



European Materials Research Society

2025 Spring Meeting

May 26 – 30 | Strasbourg Convention Centre

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SYMPOSIUM R

New developments in the modeling and analysis of radiation damage in materials III

Oral sessions : DRESDE – FIRST FLOOR
Poster sessions : ETOILE – FIRST FLOOR

Symposium Organizers:

Alexandre BOULLE, CNRS – IRCER, Centre Européen de la Céramique, France

Christophe ORTIZ (Main organizer), Laboratorio Nacional de Fusión por Confinamiento Magnético – CIEMAT, Spain

Gihan VELISA, Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH) , Romania

Tiziana CESCA, Department of Physics and Astronomy, University of Padova, Italy

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Wednesday May 28

R11 Modelling I - Experiments I

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13:30	165	Exploring ion-induced material modification through atomistic modeling ZARKADOULA Eva (Invited)
14:00	552	Anharmonic effects on the diffusion of defects in UO_2 and PuO_2 MESSINA Luca
14:15	1105	Development of two comparable machine-learning interatomic potentials for studying tritium interaction with irradiated vanadium SRINIVASAN Prashanth
14:30	1536	Molecular dynamics simulation of the formation of G and W emission centers in silicon by ion irradiation GENNETIDIS Christos
14:45	2054	Microstructural evolution of periclase under irradiation by molecular dynamics simulations CHARTIER Alain
15:15	2529	Peculiarities of structural transformations in piezoelectric lithium tantalate after H^+ ion implantation and annealing compared to silicon CHERKASHIN Nikolay
15:30	2298	Oxides modifications and phase transitions assisted by an X-ray nanobeam ALESSIO Andrea
15:45	2062	Inelastic interactions of ions with defective Ga_2O_3 HOTNOG Andrei-Theodor

Thursday May 29

R12 Modelling II

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08:30	1437	Sampling Complex Energy Landscapes in Material Science Using Data-Driven Force Fields LAPOINTE Clovis (Invited)
09:00	914	Unraveling the mechanism and temperature-dependence of self-healing in tungsten grain boundaries SUÁREZ-RECIO Jorge
09:15	533	Capturing electronic stopping effects in ion irradiation simulations PONOMAREVA Evgeniia

09:30	1455	A comprehensive database of intrinsic point defect elastic dipole tensors across the hcp, bcc and fcc metals WARWICK Andrew R.
09:45	1398	Dislocation loop preferential nucleation in irradiated aluminum: experimental evidence and numerical investigation of mechanisms JOURDAN Thomas

Thursday May 29

R13 Experiment II

[View session abstracts](#)

10:30	2811	Ion beam synthesis of hyper-doped Si nanostructures for infrared plasmonics applications BONAFOS Caroline (Invited)
11:00	1568	Quasi-BCC nanolattice metamaterials fabricated by ion track technology CHENG Hongwei
11:15	1739	Structural and electrical properties of tungsten implanted VO_2 nanobeams ALLEGRET Oihan
11:30	1747	Ion Beam Synthesis of metallic Nano-Oxides in FeCr: Advancing Structural Materials for Nuclear Applications RAJBHAR Manoj Kumar

Thursday May 29

R14 Modelling III - Experiments III

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13:30	2153	Atomic-scale modeling of diffusion with defect clusters contribution in nuclear oxide fuels OSPITAL Petra
13:45	2212	Quantitative analysis of transmission electron micrographs with computer vision HEATH James
14:00	1541	Machine-Learning assisted characterization of defects in FeNiCr alloys induced by displacement cascades DEL FRE Samuel
14:15	1121	Atomistic model for athermal swelling and irradiation creep of copper and tungsten REALI Luca
14:30	2025	Saturation of radiation damage in Fe thin films under high-dose, low-temperature ion irradiation MITSI Eleni (Invited)

15:00	1682	Revealing nanoscale strain in Helium Irradiated SiC through Nanoindentation & Finite Element Modeling BENSALEM Mohamed
15:15	1786	Investigation of photo-chemical effects on oxide layers in the hard X-ray regime BARBIER Antoine

Thursday May 29

R15 Experiments IV

[View session abstracts](#)

16:30	3159	In-situ analysis of swift heavy ion irradiation effects on nanomaterials at GSI TOIMIL MOLARES Maria Eugenia (Invited)
17:00	2730	Lattice Strain and Damage Accumulation in Self-Ion Irradiated Tungsten: Insights from PAS and XRD Analysis HU Zhiwei
17:15	2910	Development of TEM-APT correlative microscopy to improve nanoscopic features characterization in nuclear materials RAKOTOMIZAO Alexandre

Thursday May 29

RP04 Poster Session

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18:00	01_1286	Effects of 100 MeV Swift Heavy Ion Irradiation on Ion Tracks, Microstructural Defects, and Electronic Properties of Zr-Doped Ceria (Ce0.8Zr0.2O2) KUMAR Vivek
18:00	02_1288	Impact of 80 MeV Ag ⁷⁺ ion irradiation on tailoring the properties of ultrathin Tellurium thin film for electronic application BORDOLOI Upasana
18:00	03_2009	Radiation Effects Induced by Heavy Ions in Magnetic Tunnel Junction Liu Jie
18:00	04_2377	Athermal ionization-induced annealing in pre-damaged Ge IANCU Decebal
18:00	06_2494	Suppression of long-range Helium Migration in RHEAs CHEN Zhehao
18:00	07_2756	Development of a tungsten-boron interatomic potential for fusion applications CLEMENT Antoine
18:00	08_2945	Modelling the long-range diffusion of chromium through W-Cr-Y alloys using temperature accelerated dynamics KERR Ryan D.

18:00	09_3004	Geant4-DNA simulations of proton beam interactions with human fibroblast cells: quantifying early DNA damage for therapeutic insights TOZAR Tatiana
18:00	10_622	Electron-beam-induced structural degradation in zeolitic imidazolate framework (ZIF-8): Mechanisms and Mitigation Strategies BANERJEE Pritam
18:00	11_672	Radiation induced oxygen interstitials in wide band gap oxides: hybrid DFT calculations and analysis GRYAZNOV Denis
18:00	12_693	Open questions on the thermal stability of primary electronic centers in heavy swift ion irradiated MgO single crystals KOTOMIN Eugene
18:00	13_712	Point defect diffusion properties in Fe-Ni alloys across the magnetic transition MAINGUY Thomas