



European Materials Research Society

2024 Spring Meeting

May 27 - 31 / Strasbourg Convention Centre

SYMPOSIUM K

Synthesis, processing and characterization of nanoscale multi functional oxide films X
and 8th E-MRS & MRS-J bilateral symposium

Symposium Organizers:

Hiroaki NISHIKAWA, Kindai University, Japan

Jan LANCOK, Institute of Physics CAS, Prague, Czech Republic

Liqiang MAI, Wuhan University of Technology, P. R. China

Nobuyuki IWATA, College of Science & Technology, Nihon University, Japan

Tetsuya YAMAMOTO, Kochi University of Technology, Japan

Valentin CRACIUN, National Institute for Laser, Plasma and Radiation Physics,
Magurele, Romania and Extreme Light Infrastructure for Nuclear Physics, Ilfov, Romania

Valérie DEMANGE, Institute of Chemical Sciences of Rennes, France



Monday May 27
K01_2D materials 1

LONDRES 1 - GROUND FLOOR

08:45	1759	INV	Emerging 2D Oxides: From Tailored Synthesis to Electronic Applications	OSADA Minoru
09:15	241	INV	Unfolding the challenges to prepare epitaxial complex oxide membranes by chemical methods	SALLES Pol
09:45	443		Fabrication of flexible single-crystalline thin films of large-area perovskite-type oxides	NISHIKAWA Hiroaki

Monday May 27
K02_2D materials 2

LONDRES 1 - GROUND FLOOR

10:30	772	INV	Layered hexagonal metal oxides - a new member of 2D family	OU Jian Zhen
11:00	643	INV	Liquid metals for creating two dimensional materials and their controlled doping	KALANTAR-ZADEH Kourosh
11:30	2861		Amorphous tin oxide: towards a 2D semiconductor	AVIS Christophe

Monday May 27
K03_2D materials 3

LONDRES 1 - GROUND FLOOR

13:45	169	INV	Investigation of 2D MoS ₂ grown at wafer scale and 2D MoS ₂ roadmap for future application for microelectronic and photonic applications	MODREANU Mircea
14:15	2477	INV	Intercalation of alkali metal ion into 2D Van der Waals structures studied by in-situ transmission electron microscopy	WU Jinsong
14:45	530		In situ monitoring electrochemistry of low dimensional materials by on-chip device and spectroscopy	PAN Xuelei

15:00	2109		Low-cost processing of Molybdenum industrial waste powder to obtain nanostructured catalysts for Oxygen Evolution Reaction and Hydrogen Evolution Reaction	URSINO Federico
15:15	1179		Green synthesis of zinc oxide nanoparticles from Manihot esculenta extract and their potential applications as photocatalysts	NULHAKIM Lukman
15:30	108		Room-temperature anomalous Hall effect in graphene in interfacial magnetic proximity to EuO grown by topotactic reduction	PANDEY Satakshi
15:45	211		Embarking on a new avenue in solution-processed oxides for ultralow-power thin film transistors	PUJAR Pavan

Monday May 27

K04_Epitaxial/magnetic

LONDRES 1 - GROUND FLOOR

16:30	1131	INV	Overview related to thin metal oxide films and metallic nanowires investigation thanks to multiscale characterization and use as multiple functional heterostructures in various applicative domains	BELLET Daniel
17:00	990		Chemical design of magnetoelectric GaFexOy epitaxial thin films	NASUI Mircea
17:15	770		Epitaxial ferroelectric Hf0.5Zr0.5O2 films as a platform to study interface-layer engineering effects	FINA Ignasi
17:30	1776		On the photovoltaic effect of Bi2FeCrO6 ferroelectric thin films	HENNING Xavier
17:45	2640		Effect of transition-metal substitutions on the magnetization of multiferroic thin films with high magnetocrystalline anisotropy	Mare Darla Manuela
18:00	1324		Sign reversal of Cu magnetic moment in Cu-doped Mn4N epitaxial films by X-ray magnetic circular dichroism	HATATE Aoi
18:15	961		Imaging Electric Field-Induced Phase Transitions in ZrO2 through Band-Excitation Piezoresponse Force Microscopy	LOMENZO Patrick Dominic
08:45	1437	INV	Atomic Scale in-situ (S)TEM Study on Phase Transition of Oxide Nanomaterials	WANG Jianbo

Tuesday May 28
K05_In situ-operando

LONDRES 1 - GROUND FLOOR

09:15	754		Operando characterization of nanocircuits realized on MFe ₂ O ₄ (M=Ni, Fe) / BaTiO ₃ heterostructures with current injection up to breakdown	LIN Haowen
09:30	1261		Machine learning techniques for analyzing time evolution in microscope images	ISHIYAMA Takamitsu
09:45	2210		Photocorrosion of CuBi ₂ O ₄ monitored by operando surface-sensitive X-ray scattering	CADDEO Francesco

