

" Multiscale Irradiation and Chemistry Driven Processes and Related Technologies "

MultiChem 2023

Vila Lanna Prague, Czech Republic
April 26-28, 2023

Wednesday, April 26

10 ⁰⁰ – 14 ⁰⁰	Participants registration
12 ³⁰ – 14 ⁰⁰	Lunch
14 ⁰⁰ – 14 ¹⁰	MultiChem 2023 Opening
	<u>Afternoon session I: Irradiation-driven transformations of molecular systems</u> (Chair: Alexey Verkhovtsev)
14 ¹⁰ – 14 ⁴⁰	Andrey Solov'yov , MBN Research Center, Frankfurt am Main, Germany <i>The fifth release of MBN Explorer and MBN Studio: advances and challenges in multiscale computational modeling</i>
14 ⁴⁰ – 15 ¹⁰	Nigel Mason , University of Kent, Canterbury, United Kingdom <i>Solid state chemistry in astronomy – A new age</i>
15 ¹⁰ – 15 ⁴⁰	Brendan Dromey , Queen's University Belfast, United Kingdom <i>Narrow energy spread proton beams from a laser driven accelerator for high precision spatiotemporal measurements of ion damage in matter</i>
15 ⁴⁰ – 16 ⁰⁰	Coffee break
	<u>Afternoon session II: Electron interactions with nano- and biomolecular systems</u> (Chair: David Field)
16 ⁰⁰ – 16 ³⁰	Miloš Hrabovský , TESCAN, Czech Republic <i>Automation of FIB-SEM process and open-access control of nanopatterning</i>
16 ³⁰ – 17 ⁰⁰	Stefan Denifl , Institute for Ion Physics & Applied Physics, University of Innsbruck, Austria <i>Exploring reaction pathways of electron induced DNA damage</i>
17 ⁰⁰ – 17 ²⁰	Felipe Ferreira da Silva , Universidade NOVA de Lisboa, Caparica, Portugal <i>Electron interactions with astrochemical relevant molecules</i>
17 ²⁰ – 17 ⁴⁰	Mateusz Zawadzki , Gdansk University of Technology, Gdansk, Poland <i>Experimental studies on electron collisions with fundamental molecular targets</i>
17 ⁴⁰ – 19 ³⁰	Roadmap discussion (ca. 20-25 min) Poster session

Thursday, April 27

	<u>Morning session I: Ion interactions with biomolecular systems</u> (Chair: Hidetsugu Tsuchida)
09 ⁰⁰ – 09 ³⁰	Thomas Schlathölter , Zernike Institute for Advanced Materials, University of Groningen, the Netherlands <i>Heavy ion collisions with gas-phase DNA</i>
09 ³⁰ – 10 ⁰⁰	Alicja Domaracka , Centre de Recherche sur les Ions, les Matériaux et la Photonique, Normandie Université, Caen, France <i>Ions interacting with complex molecular systems: the effect of a surrounding environment</i>
09 ⁰⁰ – 10 ³⁰	Gérard Baldacchino , Université Paris-Saclay, France <i>What chemistry in the Bragg peak of protons and carbon ions?</i>
10 ³⁰ – 11 ⁰⁰	Coffee break
	<u>Morning session II: Irradiation-driven transformations of nano- and biomolecular systems</u> (Chair: Malgorzata Smialek-Telega)
11 ⁰⁰ – 11 ³⁰	Paola Bolognesi , CNR-Istituto di Struttura Della Materia, Monterotondo, Italy <i>Photoionisation studies of dipeptides</i>
11 ³⁰ – 12 ⁰⁰	Aleksandar Milosavljević , Synchrotron SOLEIL, Gif-Sur-Yvette, France <i>Near-edge x-ray absorption fine structure (NEXAFS) spectroscopy of protonated adenosine triphosphate molecule</i>
12 ⁰⁰ – 12 ³⁰	Alexey Verkhovtsev , MBN Research Center, Frankfurt am Main, Germany <i>Quantum mechanical inputs for irradiation-driven molecular dynamics</i>
12 ³⁰ – 14 ⁰⁰	Lunch
	<u>Afternoon session I: Irradiation-driven chemistry in nanofabrication processes</u> (Chair: Matija Zlatar)
14 ⁰⁰ – 14 ³⁰	Ilia Solov'yov , Institute of Physics, Carl von Ossietzky University Oldenburg, Germany <i>Stochastic dynamics simulation of the focused electron beam induced deposition process</i>
14 ³⁰ – 15 ⁰⁰	Petra Swiderek , Institute of Applied and Physical Chemistry, University of Bremen, Germany <i>Electron-driven chemistry of NH₃: New insights from molecular synthesis and fundamental processes of nanofabrication</i>
14 ⁰⁰ – 15 ³⁰	Anne Lafosse , Institute of Molecular Sciences of Orsay, Université Paris-Saclay, France <i>Quantifying non-thermal desorption from molecular ices - Comparative study of photon and electron irradiation in the valence- and core-shell energy ranges</i>
15 ³⁰ – 16 ⁰⁰	Coffee break
	<u>Afternoon session II: Nanofabrication with focused particle beams</u> (Chair: Felipe Fantuzzi)
16 ⁰⁰ – 16 ³⁰	Jose Maria De Teresa , University of Zaragoza, Spain <i>Metallic structures grown by focused ion beam decomposition of condensed precursor layers and of metallorganic films</i>
16 ³⁰ – 17 ⁰⁰	Lukas Seewald , Institute of Electron Microscopy and Nanoanalysis, Graz University of Technology, Austria <i>Recent progress in functional nanofabrication via 3D Nanoprinting</i>
17 ⁰⁰ – 17 ³⁰	Lisa McElwee-White , University of Florida, USA <i>(η^3-allyl)Ru(CO)₃X Precursors: From FEBID to photoassisted area selective deposition</i>

