



European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

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SYMPOSIUM V

Nanoparticles in solution: synthesis, characterization and assembly

Oral sessions : HILTON - ORANGERIE E - FIRST FLOOR

Poster sessions : ETOILE - FIRST FLOOR

Symposium Organizers:

Akira YOKO, Adschiri Laboratory, Tohoku University, Japan

David CARRIERE (Main organizer), CEA, Université Paris-Saclay, France

Dorota KOZIEJ, Institute for Nanostructure and Solid- State Physics, University of Hamburg, Germany

Ovidiu ERSEN, IPCMS, University of Strasbourg - CNRS, France

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Monday May 25

VO1 Nucleation and Non-Classical Crystallization

Chairperson(s): YOKO Akira

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| | | |
|-------|------|---|
| 08:30 | 334 | Rational synthetic design of group 4 oxide and nitride nanocrystals DE ROO Jonathan (Invited) |
| 09:00 | 876 | Investigation of the two-step nucleation mechanism using seeded molecular dynamics and umbrella sampling WU Yijian |
| 09:15 | 447 | Molecular Modeling of Nucleation Process of Metal-Organic Framework Particles WATANABE Satoshi |
| 09:30 | 3191 | From spinodal decomposition to a viscoelastic liquid precursor: early stages of mineral crystallization probed by in situ SAXS and ultrafast microfluidics RAIMBAULT Jade |
| 09:45 | 3315 | Estimation of interfacial energy at nano scale via controlled titration precipitation process RAVINDRAN Hari Priya |

Monday May 25

VO2 Synthesis in Non-Aqueous Media: From Reaction Mechanisms to Catalytic Applications

Chairperson(s): ERSEN Ovidiu

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| | | |
|-------|------|---|
| 10:30 | 1955 | Design of Nano-Objects in Molten Salts: from Synthesis Mechanisms to Electrocatalysis PORTEHAULT David (Invited) |
| 11:00 | 1289 | Cation-site disordered Cu ₃ PdN as HER electrocatalyst KOPULA KESAVAN Jagadesh |
| 11:15 | 2503 | Surface Engineering of Nickel Phosphide Nanoparticles for Catalytic Applications BAKKOUCHE Kaltoum |
| 11:30 | 460 | Elaboration of CoNi nano-alloys with well controlled morphologies for dehydrogenation catalytic applications MEKRANTER Nagy |
| 11:45 | 1619 | Engineering Excess Oxide in Nanocrystalline Ceria by Niobium Substitution HILEY Craig |

Monday May 25

VO3 Advanced Electron Microscopy and Complementary Tools

Chairperson(s): ERSEN Ovidiu

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| | | |
|-------|------|---|
| 14:30 | 1145 | Using Liquid Cell Electron Microscopy for Understanding the Formation of Anisotropic Au Nanoparticles and their Assemblies BALS Sara (Invited) |
| 15:00 | 388 | Structure and structure modification in laser-generated high-entropy alloy nanoparticles KIENLE Lorenz |
| 15:15 | 2599 | An in-depth investigation of the elaboration of novel hybrids based on Gold Nanostars Decorated with Polyoxometalates (POMs) CHRISTODOULOU Ioanna |
| 15:30 | 2452 | Nucleation and growth of nanoprecipitates in 9Cr-1Mo steel using 3D APT and TEM Sathyanadhan Sampreeth |
| 15:45 | 3127 | Optical Tomography- reconstructing plasmonic structures below the diffraction limit KENSETT Ethan |

