

PROGRAM – 2nd WORKSHOP

Associated Laboratory “Institute of Nanoscience and Nanotechnology” (IN)
20 October 2009

- 9:00 *Arrival - Auditorium of Complexo Interdisciplinar (IST)*
- 9:30 Welcome and Introduction – Paulo Freitas
- 9:45 **Tutorial 1:** “Magnetisation dynamics in nanometric systems”, David Schmool, IFIMUP
- 10:30 Coffee Break
- 11:00 **Tutorial 2:** “Overview on Confocal/Multiphoton Microscopy: Steady-State and Time Resolved Techniques”, Ermelinda Maços, CQFM
- 11:45 **Tutorial 3:** “Microfabrication and Nanofabrication”, Ricardo Ferreira, INESC-MN
- 12:30 Lunch (*Self-Service Restaurant of the Bar Civil – you should get a ticket*)
- 14:00 **Poster Session** + coffee (*Salão Nobre, IST*)
14:00 – 15:00 Odd numbered posters
15:00 – 16:00 Even numbered posters
- 16:00 **Topical Session 1:** Nanomaterials and Advanced Characterization
(Moderators: José Gaspar Martinho and João Pedro Araujo)
Complexo Interdisciplinar
- 17:00 **Topical Session 2:** Applications to Nanoelectronics, Biosensing and Biomedical Devices
(Moderators: Paulo Freitas and João Pedro Conde)
Complexo Interdisciplinar
- 18:00 Closing Session
- 18:30 Workshop closes

POSTERS

2nd WORKSHOP

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20 October 2009

INESC-MN

Spintronics and Biosystems group

1. **“Measuring action potentials in mouse brain slices using local magnetoresistive probes”**, José Pedro Amaral, J.Loureiro, A.Sebastiao¹, P.P.Freitas
2. **“Towards a cell magnetoresistive cytometer: detecting beads moving in microfluidic channels”**, Joana Loureiro, J.Germano², C.Fermon³, S.Cardoso, P.P.Freitas
3. **“Femtomolar detection capability in a magnetoresistive bimolecular recognition platform”**, Verónica Martins, F.Cardoso, J.Germano², M.Pieadade², L.Fonseca⁴, S.Cardoso, P.P.Freitas
4. **“Nanopillar Device Fabrication”**, Rita J.Macedo, R.Ferreira, S. Cardoso
5. **“Spin Transfer Switching in MgO based MTJ nanopillars”**, JieYang, R.J. Macedo, R.Ferreira, S.Cardoso
6. **“Current Driven Spin Nano Oscillators”**, Ricardo Ferreira, S.Cardoso, Anne Rose⁵, C.Chappert⁵
7. **“Field sensors using MgO based MTJs”**, Jiangwei Cao and P.P.Freitas
8. **“Monitoring a MEMS read head actuator using spin valve sensors”**, Jérôme Borme and P.P.Freitas
9. **“Single molecule manipulation and detection”**, Rui Chaves, D.Bensimon⁶, P.P.Freitas

Collaborators:

¹IMM (U. Lisboa)

²INESC ID

³CEA-Paris

⁴IBB/BERG (IST)

⁵IEF, (Paris)

⁶ENS (Paris)

MEMS and BioMEMS group

10. **“Electrical detection of biomolecules in nanochannels”**, Diogo Martins, V. Chu, D.M.F. Prazeres*, J.P. Conde
11. **“Cell-based Lab-on-a-chip Technologies”**, Milene Santos, G. Monteiro*, V. Chu, J.P. Conde
12. **“Miniaturized immunoassays with integrated detection”**, Pedro Novo, Ana Teresa Pereira, D.M.F. Prazeres*, V. Chu, J.P. Conde
13. **“Micro-fabrication of 3D structures based on amorphous silicon and polymeric materials for MEMS”**, Pedro Sousa, V. Chu, J.P. Conde
14. **“Thin Silicon MEMS for the detection of bio-molecules”**, Samadhan. B. Patil, D.M.F. Prazeres*, V. Chu, J.P. Conde

Collaborators:

*BERG/IBB, IST

CQFM – IST

Nanomaterials, polymers and biosystems group

15. **“Biological Fluorescence: Membrane domains and lipid-protein interaction”**, Bruno Castro, Ana Coutinho, Luís Loura, Ana Melo, Sandra Pinto, Liana Silva, Manuel Prieto
16. **“Multifunctional Nanoparticles for Photodynamic Therapy”**, Sofia Martins, Carlos Baleizão, and Mário N. Berberan-Santos.
17. **“Fluorescence of Fullerenes: From Fundamentals to Sensing Applications”**, Susana Nascimento, Carlos Baleizão, and Mário N. Berberan-Santos.
18. **“Polymer Nanoparticles”**, Susana Piçarra, Gema Marcelo, Vera Augusto, Tânia Ribeiro, Leila Moura, Carlos Baleizao Jose Manuel Gaspar Martinho, Jose Paulo Farinha
19. **“Polymers with Controlled Architecture”**, Mariana Beija, Telmo Prazeres, Gema Marcelo, Jose Paulo Farinha, Jose Manuel Gaspar Martinho
20. **“Organic Research From the Organic Synthesis Laboratory at CQFM “**, C. Afonso, Raquel F.M. Frade, L. Frija, L. Gomes, K. Guerra, P. Kulkarni, C. Monteiro, J.P. C. N. M. Nunes, C. A. B. Rodrigues, A. Rosatella, A. Trindade
21. **“New Chiral and Magnetic Ionic Liquids”**, C. Afonso, C. Marques, A. Rosatella

