Elettra Sincrotrone Trieste

FEMTO16

The 16th Femtochemistry Conference

Programme

Trieste | Italy | 22-27 June 2025

Sunday – June 22, 2025

16:00 – 19:00	Registration
18:00 – 19.30	Welcome Reception

Monday – June 23, 2025

08:30 – 09:00	**Conference Opening** **A. Franciosi**, President and CEO at Elettra Sinctrotrone Trieste **C. Masciovecchio**, Manager for the time resolved experimental techniques at Elettra Sincrotrone Trieste **M. Chergui**, Project leader at Elettra Sinctrotrone Trieste

Session 1: Attosecond Science I | Chair: Claudio Masciovecchio

09:00 – 09:30	MO-I01	**Linda Young –** Femtosecond and attosecond studies of ionization in aqueous systems
09:30 – 10:00	MO-I02	**Minhaeng Cho –** Asynchronous and Interferometric Nonlinear Spectroscopy (AI-NS)
10:00 – 10:20	MO-C01	**Carlo Callegari –** Nonlinear science with multi-harmonic FEL at sub-femtosecond resolution
10:20 – 10:50	**Coffee break**	

Session 2: Gas Phase Dynamics

10:50 – 11:00	MO-INT1	**Luis Bañares** (Chair)
11:00 – 11:30	MO-I03	**Erik Nibbering** – Ultrafast Photoacid-Base Reactions in Aqueous Solution
11:30 – 11:50	MO-C02	**Hans-Jakob Wörner** – Attosecond-resolved probing of recolliding electron wave packets in liquids and aqueous solutions
11:50 – 12:10	MO-C03	**Michael Schuurman** – The Excited State Dynamics of Ethylene: A new theoretical model
12:10 – 12:30	MO-C04	**Marcos Dantus** – Identifying Key Factors in Open-Loop Control of Molecular Fragmentation with Shaped Strong Fields
12:30 – 14:00	**Lunch break**	

Session 3: Solvation and reaction dynamics I

14:00 – 14:10	MO-INT2	**Majed Chergui** (Chair)
14:10 – 14:40	MO-I04	**Martina Havenith** – Caught in the act: Optical pump THz probe allows real-time observation of the solvent response subsequent to photoexcitation
14:40 – 15:00	MO-C05	**Toshinori Suzuki** – Electronic Dynamics of Aqueous Nucleobases Studied by Ultrafast EUV Photoemission and IR Absorption Spectroscopy
15:00 – 15:20	MO-C06	**Benjamin Fingerhut** – Distinguishing cavity and non-cavity solvation structures of the hydrated electron
15:20 – 15:40	MO-C07	**Nicolas Velasquez** – Ultrafast electron delocalization in aqueous L-cysteine
15:40 – 16:10	**Coffee break**	

Session 4: Theory | Chair: Benjamin Fingerhut

16:10 – 16:40	MO-I05	**Yoshitaka Tanimura** – Simulating, Modeling, and Analyzing Multidimensional Vibrational Spectroscopies of Water
16:40 – 17:00	MO-C08	**David Picconi** – Simulating the ultrafast dynamics of multi-mode multi-state molecular systems coupled to a dissipative environment
17:00 – 17:20	MO-C09	**Raffaele Borrelli** – Nonlinear Femtosecond Signals at Finite Temperature including Static Disorder via a Thermo Field Dynamics-Tensor Train Method
17:20 – 17:40	MO-C10	**Luis Bañares** – The Importance of Being a Conical Intersection in Ultrafast Photochemistry
17:40 – 18:00	MO-C11	**Jonathan Mannouch** – A Mapping Approach to Surface Hopping
18:00 – 18:05	MO-S01	**NEXT, Wojciech Gawelda**
18:05 – 19:35	**Poster Session 1**	

Tuesday – June 24, 2025

Session 5: Chirality I

9:00–9:10	TU-INT1	**Carlo Callegari (Chair)**
09:10 – 09:40	TU-I01	**Thomas Baumert –** Laser-based sensing and driving of molecular chirality
09:40 – 10:00	TU-C01	**Davide Faccialà** – Exciting and probing attosecond multielectron dynamics in chiral molecules at FERMI
10:00 – 10:20	TU-C02	**Elena Aethra Christou** – Ultra-fast nonlinear optical response of chiral molecules with a focus on conformer sensitivity
10:20 – 10:40	TU-C03	**Livia Müller** – Light emission with a twist: Ultrafast evolution of chiral excited states determines the circularly-polarized luminescence of a chiral OLED complex
10:40 – 10:45	TU-S01	**Light Conversion, Stefan Piontek**
10:45 – 11:15	**Coffee break**	

