Based Control of Cellular Processes |
| 9:35 - 10:10 AM | Amitava Patra INST, Mohali Title: Ultrafast Carrier Relaxation Dynamics and Aggregation-Induced Emission of Metal Clusters |
| 10:10 - 10:45 AM | Jean-Yves Saillard Univ Rennes, CNRS, Rennes Title: Electronic structure of atom-precise Ag-rich and Cu-rich superatoms and supermolecules |

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| 10:45 -11:15 AM Tea Break | |
| Session-2 Chairperson: Surajit Karmar | |
| 11:15 - 11:50 AM | Nirmal Goswami CSIR-IMMT, Bhubaneswar Title: Harnessing Aggregation-Induced Emission in Supramolecular Assemblies of Metal Nanoclusters |
| 11:50 AM - 12:25 PM | Xavier Le Guével Institute for Advanced Biosciences, University Grenoble Alpes Title: Theranostic agents for shortwave infrared bioimaging and cancer therapy |
| 12:25 - 1:00 PM | Chayan Kanti Nandi IIT Mandi, Himachal Pradesh Title: Ultra long-term Super-Resolution Tracking of Lysosomes in Brain Organoids by Near- Infrared Noble Metal Nanoclusters |
| 1:00 - 2:00 PM Lunch Break | |
| 02:00 – 4:00 PM | Poster session |
| 4:00 – 8:00 PM | Visit to Rock garden and Sukhna lake |

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| Wednesday, 4th October 2023 | |
| Session-1 Chairperson: Ayan Datta | |
| 9:00 - 9:35 AM | Hans-Christian Weissker Centre Interdisciplinaire de Nanosciences de Marseille Title: Optical Spectra & Surface Plasmons in Quantum-Sized Noble-Metal Clusters and Nanoalloys from ab initio calculations |
| 9:35 - 10:10 AM | Biswarup Pathak IIT Indore Title: Breaking Conventions in Nanocluster Catalysis: Investigations using DFT and Machine Learning |
| 10:10 - 10:45 AM | Pierre Mignon Light Matter Institute CNRS and University of Lyon Title: Properties of 2D materials and adsorption of (bio)-organics on clay minerals through theoretical approaches |
| 10:45 – 10:55 AM | Meenakshi Singh Scientific coordinator, French Embassy, Delhi Title: Activities of French Embassy |
| 10:55 - 11:30 AM Tea Break | |
| Session-2 Chairperson: Hans-Christian Weissker | |
| 11:30 - 12:05 PM | Sukhendu Mandal IISER Thiruvananthapuram, Kerala Title: New Advances in Atomically Precise Silver Nanoclusters |
| 12:05 - 12:40 PM | Ayan Datta IACS, Kolkata |

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| | Title: Buckling and Defects in Two - Dimensional Atomically Thin Monolayers |
| 12:40 - 01:15 PM | Tapasi Sen INST, Mohali Title: Probing the photophysics of fluorescent single metal nanoclusters |
| 1:15 - 2:15 PM Lunch Break | |
| 2:15 - 3:15 PM | Panel discussion |
| 3:15 - 3:30 PM | Sum up session |
| 3:30 - 3:40 PM | Vote of Thanks |
| 3:40- 3:45 PM | Concluding remarks |
| 3:45 - 4:30 PM | Poster Session |
| 4:30 - 6:30 PM | INST Visit by Delegates |
| 8:00 PM | Gala Dinner |