



European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM Q

Advanced functional films grown by pulsed deposition methods – II

*Symposium Organizers:*

Magdalena NISTOR, INFIM, Bucharest, Romania

Amaël CAILLARD, GREMI, Orléans, France

José GONZALO, CSIC, Madrid, Spain

Stephanos KONSTANTINIDIS, University of Mons, Belgium



TSST



Tuesday May 30

## Q01

# Fundamentals, methods & diagnostics of Pulsed deposition processes I

Chairperson(s) : GONZALO Jose - KONSTANTINIDIS Stephanos

Amsterdam (Ground floor)

10:00	2408	INV	Temporally modulated vapor fluxes: a tool for controlling morphology and atomic arrangement in thin films	SARAKINOS Kostas
10:30	2139		Steps for decoupling the effects of the kinetic and potential energy of ions for pulsed filtered cathodic arc deposited (V,Al)N thin films	UNUTULMAZSOY Yeliz
10:45	2481		New High Power Impulse Magnetron Sputtering (e-HiPIMS) with a multi-level high power supply	ZGHEIB Joelle
11:00	33_949		Effect of annealing temperature on optical and microstructural properties of Cu-based transparent heat reflectors obtained by HiPIMS and RFMS processes	PANA Iulian
11:15	730		Pulsed Laser Deposited Nanostructured Manganese Oxides Thin Films: Decoupling Morphology and Phase for a Rationally Designed Material	MACRELLI Andrea
11:30	2560		Deposition inside silicon trenches and porous substrate using bipolar high power impulse magnetron sputtering	ATMANE Soumya
11:45	1614		Synthesis of functional crystalline oxides by digitally processed DC sputtering synchronized with oxygen gas pulsing	ISSHIKI Hideo

Tuesday May 30

## Q02

# Fundamentals, methods & diagnostics of Pulsed deposition processes II

Chairperson(s) : CAILLARD Amael - NISTOR Magdalena

Amsterdam (Ground floor)

13:30	2782	INV	Creation of Material Libraries by Pulsed Laser Deposition – History and Recent Developments	VON WENCKSTERN Holger
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14:00	939	Dependence of the ZrO <sub>2</sub> growth on the crystal orientation: growth simulations and pulsed magnetron sputtering	HOUSKA Jiri
14:15	2388	Growth and unusual epitaxial relations of NiO and CrN thin films on r-Al <sub>2</sub> O <sub>3</sub>	ALIJAN FARZAD LAHIJI Faezeh
14:30	1684	Tuning the properties of oxide thin films grown by pulsed laser depositions via plasma diagnostics tools	IRIMICIUC Stefan
14:45	2750	Developing a method with optical emission spectroscopy to control thin layer in R-HiPIMS deposition process	BOIVIN D.

**Tuesday May 30**

**Q03**

## Functional oxides & TCO's I

Chairperson(s) : LAIDANI Nadhira - SARAkinOS Kostas

**Amsterdam (Ground floor)**

15:00	1452	INV Tungsten oxide for chemical sensors Tungsten trioxide thin films fabricated by pulsed laser deposition, high power impulse magnetron sputtering and DC hollow cathode discharge for chemical sensor	LANCOK Jan
15:30	1482	Unraveling the H and O incorporation in EuOOH thin films prepared by pulsed laser deposition	MARISCAL-JIMENEZ Antonio
15:45	2351	Crystallization kinetics of TiO <sub>2</sub> thin films deposited by reactive High Power Impulse Magnetron Sputtering	FERNANDES Daniel

**Tuesday May 30**

**Q04**

## Interfaces, Heterostructures & low dimensional materials

Chairperson(s) : HOUSKA Jiri - LANCOK Jan

**Amsterdam (Ground floor)**

16:30	1990	PLD-grown epitaxial Fe <sub>3</sub> O <sub>4</sub> (111)/ZnO(0001) films with engineered interface	MADACI Ismail
16:45	2561	Structure and properties of low dimensional epitaxial oxides; interfaces and superlattices	KOSTER Gertjan

<b>17:00</b>	<b>2582</b>	Controlling the Schottky Barrier height via polar discontinuity at (La,Sr)MnO <sub>3</sub> / SrTiO <sub>3</sub> interface	<b>WOLFMAN Jerome</b>
<b>17:15</b>	<b>2729</b>	Interface control by chemical and dimensional matching in an oxide interface	<b>O'SULLIVAN Marita</b>
<b>17:30</b>	<b>95</b>	Choice of substrate for graphene growth by molecular dynamics ~theoretical and experimental approaches	<b>KANEKO Satoru</b>
<b>17:45</b>	<b>1273</b>	Reactive HiPIMS of hydrogenated amorphous carbon using toluene precursor	<b>GHOSH Monalisa</b>