Tuesday May 28
K06_Transparent and conductive oxides

LONDRES 1 - GROUND FLOOR

10:30	477	INV	New Insights into the Conductivity Limits of Donor-Doped In ₂ O ₃	ANDREAS Andreas
11:15	502		High-temperature in-air stability and defect structure of transparent conductive oxide SnO ₂ :Ta	KRAUSE Matthias
11:30	617		Differences in effects between postannealing in vacuum and air atmosphere on the properties of two-dimensional (2D) ultrathin amorphous W-doped In ₂ O ₃ films	YAMAMOTO Tetsuya
11:45	2660		Tuning ZnO thin films conductivity for gas sensing: influence of deposition pressure	URBIETA Ana

Tuesday May 28
K07_Thin films applications

LONDRES 1 - GROUND FLOOR

13:45	3061	INV	Effects of oxygen reduction on the superconductivity and Ni-3d orbitals of the infinite layer nickelate	ARIANDO A.
14:15	1739		Study of Junction Parameters by varying Step Angle of YBCO Josephson Junction	KUMAR Sandeep

14:30	1665	ZnMgO/ Eu-doped ZnMgO multi-quantum well structures: a preliminary research towards maximizing Eu ³⁺ red luminescence in oxide based light sources	MATHEW Juby Alphonso
14:45	987	Magnetic properties of infinite-layer nickelate thin films by x-ray magnetic dichroism	PREZIOSI Daniele
15:00	1149	Nanomaterials for 3D Printing Nano- and Micro-Porous Silicon-based Glass and Ceramics	REZA NOROUZI Ahmad
15:15	230	A study of contact resistance and electrical characteristics of a-IGZO TFT with Ruthenium electrodes	BONG Seul Ki
15:45	446	Effect of anionic polymer modification of dye-sensitized photocatalyst on Z-scheme water splitting activity.	YAMAMOTO Haruka
16:00	1537	Towards the stabilization of perovskite and infinite-layer nickelate membranes	SAHIB Hoshang

Tuesday May 28
KP01_Poster session

ETOILE - FIRST FLOOR

16:30	01_1116	120	01_1116 Enhanced synaptic characteristics under applied magnetic field in V ₂ O ₅ /NiMnIn based switching device for neuromorphic computing	KAUSHLENDRA Kumar
16:30	02_1159	120	02_1159 Quantitative interfacial defect analysis in high mobility InSnZnO thin film transistor by the measurement of ac transconductance	KIM Min Jung
16:30	03_1177	120	03_1177 Defect Dynamics and Computational Simulations in Double-Gated a-IGZO TFTs	SHIN Dongyeob
16:30	04_1208	120	04_1208 Strain induced Multiferroicity in Co _{3-x} Sb _x O ₄ thin films	RAHMAN Jisna
16:30	05_1280	120	05_1280 Investigating the Influence of Solvents on NiO Thin Films by Electrostatic Spray Deposition	UEDA Kana
16:30	06_1338	120	06_1338 Multifractal Analysis and Electrical Properties of Particle Size Controlled BaTiO ₃ Filler/Polyvinylidene fluoride Composites	TAKAGI Yuka

16:30	07_135	120	07_135 Fabrication processes of magneto-optic waveguides with magnetic-garnet/semiconductor layer structures	YOKOI Hideki
16:30	08_1544	120	08_1544 The impact of hydrothermally etched and ceria-coated soda-lime glass beads on CO ₂ reduction in a packed-bed dielectric barrier discharge plasma reactor	MANGIONE Gianfabio
16:30	09_1671	120	09_1671 Optimization of the in vitro biodegradability, cytocompatibility, and wear resistance of the AZ31B alloy by micro-arc oxidation coatings doped with zinc phosphate	Yang Chao
16:30	10_1858	120	10_1858 Scanning capacitance microscopic observation on the variation of equivalent oxide thickness induced by charge-retention loss	WANG Chun-Chieh
16:30	11_1945	120	11_1945 Strain induced structural tunability in epitaxial thin films of lead free ferroelectric BZT-xBCT solid solution near morphotropic phase boundary composition by experimental and phase field simulations	S M Vaishnavi
16:30	12_2009	120	12_2009 Towards automated analysis of the lateral dimensions of graphene oxide flakes	MRKWITSCHKA Paul
16:30	13_2072	120	13_2072 Enhanced flux pinning in pulsed laser-deposited YBCO:KNbO ₃ (nanoparticles) nanocomposite thin films	KUMAR Gaurav
16:30	14_2669	120	14_2669 Towards defect-free epitaxial La _{0.7} Sr _{0.3} MnO ₃ freestanding membranes	RAMIS Martí
16:30	15_2931	120	15_2931 Physical properties of cobalt oxide thin films by Spectroscopic Ellipsometry	EN NACIRI Aotmane
16:30	16_3020	120	16_3020 Mobile Pulsed Laser Deposition equipment for in situ investigation at Synchrotron Radiation Facilities	MAKSIMOVA Ksenia
16:30	17_3040	120	17_3040 Structural and Optical characterisation of GaAsN layer grown by MOVPE	PUJIRANA Andi Isni
16:30	18_481	120	18_481 Investigating Magnetic Phenomena in O ₂ Dissociative Adsorption on Iron-Oxides Surfaces: A First-Principles Approach	ELSAYED Wala
16:30	19_525	120	19_525 Femtosecond Laser Induced Damage Threshold Measurements for Oxide Thin Films	CRACIUN Valentin
16:30	20_563	120	20_563 Unveiling the role of surface P–O group in P-doped Co ₃ O ₄ for electrocatalytic oxygen evolution by On-chip micro-device	LUO Wen

