

## SYMPOSIUM

### Surface science and engineering for advanced applications

MIÉRCOLES 4 JULIO

CHAIR PERSON	AM1	9:45-10:00	Precise controlled fabrication, manipulation and analysis of nanoparticles.
Alberto Palmero		10:00-10:15	From star-dust to nanotechnology.
Joao Carlos Oliveira		10:15-10:30	Preparation and characterization of thin-film nanocomposite membranes embedded with cellulose acetate functionalized multiwalled carbon nanotubes for water purification
		10:30-10:45	Cluster tool for in situ processing and characterization of thin films at high temperatures
			Correlation between substrate ion fluxes and properties of DLC films deposited by DOMS
		10:45-11:00	in Ar and Ar + Ne plasmas
		11:00-11:15	Fabrication of transparent conductive indium-tin oxide films by oblique angle deposition: Relation between the growth parameters, nanostructure and properties for multispectral applications
			TÍTULO
CHAIR PERSON	AM2	11:45-12:00	Near Infrared Optofluidics with Nanocolumnar SiOx-SiO2 multilayers prepared by magnetron sputtering at oblique angles
Alberto Palmero		12:00-12:15	Control over interface roughness and tightness in porous oxide multilayer systems prepared by MS: Fabrication of environmentally stable 1D photonic structures
Joao Carlos Oliveira		12:15-12:30	Synergic antibacterial coatings combining titanium nanocolumns and tellurium nanorods
		12:30-12:45	Fabrication and characterization of mesoporous structure films by using titanium dioxide nanoparticles
		12:45-13:00	Impact of flash-lamp-annealing on the structure of TiO2-based films
		13:00-13:15	Impact of flash-lamp-annealing on the structure of TiO2-based films
			New challenges of the self-propagating character in Ni/Ti nanomultilayers
			TÍTULO
CHAIR PERSON	PM1	15:00-15:15	Desarrollo de recubrimientos biofuncionales: de los ensayos In vitro a los In vivo
Sandra Carvalho		15:15-15:30	
Jose Miguel Garcia Martin		15:30-15:45	Incorporation of nanoparticles on nanostructured surfaces
		15:45-16:00	Bioactive glass coatings obtained by different thermal spray technologies
		16:00-16:15	Silver nanoparticles on bioceramic coatings for biomedical devices: fabrication and in vitro study
		16:15-16:30	Estudio de las propiedades antimicrobianas en compuestos de polipropileno
			TÍTULO
CHAIR PERSON	PM2	17:00-17:15	Titanium surface modifications by plasma electrolytic oxidation for bone tissue engineering
Sandra Carvalho		17:15-17:30	Development of bioactive tantalum oxide surface
Jose Miguel Garcia Martin		17:30-17:45	Plasma Nitriding and Titanium PVD Coating of ASTM F138 Stainless Steel for Biomedical Applications
		17:45-18:00	Ions Release Analysis of TiAg PM Alloys Exposed to Artificial Saliva Solution
		18:00-18:15	Novel molecule releasing microcarriers for bone regeneration
		18:15-18:30	

#### PONENTE

**JOSE ANGEL MARTIN GAGO (Inv)**

Mónica Silva  
Ramon Escobar-Galindo

João Carlos Oliveira

Bertrand Lacroix  
PONENTE

Alberto Palmero

Aurelio García Valenzuela  
Jose Miguel Garcia Martin  
Maria Jesus Ariza  
Raul Gago Fernandez  
André Cavaleiro  
PONENTE

**ANA CONDE DEL CAMPO (Inv)**

Sandra Carvalho  
Beatriz Garrido  
Francisco Gontad  
Carolina Losada Fernández  
PONENTE  
Ana Santos Coquillat  
Luísa Fialho  
Vladimir Baggio Scheid  
Francisco Segovia López  
Roman Perez

