

## NIS colloquium

# "Advances in biomaterials: combining simulations and experiments"

**Torino, 28-29 November 2013**

*Aula Magna del Dipartimento di Scienze della Vita e Biologia dei Sistemi  
via Accademia Albertina 13, Torino*

Scientific and Local Organizing Committee: V. Aina, G. Alberto, M. Corno  
**Dipartimento di Chimica and NIS, Università degli Studi di Torino**

The attendance to the Colloquium is free, participants are kindly requested to send an e-mail to [valentina.aina@unito.it](mailto:valentina.aina@unito.it) or [gabriele.alberto@unito.it](mailto:gabriele.alberto@unito.it) or [marta.corno@unito.it](mailto:marta.corno@unito.it)

### Thursday 28<sup>th</sup> November, 2013

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|-------------|----|---|
| 14:00       |    | <b>Marta Corno</b> - Chairperson - Department of Chemistry and NIS, University of Torino  |
| 14:10-15:00 | PL | <b>Nora De Leeuw</b> , Department of Chemistry, University College London<br><i>Computer modelling of biomaterials: Hydroxyapatite, Collagen and Bioglasses</i>   |
| 15:00-15:20 | OC | <b>Chiara Vitale Brovarone</b> , Applied Science and Technology Department, Polytechnic of Torino<br><i>Smart monoblock acetabular cup with bioactive trabecular-like coating</i>   |
| 15:20-15:40 | OC | <b>Alessandra Fiorio Pla</b> , Department of Life Science and System Biology, University of Torino<br><i>Bioactive glasses doped with Zn and Cu ions: endothelial cell interaction and potential bacteriostatic properties</i>  |
| 15:40-16:00 | OC | <b>Enrico Berardo</b> , Department of Chemistry, University College London<br><i>Gaining insights into different bioactivity mechanisms by DFT modeling of soda-lime phospho-silicate surfaces</i>                              |
| 16:00-16:30 |    | <i>Coffee break</i>   |
| 16:30-17:00 | KL | <b>Gigliola Lusvardi</b> , Department of Chemistry and Geological Science, University of Modena and Reggio Emilia<br><i>Calcium phosphate based biomaterials: solid state characterization</i>                                  |
| 17:00-17:20 | OC | <b>Dominique Costa</b> , Ecole Nationale Supérieure de Chimie de Paris, Chimie-ParisTech<br><i>Interfaces Silica/water, AlOOH/water and adsorption of small biomolecules studied with Born Oppenheimer Molecular Dynamics</i>   |
| 17:20-17:40 | OC | <b>Maryline Moreno</b> , Centre de Recherche Public - Gabriel Lippmann, Belvaux<br><i>Atmospheric plasma deposition of functionalized thin film as a platform for biomolecule immobilization</i>                                |
| 17:40-18:00 | OC | <b>Cristina Pavan</b> , Department of Chemistry, NIS and Interdepartmental Centre Scansetti, University of Torino<br><i>The haemolysis test as a simple tool to investigate the interaction between membranes and materials</i> |
| 18:00-18:20 | OC | <b>Gloria Berlier</b> , Department of Chemistry and NIS, University of Torino<br><i>Mesoporous silica nanoparticles as versatile platforms for pH responsive applications</i>   |
| 20:00       |    | <b>Social dinner</b>  |

## Friday 29<sup>th</sup> November, 2013

- 09:00 **Valentina Aina** - Chairperson - Department of Chemistry and NIS, University of Torino
- 09:10-10:00 PL **Antonio Salinas**, Department of Inorganic and Bioinorganic Chemistry, University Complutense of Madrid  
*3D Bioceramic scaffolds for bone tissue engineering*
- 10:00-10:20 OC **Massimo Delle Piane**, Department of Chemistry and NIS, University of Torino  
*Mesoporous Silica for Drug Delivery: a quantum-mechanical simulation*
- 10:20-10:40 OC **Claudio Magistris**, Department of Chemistry and NIS, University of Torino  
*pH-Sensitive conjugation of organic molecules on bioactive glasses for the development of stimuli-responsive biomaterials*
- 10:45-11:05 *Coffee break*
- 11:05-11:35 KL **Michela Signoretto**, Dept. of Molecular Sciences and Nanosystems Ca' Foscari - University of Venice  
*Innovative Organic/Inorganic hybrid nanomaterials for drug delivery systems*
- 11:35-11:55 OC **Giuseppina Raffaini**, Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Polytechnic of Milano  
*Protein adsorption on the TiO<sub>2</sub> polymorphs and on CNT at different curvature: a molecular modeling study*
- 11:55-12:15 OC **Barbara Onida**, Applied Science and Technology Department, Polytechnic of Torino  
*Ordered Mesoporous Silicas for drug delivery in dermatological applications*
- 12:15-12:35 OC **Gianluca Malavasi**, Department of Chemistry and Geological Science, University of Modena and Reggio Emilia  
*Bioactive glasses for a "smart" release*
- Lunch**
- 14:00 **Gabriele Alberto** - Chairperson - Department of Chemistry and NIS, University of Torino
- 14:10-15:00 PL **Michele Iafisco**, National Research Council (CNR), Institute of Science and Technology for Ceramics (ISTEC), Faenza  
*Biomimetic apatite nanocrystals: overview of their preparation, characterization and applications*
- 15:00-15:30 KL **Alfonso Pedone**, Department of Chemistry and Geological Science, University of Modena and Reggio Emilia  
*Computational NMR spectroscopy applied to bioactive glasses*
- 15:30-16:00 *Coffee break*
- 16:00-16:20 OC **Federico Catalano**, Department of Chemistry and NIS, University of Torino  
*Protein adsorption on engineered silica nanoparticles, spectroscopic investigation of the interface events and their influence in cell uptake*
- 16:20-16:40 OC **Davide Lovisolo**, Department of Life Science and System Biology, University of Torino  
*A biophysical investigation of the interaction between fluorescent silica nanoparticles and neuronal cells*
- 16:40-17:00 OC **Lisa Accomasso**, Department of Clinical and Biological Sciences, University of Torino  
*Fluorescent silica nanoparticles for stem cells imaging in regenerative medicine*

PL = plenary lecture, KL = keynote lecture and OC = oral communication