



European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

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SYMPOSIUM 0

Polaritonics for next generation materials

Oral sessions : HILTON - ORANGERIE D - GROUND FLOOR

Poster sessions : ETOILE - FIRST FLOOR

Symposium Organizers:

Anoop THOMAS (Main organizer), Department of Inorganic and Physical Chemistry, Indian Institute of Science, India

Henrik KOCH, Department of Chemistry, Norwegian University of Science and Technology (NTNU), Norway

Tal SCHWARTZ, Department of Physical Chemistry, Tel Aviv University, Israel

Timur O. SHEGAI, Department of Physics, Chalmers University of Technology, Sweden

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Monday May 25

001 Spectroscopy and Photophysics of Polaritonic Systems I

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- 08:30 2615 Collective states in two- and one-dimensional molecular lattices for tunable polaritons
REICH Stephanie (Invited)
- 09:00 512 Effect of light-matter coupling strength on OLED performance
SILTANEN Olli
- 09:15 729 Quantifying the Number of Dark, Gray, and Bright States as a Function of Spectral Overlap in Polaritonic Systems
BÖRJESSON Karl
- 09:30 423 Nonlinear spectroscopy of molecular polaritons
GALPERIN Michael
- 09:45 2025 Momentum-resolved polariton relaxation dynamics in Fabry-Perot cavities
TIEDE David

Monday May 25

002 Reactions in Optical Cavities I

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- 10:30 1004 Structure-Induced Electrocatalysis at Cavity Nanostructured Electrodes
MURAKOSHI Kei (Invited)
- 11:00 3036 Exploring Chemical Reaction Types in Optical Cavities
HOFFSTADT Jillian
- 11:15 2716 Chemical Equilibrium Under Vibrational Strong Coupling: Harmonic and Anharmonic Molecules
CASTAGNOLA Matteo
- 11:45 1475 Controlling Photochemical Reactions Using Plasmonic Strong-Coupling Reaction Fields
UENO Kosei

Monday May 25

003 Collective Phenomena in Cavity-Embedded Materials I

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- 14:30 1058 Hyperbolic cavities and cavity-altered superconductivity
BASOV Dmitri (Invited)
- 15:00 1016 Cavity QED Control of Quantum Hall Phases
KOSKAS E.
- 15:15 645 Long coherence lifetime of phonon polaritons in enriched cubic boron arsenide
ZHU Hanyu
- 15:30 3097 New Dimensions of Light and Matter: Interfacing Magnetism with Layered Polaritonic Materials
STERN Nathaniel (Invited)

Monday May 25

004 Spectroscopy and Photophysics of Polaritonic Systems II

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- 16:30 2183 Chiral Plasmonic Spin-Orbit Modes as a Route to Valley-Selective Exciton-Plasmon Strong Coupling in Atomically Thin Semiconductors
CHOWDHURY Tamaghna
- 16:45 2770 Nonlinear semiclassical spectroscopy of ultrafast molecular polariton dynamics
REITZ Michael
- 17:00 1612 Dark-strong coupling regime in a 2D material coupled to an open optical cavity
Johns Ben
- 17:15 1106 Impact of electronic strong coupling on photoinduced electron transfer
BALIYAN Harsh

Tuesday May 26

005 Novel Geometries and Materials for Strong Coupling I

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- 08:30 2324 Chiral Fabry-Perot cavities for chiral polaritonics
PAULY Matthias (Invited)
- 09:15 1080 Harnessing higher-order photon modes for enhanced emission in strongly coupled organic microcavities
LAKHWANI Girish
- 09:30 516 Giant Rabi Splitting and Polariton Photoluminescence in an all Solution-Deposited Dielectric Microcavity
QURESHI Hassan
- 09:45 2884 Ultrafast Triggering of Strong Coupling in a Semiconductor Terahertz Fabry-Pérot Cavity
FLEISCHER Sharly