## SYMPOSIUM

### Surface science and engineering for advanced applications

JUEVES 5 JULIO			TÍTULO
CHAIR PERSON	AM1	9:45-10:00	
<b>Ramón Escobar Galindo</b>		10:00-10:15	<b>El grupo especializado CyTeS de la Sociedad Española de Materiales</b>
<b>Mónica Silva</b>		10:15-10:30	<b>Portuguese Surface Engineering Technological Platform – From the Lab to the Market</b>
		10:30-10:45	Design and high-temperature durability tests of solar-selective coatings based on aluminium titanium oxynitrides $\text{Al}_x\text{Ti}_{1-y}(\text{OxN}_{1-x})$
		10:45-11:00	Water electrolysis with nanostructured $\text{CoOx-CuOx}$ electrodes prepared by magnetron sputtering at oblique angles
		11:00-11:15	Surface Treatments to Avoid Multipactor Effect in RF Devices for Space Applications
CHAIR PERSON	AM2	11:45-12:00	TÍTULO
<b>Ramón Escobar Galindo</b>		12:00-12:15	Water repellency in leathers by low pressure plasma technology
<b>Mónica Silva</b>		12:15-12:30	Inverse Cassie-Baxter regime and air-wicking effect revealed by captive bubble experiments
		12:30-12:45	Characterization, wetting, and icephobic behavior of laser modified aeronautic alloys
		12:45-13:00	Nano-structuring of ITO via self-organization upon high repetition rate femtosecond-laser irradiation for anisotropic conductivity applications
		13:00-13:15	Development of a new type slurry coatings on titanium powder metallurgy for biomedical applications
		13:15-13:30	Resistive coating for heat generation in heating industrial applications
CHAIR PERSON	PM1	14:15-14:30	TÍTULO
<b>Albano Cavaleiro</b>		14:30-14:45	<b>Self-lubricant and multilayered coatings as a solution for high temperature applications</b>
<b>Raul Gago</b>		14:45-15:00	A novel approach to the synthesis of layered double hydroxides and their “self-healing” effect on corrosion protection
		15:00-15:15	Reducing the galling in stainless steel drawing processes by means of hammer peened textured surfaces
		15:15-15:30	Surface modification of a cast iron with spheroidal graphite using duplex Steel
		15:30-15:45	Preparation, characterization and properties of epoxy resin nanocomposites with graphene+ionic liquids
CHAIR PERSON	PM2	16:15-16:30	TÍTULO
<b>Albano Cavaleiro</b>		16:30-16:45	Thermal stability and tribomechanical properties of hard Cr-doped DLC coatings deposited HiPIMS
<b>Raul Gago</b>		16:45-17:00	Tribological properties of high $\text{sp}^3$ content DLC thin films prepared by DOMS
		17:00-17:15	Self lubricant coating based on an adaptative design
		17:15-17:30	Comparison of the tribological performance of W-S coatings alloyed with C and N in contact with rubber
		17:30-17:45	Residual stress of Al-Fe intermetallic coatings on the P92 steel & its implication on failure prediction by thermo-mechanical coupling
		17:45-18:00	Influence of Ag content on the mechanical, structural and tribological properties of $\text{TiSiN(Ag)}$ thin films deposited by HiPIMS

#### PONENTE

**AGUSTIN R. GONZALEZ ELIPE (Inv)**  
**RICARDO ALEIXANDRE (Inv)**

Irene Heras Pérez

Esther López-Fernández  
Isabel Montero Herrero  
PONENTE  
Natalia Cuesta Garrote  
Miguel Cabrerizo Vilchez  
Paloma García Gallego

Javier Solis  
Paula Rodríguez González  
João Paulo Dias  
PONENTE

**FILIPE FERNANDES (Inv)**

Daniel Vieira  
Endika Mugarra  
Enara Mardaras Andrés  
Joaquín Arias Pardilla  
PONENTE

José Antonio Santiago  
Ricardo Serra  
Albano Cavaleiro  
Ana Manaia

Germán Alcalá Penadés

Diogo Cavaleiro

## SYMPOSIUM

### Surface science and engineering for advanced applications

#### VIERNES 6 JULIO

CHAIR PERSON	AM1	9:45-10:00
<b>Carles Colominas</b>		10:00-10:15
<b>João Paulo Dias</b>		10:15-10:30
		10:30-10:45
		10:45-11:00
		11:00-11:15

#### TÍTULO

**Big build volume additive manufacturing for industrial prototyping and production**

Cold Spray as a repair technique

Microstructure, Hardness, and Salt-water Corrosion of Cold-Sprayed Ti6Al4V coatings on Ti6Al4V plates.