Monday May 25

VO4 Advanced X-ray characterization in liquid

Chairperson(s): YOKO Akira

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| | | |
|-------|------|--|
| 16:30 | 2974 | Element-Specific X-ray Spectroscopy in the Liquid Phase for Materials Characterization YIN Zhong (Invited) |
| 17:00 | 2327 | Visualizing the Interplay between Etching and Sulfidization of Cu ₂ O nanocubes via in situ X-ray ptychography and X-ray Absorption Spectroscopy HUSSAK Sarah-Alexandra |
| 17:15 | 143 | Microreactor-Based Time-Resolved In Situ Synchrotron XRD of ZIF-8 Crystallization in Water/Methanol Co-Solvents DANJO Shotaro |
| 17:30 | 297 | Mechanistic insights into the formation of iron sulfide nanosheets from in situ synchrotron X-ray studies ZITO Cecilia |
| 17:45 | 2217 | Engineering BiMo oxides catalysts by in situ XANES DOLCET Paolo |
| 18:00 | 687 | Acoustic Levitation In Service Of Synchrotron X-Ray Scattering BARDOUIL Arnaud |
| 18:15 | 424 | Beyond the Core-Shell Model: Non-Classical Formation Pathways upon Seed-Mediated Growth of Metal Oxide Nanoparticles PICHON Benoit |

Tuesday May 26

V05 Autonomous and highthroughput synthesis and characterization

Chairperson(s): KOZIEJ Dorota

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- 08:30 863 Autonomous nanoparticle synthesis by design
ANKER Andy (Invited)
- 09:00 712 Small-Angle X-ray Scattering Platform for Automated Characterization of Nanomaterials Synthesis in the Liquid Phase
LEVENSTEIN Mark A.
- 09:15 3228 Optimization of magnetic nanoparticles: Coupling high-throughput robotic syntheses and X-ray scattering size measurements.
KRARUP Jens
- 09:30 2199 Sustainable Microwave-Assisted Synthesis of Prussian Blue Nanoparticles: A Machine Learning-Guided Design of Experiments for Tunable Morphology and Phase Control
ROMAIN Mélanie
- 09:45 2939 Mapping the Controlled Hydrothermal Synthesis of Materials with Principal Component Analysis
DUNNE Peter William

Tuesday May 26

V06 Microfluidics, Confined Environments and Solvo-/Hydrothermal synthesis

Chairperson(s): CARRIERE David

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- 10:30 3373 Marrying Microfluidics, Spectroscopy and Machine Learning for Materials Discovery
DEMELLO Andrew (Invited)
- 11:00 2342 Precision Synthesis of Ultrasmall Metal Oxide Nanoparticles via Continuous-Flow Hydrothermal Reactions
YOKO Akira
- 11:15 1977 Spatially resolved in situ x-ray absorption spectroscopy studies of ZnS nanoparticles synthesis at the water-toluene interface
CADDEO Francesco
- 11:30 1552 Confining the non-classical crystallization of YVO4 in inverse miniemulsion nanodroplets
MAZZARIOL Chiara
- 11:45 2464 Understanding of the synthesis of BaZrO3 nanoparticles for applications in superconductivity and first steps towards industrial scale-up
POP Cornelia

Tuesday May 26

V07 Nanocrystal Assembly & Collective Optical/Electronic Properties

Chairperson(s): CARRIERE David

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- 13:45 984 Electronic and photonic coupling in assembled quantum-dot supercrystals
SCHALL Peter (Invited)
- 14:15 2377 Symmetry trumps compactness in spindle packings
BOUKHRIS Sébastien
- 14:30 551 Supra-colloidal gold nanoparticle assembly mediated by hydrophilic triblock copolymers in water
MARTY Laura
- 14:45 2811 Plasmonic nanoresonators templated by Ouzo emulsions for optical magnetism
Gauffre Fabienne
- 15:00 1308 Soft Matter Strategies for Hybrid Nanoparticle Architectures in Aqueous Media: Assembly of PAA-b-PVP with Metal Ions and Gold Nanoparticles
CIUCULESCU-PRADINES Eliza-Diana
- 15:15 2713 Direct Laser Writing of Nanocomposites-combining pigmentary and structural colouration
BOCARANDO SALCIDO Estela
- 15:30 1780 Metal-Organic Framework Synthesis and Assembly: A Bottom-Up Route to ZIF-8 Mesocrystals
PRIMC Darinka

