



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-LaFeO₃ 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 E. Sbardella, M. Zarcone, G. Di Domenico, Fondazione E. Amaldi

Pulsed Electron Deposition (PED) 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**