Deposition and characterization of polymeric coatings obtained by Cold Gas Spray

Mechanical properties and corrosion behavior of stainless steel coatings deposited on ZE41 magnesium

alloy by HVOF

#### TÍTULO

CHAIR PERSON	AM2	11:45-12:00
<b>Carles Colominas</b>		12:00-12:15
<b>João Paulo Dias</b>		12:15-12:30
		12:30-12:45
		12:45-13:00
		13:00-13:15

Multifunctional organic thin films and supported nanostructures by plasma assisted vacuum deposition for the development of photonic and optoelectronic devices and components

Avoiding Target Poisoning in Reactive Magnetron Sputtering Depositions at Oblique Angles

Design of 3D Bioprinted Scaffolds for Cartilage Regeneration

Surface texture characterization for metal additive manufacturing: Analysis of suitability of stylus and optical measurement techniques

Surface Hardening of Sintered (PM) and Wrought steels by Laser Heat Treatment

Influence of laser surface nanotexturing on the tribological properties of silicon

#### PONENTE

**SERGIO MOLINA (Inv)**

Kirian Zomeño

Múñez, Dr. Claudio José

Nuria Salazar

Sonia García Rodríguez

#### PONENTE

Angel Barranco

Rafael Alvarez Molina

Gloria Pinilla García

Wilson Tato

Angela Veiga De La Fuente

Isabel Alves Lopes

## SYMPOSIUM

### Surface science and engineering for advanced applications

#### POSTER SESSION

##### TÍTULO

Montmorillonite-TiO<sub>2</sub> photocatalyst - Preparation and use for removal of water pollutants  
Secondary electron emission in metal/dielectric composites  
Secondary Electron Emission Yield of Ordered Nanostructured Surfaces.  
Structural, optical, electrical and electrochemical properties of GIZO in function of parameters of magnetron sputtering deposition  
Incorporación de Si en capas anódicas de TiO<sub>2</sub>  
Surface treatment of apatite coatings deposited on titanium for bio-medical applications  
Microstructural Characterization of Alpha-Case and Recast Layer in Ti-6Al-4V Components Obtained by EDM Processes  
Feasibility of polymeric coatings obtained by Cold Gas Spray  
Corrosion resistance of cold sprayed ALC355 alloy for aeronautical repairs.  
High temperature corrosion behavior of T24 steel coated by HVOF with Ni-20Cr alloy  
Solar surface hardening of sintered ferrous metallurgical alloys  
Effect of nano-zirconia and alumina on the resistance of the glaze to surface abrasion  
Reuse of alumina obtained from sludge produced in an electrocoagulation process as nanocontainers for corrosion protection  
Growth of porous thin films by reactive magnetron sputtering using particle collimators  
Modulating Low Energy Ion Plasma Fluxes for the Growth of Nanoporous Thin Films  
Atomic transport of sputtered species in a plasma and nanostructural development of SiO<sub>2</sub> thin films grown by magnetron sputtering

##### PONENTE

Beatriz González Rodríguez  
Leandro Olano García  
Isabel Montero Herrero

José Ramos Barrado  
Ana Conde del Campo  
Ana María Beltrán

Ana Pastor  
Aina Cabrer  
David Cruz Rodríguez  
Najib Abu-warda Pérez  
Ana Romero Gutiérrez  
Marinéia Neto Capela

Juan José Santana Rodríguez  
Aurelio García Valenzuela  
Sandra Muñoz Piña

Germán Alcalá Penadés