19 ³⁰ – 22 ⁰⁰	Conference dinner
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Friday, April 28

	<u>Morning session I: Biomedical and technological applications of radiation</u> (Chair: Michael Hausmann)
09 ⁰⁰ – 09 ³⁰	Andrew Nisbet , Department of Medical Physics & Biomedical Engineering, University College London, United Kingdom <i>Current challenges and future developments in photon beam treatment planning</i>
09 ³⁰ – 10 ⁰⁰	Richard Amos , Translational Proton Therapy Physics, University College London, United Kingdom <i>Planning and delivery of ion beam cancer therapy: Limitations of contemporary clinical practice</i>
10 ⁰⁰ – 10 ³⁰	Revaz Shandize , Kutaisi International University, Georgia <i>New hadron therapy center in Kutaisi, Georgia</i>
10 ³⁰ – 11 ⁰⁰	Alexander Gerbershagen , The University Medical Center Groningen (UMCG), Groningen, the Netherlands <i>UMCG - from radiobiology to treatment planning</i>
11 ⁰⁰ – 11 ²⁰	Coffee break
	<u>Morning session II: Mechanisms of nanoparticle radiosensitization</u> (Chair: Marc Benjamin Hahn)
11 ²⁰ – 11 ⁵⁰	Martin Falk , Institute of Biophysics, Czech Academy of Sciences, Brno, Czech Republic <i>Is there a simple explanation for metal nanoparticle-mediated cell radiosensitization?</i>
11 ⁵⁰ – 12 ²⁰	Olivier Tillement , NH TherAguix, France <i>Chelating bio-polymer for metal extraction: from concept to clinic</i>
12 ²⁰ – 12 ⁴⁵	Cécile Sicard-Roselli , University Paris Saclay, France <i>Do we always want nanoparticles to enhance radical production?</i>
12 ⁴⁵ – 13 ⁰⁰	Yasmine Sebti , University of Sorbonne, Paris, France <i>Hafnium oxide nanoparticles as computed tomography contrast agent</i>
13 ⁰⁰ – 14 ⁰⁰	Lunch
	<u>Afternoon session I: Radiation-induced chemistry</u> (Chair: Juraj Fedor)
14 ⁰⁰ – 14 ³⁰	Stanislav Kadlec , Eaton European Innovation Center, Czech Republic <i>Radiation-induced effects in power distribution industry - switching arcs, streamers and breakdown in low and medium voltage devices</i>
14 ³⁰ – 15 ⁰⁰	Tomáš Homola , Roplass, Czech Republic <i>Atmospheric pressure plasma sources for rapid treatment of nano and bio surfaces</i>
15 ⁰⁰ – 15 ²⁰	Majdi Hochlaf , Université Gustave Eiffel, Champs-sur-Marne, France <i>Irradiation-driven formation of abiotic O₂ from SO₂</i>
15 ²⁰ – 15 ³⁰	MultiChem 2023 Closing
15 ³⁰ – 15 ⁴⁵	Coffee break
15 ⁴⁵ – 17 ⁰⁰	<u>MultiChem Management Committee Meeting</u>