Wednesday May 31

Q05

## Functional oxides & TCO's II

Chairperson(s) : ASPE Barthélemy - VON WENCKESTERN Holger

Amsterdam (Ground floor)

10:00	2742	Transparent oxide films with permittivity enhanced via Ga-Cu co-doping	LING Francis Chi-Chung
10:15	2595	Proximity induced ferromagnetism in SrIrO <sub>3</sub>	JAISWAL Arun Kumar
10:30	397	The growth and properties of transparent conducting (La,Sr)VO <sub>3</sub> thin films of the perovskite type.	EL KHALOUFI Oualyd
10:45	677	Strain-Driven Metal-to-Insulator Transition and Charge Ordering in LiV <sub>2</sub> O <sub>4</sub>	WU Yu-Mi
11:00	2629	Vanadate TCO on glass substrate using CNO nanosheets as a template: effect of thickness on the film properties	EL RAMI Marie
11:15	2706	Transparent high conductive TiON nanofilms obtained by nucleation control for sustainable optoelectronics	ESTHER Enríquez Pérez
11:30	1303	Room temperature epitaxial growth of Zn-doped iron oxide films on c-, a- and r-cut sapphire substrates	DEMANGE Valérie

**Wednesday May 31**  
**JOINT LQ 01**  
**PLD of Thin Films I (JOINT SESSION L & Q)**  
**Symposia**

Chairperson(s) : HARO-PONIATOWSKI Emmanuel - KOSTER Gertjan

**Etoile A (1st floor)**

<b>13:30</b>	<b>2743</b>	<b>INV</b>	A brief historical overview of PLD for complex oxides	<b>BLANK Dave H. A.</b>
<b>14:00</b>	<b>1182</b>		Low-Dimensional Eu <sup>2+</sup> Based Emitters on Si by means of Nano- and Femtosecond Laser Processing	<b>MARISCAL-JIMÉNEZ Antonio</b>
<b>14:15</b>	<b>904</b>		PLD-based pyramidal-shaped ceria biointerfaces	<b>BONCIU Anca</b>
<b>14:30</b>	<b>2344</b>		High quality MnZn soft ferrite films grown by pulsed laser deposition for applications in high frequency planar transformers and inductors	<b>PETRESCU Lucian-Gabriel</b>

**Wednesday May 31**  
**JOINT LQ 02**  
**PLD of Thin Films I (JOINT SESSION L & Q)**  
**Symposia**

Chairperson(s) : BLANK Dave H. A. - SOLIS Javier

**Etoile A (1st floor)**

<b>15:00</b>	<b>2448</b>		Morphology control of self-organized Sr <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> and Ca <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> nanostructures on SrVO <sub>3</sub> and CaVO <sub>3</sub> perovskite PLD films	<b>DEMANGE Valérie</b>
<b>15:15</b>	<b>2672</b>		Perovskites-based thin films for photoelectrochemical water-splitting applications	<b>ANDREI Florin</b>
<b>15:30</b>	<b>2644</b>		Fabrication of nanostructured glasses by laser ablation	<b>HARO-PONIATOWSKI Emmanuel</b>
<b>15:45</b>	<b>178</b>		A Hybrid p-n Junction Based on metal chalcogenides for Highly Efficient Self-Powered Photodetection	<b>KUMAWAT Kishan Lal</b>