Tuesday May 26

006 Advanced Modelling of Confined Light-Matter Interactions

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- 10:30 3430 Cavity control in realistic nanophotonic resonators
LINDEL Frieder (Invited)
- 11:00 535 Microscopic quantum description of surface plasmon polaritons: revealing intrinsic ultrastrong light-matter coupling
MAURER Florian
- 11:15 895 Polaritonic Bloch's Theorem beyond Long-Wavelength Approximation
BRUNO Giovanna
- 11:30 3359 Non-equilibrium cavity pumping effects for electronic molecular polaritons
EL MOUTAOUKAL Yassir
- 11:45 3280 Cavity-Material Engineering with Realistic Photonic Environments
ERIKSEN Mikkel Have

Tuesday May 26
007 Cavity-Enhanced Transport

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- 13:45 1745 Tracking highly confined polaritons beyond the material light line for next-generation polaritonics
DELOR Milan (Invited)
- 14:15 1332 Quantum Dynamics of Polariton Transport in Disordered Media
KRUPP Niclas
- 14:30 1299 Unlocking highly tunable energy transfer with strong light-matter coupling
LOMLU Rana
- 14:45 440 Delocalization, transport and annihilation of exciton-polaritons in molecular structures with weak and strong intermolecular coupling
SOKOLOVSKII Ilia
- 15:00 1180 Quantum Coherence of Cavity Polaritons
CAO Jianshu (Invited)
- 15:30 1088 Electrical Conductivity in Polymers and Across Spatially Separated Conductors under Vibrational Strong Coupling
SUBRAMONY Kavya

Tuesday May 26
008 Novel Geometries and Materials for Strong Coupling II

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- 16:30 2541 Generating Chiral Polaritons from Plasmonic Lattice Cavities
ODOM Teri (Invited)
- 17:00 646 Chiral Phonon-Polariton Terahertz Concentrators
ZHU Hanyu
- 17:15 1359 Cavity-Mediated Long-Range Cooperative Coupling between Localized Plasmons and Molecular Excitons
PAUL Livin
- 17:30 3143 Electrical Tuning of Polariton-like Emission in WS₂ Monolayer Open Cavities
MISHRA Neeraj Kumar

Wednesday May 27
009 Collective Phenomena in Cavity-Embedded Materials II

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- 08:30 2882 Dicke Phenomena in Quantum Materials
KONO Junichiro (Invited)
- 09:00 345 Rayleigh Scattering Signatures of a Glassy Phase Transition under Vibrational Strong Coupling
SIDLER Dominik
- 09:15 3324 High-Q microresonators unveil quantum rare events
RAGHAVAN CHITRA Sricharan
- 09:30 823 Strong Light-Matter Coupling and Polariton Condensation in Metasurfaces and Open Cavities
GOMEZ RIVAS Jaime (Invited)

Wednesday May 27
010 Reactions in Optical Cavities II

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- 10:30 591 Consequences of vibrational strong coupling on supramolecular polymerization
JOSEPH Kripa (Invited)
- 11:00 2489 Tuning Strong Light-Matter Coupling with Spin-Crossover Molecules: Reversible Control and Ground-State Energy Probing in Optical Cavities
RIDIER Karl
- 11:15 1939 Quantifying Chemical Reactivity under Vibrational Strong Coupling
BASCIL Sinan