Tuesday May 26

V08 Precision Synthesis of Colloidal Nanocrystals

Chairperson(s): YOKO Akira

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- 16:30 824 Atomically precise synthesis of metal nanoparticle catalysis
TILLEY Richard (Invited)
- 17:30 3313 Dual and Triple emitting Quantum dot-quantum wire hybrid nanocrystalline heterostructures for WLED applications
DAS Palash Kusum
- 17:45 466 Dimethylammonium-incorporated mixed halide perovskite nanocrystals for stabilized red emission
KAR Shaoni
- 18:00 913 Controlled Synthesis of a New Class of Metal Oxide/Fluoride (MO₂/CaF₂) Core-Shell Nanocrystals
MENG Dejing
- 18:15 1408 Lead-free inorganic halide perovskite quantum dots for stable memristor devices via Al doping
CHO Hyo Min

Wednesday May 27

V09 Magnetic Nanoparticles: Synthesis, Assembly & Applications

Chairperson(s): KOZIEJ Dorota

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- 08:30 2750 Magnetic nanoparticles : chemical synthesis, controlled assembly and applications
LACROIX Lise-Marie (Invited)
- 09:00 2698 Engineering of iron oxide nanostructures by different polyol strategies for the capture of nano- and microplastics
VAZ-RAMOS Joana
- 09:15 1608 Controlled Surface Modification of γ -Fe₂O₃ Nanoparticles for the Fabrication of γ -Fe₂O₃@SnO₂ Core-Shell Nanocomposites
WON Ho Hyun
- 09:30 606 Magnetic Iron Oxide@SiO₂ Core-Shell Nanoparticles with Tunable Design for Chemical Mechanical Planarization
HAN Su Ah
- 09:45 1427 Designing Biocompatible Self-Assemblies of Prussian Blue Nanoparticles for Biomedical Applications
KENNEDY Merin

Wednesday May 27

V10 Porous & Functional Nanoparticle Architectures

Chairperson(s): KOZIEJ Dorota

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- 10:30 559 Synthesis and Assembly of Nanoparticles into Porous Architectures
NIEDERBERGER Markus (Invited)
- 11:00 898 Eco friendly Eu³⁺:YPO₄ colloidal nanophosphors stabilized by sodium alginate: insights into nanoparticle-polymer interactions for sustainable luminescent inks
MORTALÒ Cecilia
- 11:15 1808 Water-based synthesis of lanthanide-doped NaGdF₄ nanoparticles for use as versatile luminescent labels in cathodoluminescence mapping
VOSS Tobias
- 11:30 2999 Solution-Phase Ligand-Mediated Self-Assembly of Highly Luminescent Deep-Red InP Quantum Dot Nanoflowers without HF Etching or Thick Shell Growth
MAHATO Barnali
- 11:45 2992 Synthesis and Processing of Solution Processable Surface Modified Doped Tin Oxide Nanocrystals into Thin Films for Electro/Thermo-chromic Applications
CRIPWELL Eleonor