**Wednesday May 31**

**Q\_P**

**Poster session**

**Chairperson(s) : CAILLARD Amael - GONZALO Jose - KONSTANTINIDIS Stephanos - NISTOR  
Magdalena**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_2238</b>	In situ monitoring of electrical resistivity during pulsed laser deposition of p-type copper halides films	<b>LANCOK Jan</b>
<b>02_1232</b>	Influence of deposition parameters on the microstructure of GeTe-Sb <sub>2</sub> Te <sub>3</sub> heterostructures grown by pulsed laser deposition	<b>CREMER Sonja</b>
<b>04_882</b>	Controlling the tungsten films structure by recessive and pulsed current electrolysis modes	<b>STESYUK Tatyana</b>
<b>05_2255</b>	Spectroscopic ellipsometry of porous black aluminium thin films	<b>MARESOVA Eva</b>
<b>06_2753</b>	Deposition of superhard WB <sub>2</sub> based films using HiPIMS	<b>LEWANDOWSKA M.</b>
<b>07_702</b>	Effect of PLD parameters on optical properties of nickel oxide thin films	<b>HORYNOVA Eva</b>
<b>08_345</b>	Photo-resistivity in nickelate films with tailored structure	<b>STUPAKOV Alexandr</b>
<b>09_349</b>	Tuning the infrared dielectric and plasmonic properties of pulsed laser deposited ZnO thin films	<b>TABBAL Malek</b>
<b>10_2620</b>	Zirconium oxynitrides thin films by reactive magnetron sputtering for the oxygen reduction reaction	<b>CAILLARD Amael</b>
<b>11_2713</b>	Effect of silicon content and thermal treatment on structural and optical properties of hafnia-based films	<b>KHOMENKOVA L.</b>
<b>12_393</b>	Thermal conductivity of thin films and bulk BiFeO <sub>3</sub> determined by opto-thermal Raman spectroscopy method	<b>HIMCINSCHI Cameliu</b>
<b>13_2404</b>	Growth and properties of Ga <sub>2</sub> O <sub>x</sub> (x < 3) thin films obtained by pulsed-laser deposition	<b>PERRIERE Jacques</b>
<b>14_2491</b>	Black amorphous zinc oxide thin films grown by pulsed electron beam deposition	<b>NISTOR Magdalena</b>

15_2035	Spectral and structural investigation of e-beam evaporated yttrium based oxide, and oxyhydride thin films	ARSLAN Halil
16_1265	Homo-epitaxial growth of Lithium Niobate by Pulsed-Laser Deposition	PERSHUKOV Ihor
17_1942	Effect of Ba <sup>+</sup> ion implantation on the composition of silicate glasses	TASHMUKHAMEDOVA Dilnoza
19_1405	Structure and properties of RVO <sub>3</sub> epitaxial thin films grown by pulsed laser deposition	MARTIROSYAN Mariam
20_2697	High Uniformity Thin Films Deposited on Large Areas by PLD	SOPRONYI Mihai
21_1112	Unusual angular dependence of the magnetoresistance in the LaVO <sub>3</sub> -KTaO <sub>3</sub> Rashba system	GUPTA Anshu
22_2101	Features of pulsed laser deposition of luminescent lanthanum vanadate films	CHUKOVA Oksana
23_2135	Phase-electrical function relationship of vanadium oxide based heterostructures	PLUGARU Rodica
24_2619	XPS characterization of functional materials: beyond the surface chemical nature analysis	LAIDANI Nadhira
25_1412	Ultrafast laser processing of PLD-deposited Yb <sub>2</sub> O <sub>3</sub> -doped ZnO films	SOLIS Javier
26_160	Effect of surfactant on the morphology and tarnishing behaviour of nanostructured Au coatings deposited via ultrasonic-assisted pulse-galvanostatic route from a deep eutectic solvent-based bath	SATPATHY Bangmaya
27_1080	Fabrication of nanostructures consisting of composite nanoparticles by open-air PLD	DIKOVSKA Anna
28_1228	Nanocrystals synthesis by atmospheric air breakdown voltage generated by the interaction between microwaves and metallic wires	CRACIUN Valentin
29_2537	Antibacterial activity of MAPLE coatings based on the magnetite nanoparticles functionalized with Nigella sativa and antibiotics	CRACIUN Valentin
30_2513	Fabrication of Gold and Silver Nanostructured Films by Pulsed Laser Ablation and Application to SERS Substrates	TAKEDA Naoki
31_1823	Exploring the biocompatibility and antibacterial activity of immobilized Ag NPs doped Bio-HEA coatings for orthopedic implants	MOTALLEBZADEH Amir



<a href="#">32_2578</a>	Cytocompatible and antimicrobial assessment of novel marine-derived hydroxyapatite coatings	<b>DUTA* Liviu</b>
<a href="#">34_1709</a>	Pulsed Laser Deposition of ceramic solid electrolyte thin films for solid state microbatteries	<b>DE BONIS Angela</b>
<a href="#">35_1201</a>	High-rate HiPIMS reactive sputter deposition of p-type Cu <sub>2</sub> O-based thin films for translucent electronics applications	<b>REZEK Jiri</b>
<a href="#">36_1305</a>	Pulsed laser deposition of LaAlO <sub>3</sub> films for MEMS applications	<b>BELLINGERI Emilio</b>
<a href="#">37_1392</a>	Gold thin film composites for highly sensitive plasmonic biosensor	<b>GIREAU Manon</b>
<a href="#">38_1246</a>	Electrical and gas sensing properties of ZnO-WO <sub>3</sub> mixed oxide nanostructures produced by open-air PLD	<b>DILOVA Tina</b>
<a href="#">39_2633</a>	Lead free BCTZ thin films for gas detection	<b>ION Valentin</b>
<a href="#">40_2715</a>	Physical-chemical characteristics and in vitro biofunctional performance of bioceramic implant-type coatings fabricated from renewable sources	<b>DUTA* Liviu</b>
<a href="#">42_1113</a>	Influence of the flexible substrate on the properties of the organic films prepared by MAPLE	<b>PETRE Gabriela</b>
<a href="#">43_2224</a>	Effect of laser deposited flexible transparent conductor electrode on the properties of organic heterostructures	<b>PETRE Gabriela</b>