Session 6: Chirality II | Chair: Oksana Plekan

11:15 – 11:45	TU-I02	**Giulio Cerullo** – Ultrafast chiro-optical spectroscopy
11:45 – 12:05	TU-C04	**Emanuele Coccia** – Modeling plasmonic effects in photoinduced molecular processes
12:05 – 12:25	TU-C05	**Friedrich Temps** – Ultrafast photodynamics and detection of the elusive twist-wagged intramolecular charge transfer (TWICT) state of N6,N6-dimethyladenine (DMAde) by transient vibrational absorption spectroscopy
12:25 – 12:45	TU-C06	**Lauren Bertram** – Excited state dynamics of azanaphthalenes
12:45 – 14:15	**Lunch break / IAB meeting**	

Session 7: Biosystems I

14:15 – 14:25	TU-INT2	**Howe-Siang Tan (Chair)**
14:25 – 14:55	TU-I03	**Jennifer Ogilvie –** Multidimensional Snapshots of Photosynthesis in Action
14:55 – 15:15	TU-C07	**Thomas Jansen** – A Coarse-Grained Simulation Approach for Two-Dimensional Electronic Spectroscopy: Dynamics in Photosynthetic Light-Harvesting Systems
15:15 – 15:35	TU-C08	**Mattia Russo** – Two-dimensional electronic spectroscopy reveals ultrafast Energy Transfer processes in a low-Energy Chlorophylls-free organism: Posidonia Oceanica
15:35 – 15:55	TU-C09	**Tönu Pullerits** – Microcavity mediated excitation dynamics of photosynthetic light harvesting complexes.
15:55 – 16:25	**Coffee break**	

Session 8: Biosystems II | Chair: Andrea Cannizzo

16:25 – 16:55	TU-I04	**Steve Meech** Mechanism in Reversibly Switchable Fluorescent Proteins
16:55 – 17:15	TU-C10	**John Kennis** – Multi-step 11-cis to all-trans retinal photoisomerization in bestrhodopsin, an unusual microbial rhodopsin
17:15 – 17:35	TU-C11	**Marten Vos** – Novel femtosecond photoreactions in flavo-enzymes
17:35 – 17:55	TU-C12	**Dongping Zhong** – Optical coherent control of biological electron transfer
17:55 – 18:15	TU-C13	**Donatas Zigmantas** – Excitation dynamics in DNA-templated silver nanoclusters
18:15 – 19:45	**Poster Session 2**	

Wednesday – June 25, 2025

Session 9: Solvation and reaction dynamics II

09:00 – 09:10	WE-INT1	**Stefan Haacke (Chair)**
9:10 – 09:40	WE-I01	**Andrew Orr-Ewing** – Ultrafast Wolff rearrangement and solvent reactions of UV-photoexcited diazocarbonyl compounds
9:40 – 10:00	WE-C01	**Alexander Tarnovsky** – Elucidating the Interplay between Ultrafast Internal Conversion, Intersystem Crossing, and Proton Transfer for Guiding New Photochemical Reactivities
10:00 – 10:20	WE-C02	**Oleg Kornilov** – Electronic structure and excited state reactions of molecules in aqueous solutions studied by time-resolved XUV photoelectron spectroscopy
10:20 – 10:40	WE-C03	**Jan Helbing** – Pseudo-rotation versus rotational diffusion in the ligand exchange 2D-IR spectra of iron pentacarbonyl
10:40 – 11:10	**Coffee break**	

Session 10: Attosecond Science II | Chair: Hans-Jakob Wörner

11:10 – 11:40	WE-I02	**Fernando Martin** – New directions in Attosecond Chemistry
11:40 – 12:00	WE-C04	**Erik Månsson** – Ultrafast dissociation dynamics of alkyl iodides induced by few-fs UV pulses
12:00 – 12:20	WE-C05	**Stefano Severino** – Attosecond-resolved Ultrafast Electronic and Nuclear Wavepacket Dynamics in Furan at the C K-edge
12:20 – 12:40	WE-C06	**Marco Ruberti** – Attosecond Coherent Electron Dynamics Triggered by XFEL Pulses
12:40 – 12:50	**Group foto**	
12:50 – 14.30	**Lunch break**	
14:30 – 18:00	**Visit to Elettra Sincrotrone Trieste**	
15:00 – 18:00	**City tour**	
19:30 – 22:30	**Conference Dinner**	

