



Agenzia nazionale per le nuove tecnologie,  
l'energia e lo sviluppo economico sostenibile



## WORKSHOP

### INNOVATIVE INDUSTRY AND ENABLING KETS: ADVANCED COATINGS SYNTHESIS AND CHARACTERIZATION

4-5 December 2018

University of Rome "Tor Vergata", Aula Galileo

#### Scientific Panel

Roberto Montanari	University of Rome "Tor Vergata"
Giuseppe Barbieri	ENEA
Girolamo Costanza	University of Rome "Tor Vergata"
Luisa Di Vona	University of Rome "Tor Vergata"
Antonio Gloria	CNR-IPCB Napoli
Tullio Monetta	University of Napoli Federico II
Maria Richetta	University of Rome "Tor Vergata"
Antonio Rinaldi	ENEA
Alessandra Varone	University of Rome "Tor Vergata"

#### Programme

##### 4 December

**9:30 Montanari/Rinaldi Introduction (welcome and presentation of the EP SUPERMAT)**

#### Chair G. Barbieri

9:40 R. Montanari, G. Costanza, A. Varone, University of Rome "Tor Vergata"  
Preparation and characterization of W-thick coatings for fusion applications

10:00 A. Varone, R. Montanari, E. Pakhomova, M. Richetta, University of Rome "Tor Vergata"  
Residual stresses and laser pulse effects on plasma sprayed W

10:20 G. Dose, F. Gallay, H. Greuner, M. Richou, S. Roccella, E. Visca, F. Romanelli, University of Rome "Tor Vergata"  
Characterization and high heat flux performance of tungsten monoblock components realized with thin graded interlayer

10:40 G. Verona-Rinati, I. Ciancaglioni, R. Donnini, S. Kaciulis, A. Mezzi, R. Montanari, University of Rome "Tor Vergata"  
Surface modification of stainless steel treated by low-temperature plasma-assisted carburization

11:00 E. Santecchia, S. Spigarelli, M. Cabibbo, A.M.S. Hamouda, F. Musharavati, Università Politecnica delle Marche, Ancona  
Microstructural and tribological characterization of a hard anodized AA6082 aluminium alloy

**11:20 Coffee Break**



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### **Chair A. Varone**

11: 50 A. Acquesta, A. Carangelo, T. Monetta, University of Napoli Federico II

The Effect of Graphene on the Protective Properties of Water-Based Epoxy Coatings on Al2024-T3

12:10 A. Carangelo, A. Acquesta, T. Monetta, University of Napoli Federico II

Corrosion behaviour of AZ31 magnesium alloys coated with organic coating by using a polydopamine film as intermediate layer.

12:30 M.L. Di Vona, I.V. Ferrari, R. Narducci, E. Sgreccia, University of Rome "Tor Vergata"

Electrochemical synthesis of thin layer polymer electrolytes

12:50 R. Sola, B. Zardin, P. Veronesi, M. Borghi, University of Modena and Reggio Emilia

A study on coatings for reduction of friction and wear of swashplate axial piston pumps and motors

### **13:10 Lunch break**

### **Chair R. Montanari**

14:40 M. Richetta, University of Rome "Tor Vergata"

Structures, synthesis and properties of LDHs

15:00 R. Pizzoferrato, E. Ciotta, University of Rome "Tor Vergata"

Layered Double Hydroxides: a material for patternable coatings with tailorable electrical conductivity

15:20 B. Bozzini, University of Salento

In situ spectroscopic ptychography during the electrodeposition of Mn-Co/polypyrrole nanocomposites

15:40 C. Mele, University of Salento

The erosion-corrosion of protective coatings in steel for applications in oil and as production

16:00 F. Lionetto, University of Salento

Hybrid welding of metal to carbon fiber reinforced composites based on thermoplastic coatings

### **16:20 Coffee Break**

### **Chair A. Rinaldi**

16:50 A. Gloria, M. Martorelli, M. Richetta, R. De Santis, M. Catauro, CNR-IPCB

Design of engineered surfaces with tailored functional properties for biomedical applications

17:10 M. Tocci, L. Montesano, M. Gelfi, A. Pola, M.G. La Vecchia, University of Brescia

Evaluation of cavitation erosion resistance of coated metallic materials by ultrasonic cavitation testing facility

### **17:30 Close 1st part**



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**5 December**

**Chair M. Ricchetta**

9:30 G. Di Girolamo, ENEA

Thermally sprayed coatings for high temperature applications: microstructure and properties

9:50 C. Testani, E. Kosykh, D. Quintiliani, T. Di Giamberardino, J. Ejenstam, M. Pedemonte  
CALEF

Coating for high temperature liquid metal corrosion in the NEXTOWER project

10:10 Mirabile-Gattia, ENEA

Coatings for improved hydrogen storage materials

10:30 A. Masi, L. Della Seta, V. Mignozzi, S. Frangini, *DTE-PCU-SPCT*, *ENEA CR Casaccia*  
Composite spinel-LaFeO<sub>3</sub> perovskite coatings by molten carbonate chemical conversion of ferritic  
stainless steels for IT-SOFC applications

10:50 A. Domas, CEA

KET4CP Clean Production project

**11:10 Coffee Break**

**Chair T. Monetta**

11:40 F. Robusto, D. Croccolo, M. De Agostinis, S. Fini, G. Olmi, University of Bologna  
Wear behavior of an electrodeposited nickel coating on a zinc alloy

12:00 A. Mezzi, S. Kaciulis, E. Bolli, ISMN-CNR

Surface chemical investigations of hard and ceramic coatings

12:20 G. Di Domenico, E. Sbardella, M. Zarcone, Fondazione E. Amaldi

Pulsed Electron Deposition: an easy and suitable technique to ablate and deposit all solid material  
preserving the target stoichiometry in the deposited films

12:40 P. Proposito, L. Burratti, F. De Matteis, R. Francini, M. Casalbani, University of Rome  
"Tor Vergata"

Nanostructured dielectric coatings for solar cells

13:00 Maria Luisa Grilli, Anna Sytchkova, ENEA

Characteristics of radio frequency sputtered ITO and In-free transparent conductors.

13:20 G. Barbieri, ENEA

Conclusive remarks

13:30 **Close**