Thursday June 1

Q06

## Applications

Chairperson(s) : DEMANGE Valérie - REZEK Jiri

Amsterdam (Ground floor)

10:00	2207	INV	Reactive pulsed sputtering of semiconducting ternary oxide thin films for photoelectrochemical water splitting and hydrogen production	HUBICKA Zdenek
10:30	1667		Growth of epitaxial $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> and ZnFe <sub>2</sub> O <sub>4</sub> thin film photoelectrodes by pulsed laser deposition for solar water splitting	MIRIYALA Kumaraswamy
10:45	721		Growth of binary oxide thin films for medical applications.	YADAV Abhishek
11:00	305		Development of VO <sub>2</sub> thin films, the beginnings of a radiative thermal transistor	ALONZO-ZAPATA Irving
11:15	429		Influence of PLD deposition parameters on the structural properties of VO <sub>2</sub> epilayers for smart windows applications	RAI Ayushi
11:30	2232		AlxTayOz thin films deposited at low temperature by pulsed direct current reactive magnetron sputtering for dielectric applications	DREVET Richard
11:45	1124		Experimental band structure of ferroelectric Pb(Zr,Ti)O <sub>3</sub> and what can we learn from it	HUSANU Marius Adrian

Thursday June 1

Q07

## Nanoparticles, nanostructures & nanoscale materials I

Chairperson(s) : HUBICKA Zdenek - NISTOR Magdalena

Amsterdam (Ground floor)

13:30	1325	INV	A versatile technique for complex materials: a review on the Pulsed Electron Deposition	PATTINI Francesco
14:00	1815		3d – 4f exchange-strictive interactions in perovskite rare-earth vanadate thin films	COPIE Olivier
14:15	1542		In-flight decoration of gas-aggregated ZrN nanoparticles with Ag using continuous and pulsed magnetron sputtering	PROTSAK Mariia

14:30	2663	Ionised Jet Deposition system and method	NOZAR Petr
14:45	1848	Optical Properties of Silicon NCs Embedded in SiO <sub>2</sub> Fabricated by Ion Implantation and Reactive Pulsed Laser Deposition	IWAYAMA Tsutomu

Thursday June 1

Q08

## Nanoparticles, nanostructures & nanoscale materials II

Chairperson(s) : O'SULLIVAN Marita - PATTINI Francesco

Amsterdam (Ground floor)

15:00	2400	Pulsed-laser ablation of silver: formation of nanoparticles on a liquid substrate	BEJJIT Charaf Eddine
15:15	2483	Synthesis of gold nanoparticles by DC and High-Power Impulse Magnetron Sputtering using a liquid substrate	KONSTANTINIDIS Stephanos
15:30	2592	Tuning the functional properties of perovskite thin films through complex ensembles of nanoscale phase/nanodomain fluctuations.	SCARISOREANU Nicu Doinel
15:45	1811	Presence of Delocalized Ti 3d Electrons in Ultrathin Single-Crystal SrTiO <sub>3</sub>	HUANG Shih-Wen

Thursday June 1

Q09

## Metal & alloy functional coatings

Chairperson(s) : CAILLARD Amael - SCARISOREANU Nicu Doinel

Amsterdam (Ground floor)

16:30	273	Insights on CaTiS <sub>3</sub> Films Grown by Pulsed Laser Deposition	FIX Thomas
16:45	1698	FeCrNiCoMo-based coatings deposited via High Power Impulse Magnetron Sputtering	DEAMBROSIS Silvia Maria
17:00	1773	Preparation of FeNiCrCoAl Thin Films by Ionized Jet Deposition Method	SKOCDOPOLE Jakub
17:15	2282	Pulsed DC magnetron sputtering of thin films of black aluminium	NOVOTNY Michal
17:30	2475	Deposition of W films by HiPIMS: role of magnetic field and bias	VAVASSORI Davide

17:45

1841

PLD of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8</sub> thin films for ion-beam nanostructuring to uncover new vortex dynamics

KEPPERT Sandra