Wednesday May 27

VPO3 Poster session 3

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- 13:45 01_1204 Hierarchically structured nanoparticle-based aerogels through 3D printing
SCHMIDT Malte Maximilian
- 13:45 02_132 Beyond Morphology: Scanning Electron Microscopy as a Quantitative Tool for Particle Number Concentration
CHAUDHARY Anusha
- 13:45 04_1724 Investigation of Cation-site disorder on Cu based ternary metal nitride nanoparticles
REJI Aleena
- 13:45 05_1729 Ligand-Mediated Highly Ordered Aggregation of 5-Mercapto-2-Nitrobenzoic Acid Protected Atomically Precise Silver Nanocluster
ROY Soumyadip
- 13:45 06_1771 Solvent-Assisted Supracolloidal Assembly of a Luminescent Framework from Dihydrolipoic Acid-Protected Atomically Dispersed Copper Building Units
SAHOO Koustav
- 13:45 07_1970 Particle characterization through super-resolution spectral microscopy
BIBIANO SALAS Luis Angel
- 13:45 08_2538 Fabrication of transition metal oxide based nanoferrites by plasma activated electrolysis
TARASENKO Nikolai
- 13:45 09_2573 Correlating Aqueous Synthesis, Ligand Chemistry, and Atomic-Scale Structure in CuInS₂ Quantum Dots
EDVARSEN Albert Elias
- 13:45 10_2935 Deep Eutectic Solvent Mediated Synthesis of Cadmium Sulfide Quantum Dots
HOWARD Jessica
- 13:45 11_333 TRACER, a new algorithm to yield and optimise the structure of molecules, complexes and polynuclear clusters in solution
GRÖNE Tjark
- 13:45 12_413 Radiation-assisted synthesis of Ag nanostructures as SERS substrate for the detection of R6G dye
SAYSON Luce Vida
- 13:45 13_612 Solvothermal synthesis of phase pure 1T-TaS₂ nanostructures on substrates
ULMEN Philipp
- 13:45 14_654 Engineering Cs₂Na(Er/Yb)Cl₆ halide perovskite nanocrystals for synergistic X-ray scintillation and up-conversion applications
LEE Nohyun
- 13:45 15_770 Base-Catalysed Nanoparticle Network Formation in Silica Ionogels
SHEN Yutong
- 13:45 16_92 Defects Induced Down/Up-conversion Lanthanide Doped Luminescence in CaF₂ Nanophosphors for Dual-Mode Anticounterfeiting Applications
YENGGHOM Dhanapriya

Thursday May 28

V12 Nanoparticle Synthesis: Functional Materials & Special Cases

Chairperson(s): CARRIERE David

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| | | |
|-------|------|--|
| 08:30 | 3325 | Design and Characterization of Lanthanide-Doped Colloidal Nanoparticles with Controlled Structural Parameters SZCZESZAK Agata |
| 08:45 | 867 | Nanoparticle-Based Approaches for Organic Electrochemical Transistors YAMAMOTO Shunsuke |
| 09:00 | 1867 | Recovering of Nanosilica from Geothermal Fluids: controlled growth and multiscale characterisation for Sustainable Applications RUFFINI Andrea |
| 09:15 | 693 | Synthesis and Assembly of Mesoporous Nanoparticles into 3D Porous Aerogel Networks DERY Linoy |
| 09:30 | 1704 | From aggregation to stable nanodispersions: controlled formation of amorphous Magnesium Calcium Phosphate particles BRIGANTI Debora |
| 09:45 | 1610 | Optimized Synthesis of Mesoporous SiO ₂ @SiO ₂ Core-Shell Nanoparticles: Balancing Porosity and Dispersion Stability via CTAB and TEOS Tuning KYUNG Sehyun |

Thursday May 28

V13 Soft Matter and Nanoparticles

Chairperson(s): ERSEN Ovidiu

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| | | |
|-------|------|--|
| 10:30 | 2323 | Paradigm Shift in Drug Delivery: A Reservoir-to-Carrier Lipid Platform Integrating Secure Storage and Triggered Release JONGEON Park |
| 10:45 | 2105 | Spontaneous Band-like Pattern Formation Driven by Phase Separation on Small Lipid Vesicles KIM Gayoung |
| 11:00 | 1390 | Pre-Mixed Assembly Enables Structural Stabilization of Cubic-Phase Lipid Nanoparticles for Advanced Nucleic Acid Delivery JIN Harin |
| 11:15 | 2390 | Coupled Interfacial and Geometric Effects in Sessile Droplet Evaporation and Solute Deposition BHANDARU Nandini |
| 11:30 | 3086 | In-situ Plasmonic Sensing of Surfactant Structures BERGER Esmée |