Wednesday May 27
OPO3 Poster session 3

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- 13:45 01_1045 Strain and Defect Engineering of 2D In₂O₃ monolayer for Tunable Electronic and Magnetic Properties
DHONGADE Suraj Ghanshyam
- 13:45 02_1060 Deep-learning-assisted defect localization and super-resolution in polaritonic near-field imaging of vdW materials
PATHIRANAGE Shalitha
- 13:45 03_1101 Electrical Conductivity in Polymers and Across Spatially Separated Conductors under Vibrational Strong Coupling
SUBRAMONY Kavya
- 13:45 04_1104 Impact of electronic strong coupling on photoinduced electron transfer
BALIYAN Harsh
- 13:45 05_1129 Bottom-up Fabry-Pérot Chiral Cavities
HERRY Jeanne
- 13:45 06_1168 Photo-acidity Under Vibrational Strong Coupling (VSC)
MAHATO Malay Krishna
- 13:45 07_1402 Imine Synthesis Under Vibrational Strong Coupling
YADAV Adwitiya
- 13:45 08_1428 Light-Matter Hybrid States from Open Optical Cavities
YADAV Nitin
- 13:45 09_1618 Can the Upper Polariton act as a Door State for Enhanced Photoreactivity?
WALLNER Lisamaria
- 13:45 10_1687 Altering Glass Transition in Polymer Films through Vibrational Strong Coupling
DANG Mitali
- 13:45 11_217 Negative Permittivity and Absorption-Based EMI Shielding in Sr-Doped LaFeO₃ at Elevated Temperatures
BARANWAL Rajni
- 13:45 12_1790 Host-Guest Interactions Under Vibrational Strong Coupling
CLAYTON Tara

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| 13:45 | 13_1861 | Imine Synthesis Under Vibrational Strong Coupling YADAV Adwitiya |
| 13:45 | 14_1913 | Exceptionally High Nonlinear Optical Response in Two-dimensional Type II Dirac Semimetal Nickel di-Telluride (NiTe ₂) GOSWAMI Saswata |
| 13:45 | 15_1984 | Multi-mode exciton-polariton condensation in dielectric metasurfaces CUSSIOL Francesca |
| 13:45 | 16_2001 | Precise Electrochemical Measurements on Electron Transfer Rate of Cavity-Nanostructured Electrodes TORII Sennosuke |
| 13:45 | 17_2256 | Vacuum-Dressed Transport Properties of a Quantum Well Coupled to a Cavity Field SECK Théophile |
| 13:45 | 18_2347 | Plasmonic Metamaterial cavity engineered STO thin film Halder Abhishek |
| 13:45 | 19_2350 | A New Design for a Highly Tunable Optical Cavity GODSI May |
| 13:45 | 20_2516 | Quantum Objectives, Classical Optimization: Inverse Design via Macroscopic QED MANNSTADT Jakob |
| 13:45 | 21_2544 | Exploring the Quantum Features of HHG DE LA PEÑA RUIZ Sebastián |
| 13:45 | 22_2564 | Energy Transfer in Fabry-Perot Microcavities with a Strongly Coupled Donor Vidishcheva Alona |
| 13:45 | 23_2627 | Exploring effects of strong coupling in electrochemical processes CLEETUS Annie |
| 13:45 | 24_2677 | Plasmonic Metasurfaces for Chiral Light-Matter Interactions YADAV Sumit |
| 13:45 | 25_2969 | Polaritons in Non-Fullerene Acceptors for High Responsivity Angle-Independent Organic Narrowband Infrared Photodiodes QURESHI Hassan |
| 13:45 | 26_3099 | Engineering ultra-strong electron-phonon coupling and nonclassical electron transport in crystalline gold with nanoscale interfaces MAJI Tuhin Kumar |
| 13:45 | 27_3151 | Ultrafast Optical Control of Terahertz Phonon-Polaritonics from Weak to Strong Coupling Regime HALDER Abhishek |
| 13:45 | 28_3182 | Polaron-Injection-Driven Chromism in Transition Metal Oxides within the Green's Function Formalism VARZARI Alexandru |
| 13:45 | 29_3322 | High-Q microresonators unveil quantum rare events RAGHAVAN CHITRA Sricharan |
| 13:45 | 30_3331 | Constructing Gauge-Invariant Truncated Models for Cavity QED OBZHIROV Anatoly |
| 13:45 | 31_3335 | Constructing Gauge-Invariant Truncated Models for Cavity QED OBZHIROV Anatoly |
| 13:45 | 32_3343 | Exploring Chemical Reaction Types in Optical Cavities HOFFSTADT Jillian |