Thursday – June 26, 2025

Session 11: Structural Dynamics I

9:00 – 9:10	TH-INT1	**Claudio Masciovecchio (Chair)**
09:10 – 09:40	TH-I01	**Stephen Leone** – X-ray probing of photochemical dynamics
09:40 – 10:00	TH-C01	**Hao Wang** – Exploring the photocycle of the [Fe(BPAbipyH)]2+ CO2 reduction catalyst using ultrafast X-ray techniques
10:00 – 10:20	TH-C02	**Amke Nimmrich** – Coupled nuclear and electronic dynamics during proton transfer observed with combined experimental and computational resonant inelastic x-ray scattering
10:20 – 10:40	TH-C03	**Rebeca Gomez Castillo** – Resolving Mechanistic Pathways in Bioinorganic Catalysis via Ultrafast X-ray Spectroscopy
10:40 – 11:10	**Coffee break**	

Session 12: Structural Dynamics II | Chair: Wojciech Gawelda

11:10 – 11:40	TH-I02	**Martin Beye** – Towards femtochemistry X-ray studies of catalysis on surfaces under operando
11:40 – 12:00	TH-C04	**Bradley Siwick** – Phonon Transport and Polaron Formation with Mode, Momentum and Time Resolution using Ultrafast Electron Diffuse Scattering (UEDS)
12:00 – 12:20	TH-C05	**Jasper Van Thor** – Applications of optical crystallography to ultrafast X-ray crystallography for structural dynamics
12:20 – 12:40	TH-C06	**Ruslan Kurta** – Probing Ultrafast Photoinduced Structural Dynamics in Molecular Solutions using Angular X-ray Cross-Correlation Analysis
12:40 – 14:10	**Lunch break**	

Session 13: Materials I | Chair: Emiliano Principi

14:10 – 14:40	TH-I03	**Elisabetta Collini** – Ultrafast dynamics of colloidal plexcitonic nanohybrids studied by 2D electronic spectroscopy
14:40 – 15:00	TH-C07	**Lijie Wang** – Probing Surface and Interface Carrier Dynamics via Ultrafast Scanning Electron Microscopy
15:00 – 15:20	TH-C08	**Thomas Rossi** – Dynamic control of electron correlations in photodoped charge-transfer insulators
15:20 – 15:40	TH-C09	**Jérémie Leonard** – Excitation Energy Transfer and Diffusion in Synthetic Light-Harvesting Nanoparticles
15:40 – 16:10	**Coffee break**	

Session 14: Structural Dynamics III | Chair: Alexander Tarnovsky

16:10 – 16.40	TH-I04	**Markus Gühr –** The combined electronic and nuclear structure molecular movie for a conical intersection
16:40 – 17:00	TH-C10	**Jochen Küpper** – Chemical dynamics of microsolvated (bio) molecules
17:00 – 17:20	TH-C11	**Mario Taddei** – Unveiling the wavelength dependent ultrafast relaxation of solvated thymidine with extreme ultraviolet time-resolved photoelectron spectroscopy and simulations
17:20 – 17:40	TH-C12	**Asmus Ougaard Dohn** – Solvation Shells and Simulation Cells: Advances in modeling X-ray Solution Scattering for Time-Resolved Studies
17:40 – 18:00	TH-C13	**Wojciech Gawelda** – Electron transfer-induced misfolding of prion proteins studied by ultrafast X-ray absorption
18:00 – 19:30	**Poster Session 3**	

Friday – June 27, 2025

Session 15: Materials II | Chair: Bradley Siwick

09:00 – 09:30	FR-I01	**Jenny Clark** – Singlet fission contributes to solar energy harvesting in photosynthesis
09:30 – 09:50	FR-C01	**Abderrazzak Douhal** – Deciphering the ultrafast photobehavior of benzothiadiazole-based HOFs and its molecular units: experimental and theoretical insights into their spectroscopic properties in solution and in the solid state
09:50 – 10:10	FR-C02	**Kasra Amini** – RF-compressed, THz-streaked ultrafast electron diffraction at high repetition rates with direct detection
10:10 – 10:30	FR-C03	**Giulia Giubertoni** – Linear and Ultrafast Optical Diffusion-Ordered SpectroscopY sheds new light on nanoparticles, amyloids, and mixed solutions
10:30 – 11:00	**Coffee break**	

Session 16: Materials III | Chair: Martin Beye

11:00 – 11:30	FR-I02	**Matteo Lucchini** – Field-driven virtual charge dynamics in dielectrics
11:30 – 12:00	FR-I03	**Mohammed Hassan** – Ultrafast Quantum Optics for Femtochemistry and Biological Applications
12:00 – 12:20	FR-C04	**Oliviero Cannelli** – Resonantly enhanced X-ray impulsive vibrational spectroscopy in trigonal tellurium
12:20 – 12:30	**Closing remarks**	