



CENTRO DI BIOMINERALOGIA  
CRISTALLOGRAFIA E  
BIOMATERIALI  
UNIVERSITÀ DI BOLOGNA

# SCANNING PROBE MICROSCOPY AND SPECTROSCOPY FOR MINERAL, BIOLOGICAL AND MATERIAL SCIENCES

July 10, 2015 – Bologna

**Dept. of Biological, Geological and Environmental Sciences**  
**University of Bologna, Italy**  
**Aula Magna di Anatomia Comparata, Via Selmi 3, (2° Piano) - Bologna**

## PROGRAMME

### 10.20-10.40 Welcome and opening address

Prof. Alessandro Gargini (Head of Dept. BiGeA-UniBo); Giovanni Valdrè (BiGeA-UniBo)

- 1) 10.40-11.00 Andrea Alessandrini (UniMoRe) - Atomic force microscopy and spectroscopy of ternary lipid mixtures: phase separation and critical phenomena
- 2) 11.00-11.20 Andrea Raspadori, Valentina Vignali, Anna Murello, Giampaolo Zuccheri, Giuseppe Legname, Bruno Samorì (UniBo) - Conformational equilibria of the prion protein characterized with single molecule force spectroscopy
- 3) 11.20-11.40 Federico Ferrarese Lupi, Giulia Aprile, Luca Boarino, Tommaso Jacopo Giammaria, Michele Laus, Giampaolo Zuccheri, Michele Perego (UniBo) - Thickness dependence of PS-b-PMMA diblock copolymer morphology inside periodic trenches
- 4) 11.40-12.00 Marco Brucale, Cristiano Albonetti, Francesco Valle (ISMN-CNR, Roma e Bologna) – Atomic force microscopy: quantitative nanomechanics
- 5) 12.00-12.20 Massimo Marcaccio, Stefania Rapino (Ciamician-UniBo) - Functional imaging and microstructuring by SECM in biomedical and material science
- 6) 12.20-12.40 Andrea Liscio, K.Kouroupis-Agalou, Vincenzo Palermo (ISOF-CNR) – Breaking 2D materials: a multi-scale statistical analysis of graphene oxide fragmentation
- 7) 12.40-13.00 Daniele Moro, Gianfranco Ulian, Giovanni Valdrè (BiGeA-UniBo) – Cross-correlated SPM and quantum mechanics simulations of single molecule interaction with mineral surfaces

### 13.00-14.40 Lunch Break

### 14.40-16.20 Innovations in Scanning Probe Microscopy: Contributions from the companies

- 14.40-15.05 Bruker – SPM Challenges: High resolution topography, chemical ID and mechanical mapping  
15.05-15.30 Gambetti (Park) – High vacuum SPM and new applicative softwares  
15-30-15.55 Keysight Technologies – Scanning Microwave Microscopy  
15.55-16.20 Pra.Ma. (NT-MTD) – Hybrid mode mechanical characterization in SPM  
Biofotonica (JPK) – Informative material

### 16.20 Concluding remarks – Coffee Break

La partecipazione al workshop è gratuita ed è aperta a tutti  
(laureandi, dottorandi, ricercatori, tecnici, professionisti, ecc.)

**Per registrarsi al Workshop inviare una mail di conferma a: [giovanni.valdre@unibo.it](mailto:giovanni.valdre@unibo.it)**