

Functional molecules on surfaces: production and spectro/microscopic characterization

DIP Staff: Andrea Giacomo Marrani and Simone Morpurgo

Studies on the reactivity of well-characterized surfaces towards molecular and redox species, covalently or supramolecularly linked, and characterized by laboratory techniques and photoemission spectroscopies excited by conventional sources and synchrotron radiation. OBJECTIVES: To induce and monitor specific properties of materials through surface treatment and functionalization. ACTIVITY: Measurements of composition and electronic structure of solids by XPS, UPS, synchrotron photoemission.

Microscopy/nanoscopy studies via AFM, STM, spectromicroscopy. Research in the field of materials.

ERC PE4_4 Surface science and nanostructures; PE5_6 New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles.

Latest Papers

1. **Andrea Giacomo Marrani, Robertino Zanoni, Ricardo S. Schrebler, and Enrique A. Dalchiele**

“Towards Graphene/Silicon Interface via Controlled Electrochemical Reduction of Graphene Oxide”
J. Phys. Chem. C., 121, pp. 5675-5683 (2017)

2. **M. Raimondo, F. Veronesi, G. Boveri, G. Guarini, A. Motta, R. Zanoni,**

“Superhydrophobic properties induced by sol-gel routes on copper surfaces”

Applied Surface Science Volume 422, 1022-1029 (2017)

3. **Luca Pellegrino, Rossana Cocchiola, Iolanda Francolini, Mariangela Lopreiato, Antonella Piozzi, Robertino Zanoni, Anna Scotto d’Abusco, Andrea Martinelli,** “Taurine grafting and collagen adsorption on PLLA films improve human primary chondrocyte adhesion and growth”

Colloids and Surfaces B: Biointerfaces, Volume 158, 643-649 (2017)

4. **Giovanni Fusco, Gero Göbel, Robertino Zanoni, Eckhart Kornejew, Gabriele Favero, Franco Mazzei, Fred Lisdat,** “Polymer-supported electron transfer of PQQ-dependent glucose dehydrogenase at carbon nanotubes modified by electropolymerized polythiophene copolymers”

Electrochimica Acta, Volume 248, 64-74 (2017)

5. **Matteo Bonomo, Danilo Dini, Andrea Giacomo Marrani, Robertino Zanoni**

“X-ray photoelectron spectroscopy investigation of nanoporous NiO electrodes sensitized with Erythrosine B”

Colloids and Surfaces A: Physicochem. Eng. Aspects, Volume 532, 464-471 (2017)

6. **Marrani, A.G. Coico, A.C., Giacco, D., Zanoni, R., Scaramuzza, F.A., Schrebler, R., Dini, D. Bonomo, M., Dalchiele, E.A.**

Integration of graphene onto silicon through electrochemical reduction of graphene oxide layers in non-aqueous medium

Applied Surface Science, Volume 445, Pages 404-414 (2018)

7. **Fusco, Giovanni; Göbel, Gero; Zanoni, Robertino; Bracciale, Maria Paola; Favero, Gabriele; Mazzei, Franco; Lisdat, Fred**

Aqueous polythiophene electrosynthesis: A new route to an efficient coupling of PQQ-dependent glucose dehydrogenase for sensing and bioenergetic applications

Biosensors and Bioelectronics, volume 112 pp: 8-17 (2018)

8. **F. Possanza, F. Limosani, P. Tagliatesta, R. Zanoni, M. Scarselli, E. Ciotta, R. Pizzoferrato,** “Functionalization of Carbon Spheres with a Porphyrin-Ferrocene Dyad”

ChemPhysChem 2018, 19, 2243.

9. **Pier Giorgio Schiavi, Luca Farina, Pietro Altimari, Robertino Zanoni, Maria Assunta Navarra, Robertino Zanoni, Stefania Panero, Francesca Pagnanelli**

“A versatile electrochemical method to synthesize Co-CoO core-shell nanowires anodes for lithium ion batteries with superior stability and rate capability”

Electrochimica Acta Volume 290, 10 November 2018, Pages 347-355