16:30	21_564	120	21_564 Molecular carbon skeleton nanofilms with self-regulating ion-transport channels for long-life potassium ion batteries	LUO Wen
16:30	22_623	120	22_623 WO ₃ based new composite materials with high x-ray attenuation factor	CRACIUN Valentin
16:30	23_624	120	23_624 Photocatalytic performance of Cu doped ZnO fin films Coted inside Glass tubes: synthesis, characterization and functionalization	KHARROUBI Bachir
16:30	24_703	120	24_703 Carrier concentration engineering of top active layer for enhancing electron transport and stable solution-processed bilayer-structure oxide thin-film transistors	LEE Jinuk
16:30	25_722	120	25_722 Fabrication of Sm- and Gd-doped CeO _x /Y-doped (Hf, Zr)O ₂ layered structures by chemical solution deposition	TOKUMITSU Eisuke
16:30	26_746	120	26_746 Optimizing the bilayer channel thickness for solution-processed heterojunction oxide thin-film transistors to achieve efficient charge transport and improved bias stability.	EUN Jun-Su
16:30	27_753	120	27_753 Growth and design of antiferromagnetic (LaVO ₃) _m /(PrVO ₃) _n superlattices	COPIE Olivier
16:30	28_786	120	28_786 Impact of top electrodes on the resistive switching properties of Y ₂ O ₃ -based RRAM devices	CHO Yoonjin
16:30	29_828	120	29_828 Performance comparison of Y ₂ O ₃ insulators produced using sol-gel method and various precursors	LEE Sangwoo
16:30	30_850	120	30_850 Controlled Formation of Nanoribbons and Their Heterostructures via Assembly of Mass-selected Inorganic Ions	ZHANG Xuejiao
16:30	31_97	120	31_97 Multicomponent oxide thin films for photovoltaic application	SPASOVA Stanka

Wednesday May 29
K08_Epitaxy 1

LONDRES 1 - GROUND FLOOR

08:45	2483	INV	Controlling hydrogen induced phase transition on strongly correlated oxides thin films and their application	TANAKA Hidekazu
09:15	371		Properties Of Barium Bismuthate Layers On Si: Molecular Beam Epitaxy Study	AHMED Islam
09:30	512		Epitaxial SrTiO ₃ thin films on silicon for electro-optical quantum devices	BOELEN Andries
09:45	1489		Observation of Mermin-Wagner behavior in LaFeO ₃ /SrTiO ₃ superlattices	KIABA Michal
10:30	2310	INV	Integration of complex functional oxide on any substrate with oxide nanosheets	FOUCHET Arnaud
11:00	12		Electric field-driven phase transition in antiferroelectric PbZrO ₃ studied by in situ synchrotron X-ray diffraction	ZING Alexandre
11:15	1418		Characterization of {ZnO/CdO} short period superlattices grown by MBE	KOZANECKI Adrian
11:30	973		Epitaxial growth of MoO _x (x = 2, 3) films grown by magnetron sputtering towards van der Waals Epitaxy (vdWE)	ALIJAN FARZAD LAHIJI Faezeh

Wednesday May 29

K10_Laser/nanostructures

LONDRES 1 - GROUND FLOOR

13:45	2496	INV	Laser-driven synthesis of optically active metastructures for advanced nanophotonic components	GONZALO José
14:15	2145		Structure and magnetic properties of RVO ₃ epitaxial thin films grown by pulsed laser deposition	MARTIROSYAN Mariam
14:30	971		Insight into pulsed laser deposition of selected oxynitride system. Towards defect control via plasma diagnostic	IRIMICIUC Stefan
14:45	959		Volcano-like effect at the nanoscale: efficient oxygen exchange at the Si/SnO ₂ interface	LIU Poting

15:00	796	Magnetic anisotropy tailored by strain in epitaxial CoV ₂ O ₄ thin films grown by Pulsed Laser Deposition	EL KHABCHI Lamiae
15:15	1574	Morphological and chemical analysis of mesoporous mixed IrO _x -TiO _y thin films as electrode materials	HODOROABA Vasile-Dan