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| 13:45 | 33_335 | Influence of Vibrational Strong Coupling on Product Selectivity in Post-Transition State Bifurcation Reactions KUMAR Atul |
| 13:45 | 34_1010 | Cavity-induced Rayleigh scattering enhancement in molecules GRECO Francesco |
| 13:45 | 35_436 | On the Role of Quantum Tunneling in Vibrational Strong Coupling Chemistry ROQUE José |
| 13:45 | 36_558 | Cavity-altered superconductivity KEREN Itai |
| 13:45 | 37_732 | Investigating Bulk Material Physical Properties under Vibrational Strong Coupling SHALABNEY Atef |
| 13:45 | 38_884 | Modified polarizability under collective coupling? Only non-perturbatively. HORAK Jacob |
| 13:45 | 39_963 | Electromagnetic and Chemical mechanism Dual-Enhancement SERS Substrate Based on Au Metasurface/WTe ₂ Nanosheet for Ultrasensitive, Electrically Modulated Selective Detection LI Chong-He |
| 13:45 | 40_3426 | Theoretical Investigation of Chiral Polaritons in Plasmonic Nanocavities DEI ROSSI Lorenzo |

Thursday May 28

013 Spectroscopy and Photophysics of Polaritonic Systems III

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| 10:30 | 1167 | Vibrationally Mediated Coherent Energy Exchange in Disordered Plexcitonic Manifolds COLLINI Elisabetta (Invited) |
| 11:00 | 175 | Bridging Molecular Properties to the Polaritonic Response of J-Aggregate Films BARREIRO Marcelo |
| 11:15 | 1859 | On the plausible role of optical dark states in nanoscale plexciton-enhanced photocatalysis CHANDRA Manabendra |
| 11:30 | 398 | Rabi-driven vibrational excitation in molecular polaritons BUSTAMANTE Carlos |
| 11:45 | 994 | Exploring the impact of strong coupling on exciton annihilation SUN Maxwell |

Thursday May 28

014 Material Manifestations of Vibrational Strong Coupling

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|-------|------|--|
| 13:45 | 1468 | Thermodynamics of coupled light-matter systems: From first principles to spin glasses RUGGENTHALER Michael (Invited) |
| 14:15 | 1042 | Rayleigh Scattering as a Probe of Vibrational Strong Coupling SWAMINATHAN Swathi |
| 14:30 | 872 | Spontaneous Raman Scattering under Vibrational Strong Coupling Dherbécourt Maxime |
| 14:45 | 2047 | Reconstruction of the Hydrogen-Bond Network of Water in Vibrational Strong Coupling States within a Mode-Tunable Cavity ITATANI Masaki |
| 15:00 | 21 | Vibrational Strong Coupling in Cavity QED forms a Macroscopic Quantum State HUO Pengfeu (Invited) |
| 15:30 | 2063 | Investigation of Vibrational Strong Coupling between Water and Two-Dimensional Photonic Crystals OKAYAMA Ryogo |
| 15:45 | 2566 | Collective Effects in Strong Light-Matter Coupling: from Dark Polaritons to Collective Polarizabilities KOWALEWSKI Markus |

Thursday May 28

015 Reactions in Optical Cavities III

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|-------|------|---|
| 16:30 | 2101 | Models for reactivity under vibrational strong coupling: Tuning product selectivity and mechanism KESHAVAMURTHY Srihari (Invited) |
| 17:00 | 594 | A Phenomenological Symmetry Rule for Chemical Reactivity under VSC JAYACHANDRAN Anjali |
| 17:15 | 811 | Photochemistry in plasmonic cavities: from perturbative to strong-coupling regime MELLINI Federico |
| 17:30 | 1002 | Vibrational Strong Coupling: A Platform for Tailoring Material Properties NAGARAJAN Kalaivanan |
| 17:45 | 1697 | Mode Selective retro-Diels-Alder reaction under Vibrational Strong Coupling KOTHAPALLI Gnana Maheswar |