Surfaces, interfaces and molecular dynamics group

22. **“Surface Photochemistry: Alloxazine within nanochannels of Na⁺ and H⁺ ZSM-5 Zeolites”**, Luís Filipe Vieira Ferreira, Isabel L. Ferreira Machado, Anabela S. Oliveira, Alexandra I. Costa, A.M. Botelho do Rego, E. Sikorska, M. Sikorski
23. **“Surface Photochemistry: Benzophenone adsorbed within Hydroxyapatites”**, Anabela S. Oliveira, Andreia Costa, Erica Torres, Elena Mavropoulos, Alexandre M. Rossi, Josino C. Moreira, Luís Filipe Vieira Ferreira
24. **“Surface Photochemistry: Diffuse Reflectance Studies of Biacetyl Inclusion Within Calix[n]arenes (n = 4, 6 and 8)”**, Isabel Ferreira Machado, Luís F. Vieira Ferreira
25. **“Immobilization of silver nanoparticles on cellulose surfaces”**, A.M. Botelho do Rego, A. M. Ferraria.
26. **“Nanostructured Materials by the Sol-Gel Process: Encapsulation in Sol-Gel Silica Matrices”**, Luis Manuel F. Lopes, Alexandra Fidalgo, Ana Rosa Garcia, Laura M. Ilharco
27. **“Nanochemistry on Metal Surfaces: Surface reactivity in model catalytic systems”**, Ana Rosa Garcia, Ricardo Brito de Barros, Laura M. Ilharco
28. **“Nanostructured Silica/Polymer Subcritical Aerogels”**, Alexandra Fidalgo, José Paulo Farinha, José Manuel Gaspar Martinho, Laura M. Ilharco

IFIMUP – U. Porto

Polarizable materials and magnetoelectric nanostructures group

29. **“Synthesis and characterization of hydroxyapatite nanotubes using CTAB as template”**, J. Coelho, J. Agostinho Moreira, F. Monteiro
30. **“Dipolar relaxation process in Eu_{1-x}Lu_xMnO₃ ceramics”**, J. Oliveira, J. Agostinho Moreira, W. S. Ferreira, A. Almeida, P. B. Tavares, S. Vilela
31. **“Rare-earth manganites thin films prepared by a novel chemical solution method”**, Y. Romaguera Barcelay, G. Gonzáles Aguilar, J Agostinho Moreira, A. Almeida, M. R. Chaves, J. Pérez de la Cruz
32. **“Relaxation and lattice dynamics of potassium tantalate based ceramics”**, Alexander Tkach, A. Espinha, A. Almeida, J. Agostinho Moreira, and M. R. Chaves , Paula M. Vilarinho
33. **“Coupling between phonons and magnetic excitations in orthorhombic Eu_{1-x}Y_xMnO₃”**, J. Agostinho Moreira, A. Almeida, W. S. Ferreira, M. R. Chaves, J. Kreisel, S. M. F. Vilela, P. B. Tavares

34. **“Organic polarizable materials for applications in emerging Technologies”**, A. Espinha, S. Patrício, A. Almeida, C. Freire, J. Agostinho Moreira, C. T. Sousa, J. P. Araújo
35. **“Spin-phonon coupling and magnetoelectric properties: EuMnO_3 versus GdMnO_3 ”**, W. S. Ferreira, J. Agostinho Moreira, A. Almeida, M. R. Chaves, J. P. Araújo, J. B. Oliveira, J. M. Machado da Silva, M. A. Sá, T. M. Mendonça, P. Simeão Carvalho, P. B. Tavares

Ultrafast laser and magnetodynamic spectroscopies group

36. **“Ultrafast nonlinear optics at IFIMUP-IN: new tools for probing matter at unprecedented scales”** Helder Crespo
37. **“High frequency studies of arrays of submicron magnetic dots”** Gleb Kakazei
38. **“Aspects of static and dynamic properties of exchange spring magnets”** David Schmool
39. **“Generation and application of terahertz pulses”**, Luis Bernardo

Multifunctional magnetic materials and nanostructures group

40. **“Beyond MgO tunnel junctions: What' s next for Spintronics?”** J. Ventura, J. M., Teixeira, I. Trindade, H. G. Silva, Yu. G. Pogorelov, R. Lusche, J. P. Araujo, J. B. Sousa, P. Wisniowski*, R. Ferreira*, A. Veloso*, Z. Zhang*, Y. Liu*, S. Cardoso* and P. P. Freitas*.
41. **“Nanoporous alumina templates @ IFIMUP”** A. Apolinario, C. T. Sousa, D. C. Leitao, L. M. Custodio, M. P. Proença, P. Damas, J. Ventura, J. B. Sousa, C. Nunes², M. Lúcio², S. Reis², J. L. F. C. Lima², A. M. L. Lopes³, J. G. Correia², K. R. Pirota⁶, M. Vazquez⁶, J. P. Araujo
42. **“New magnetic materials for localized cooling and Mag-MEMS applications”**, A. M. Pereira, J. S. Amaral¹, G. Oliveira³, J. B. Silva, M. S. Reis¹, V. S. Amaral¹, J.B. Sousa, P. Algarabel⁵, L. Morellon⁴, C. Magen⁴, M. R. Ibarra⁴, and J.P. Araújo
43. **“Magnetoresistance signatures in arrays of magnetic nanoholes”**:D. C. Leitao, A. Apolinario, C. Sousa, J. Ventura, K. Pirota⁶, M. Vazquez⁶, J. P. Araujo
44. **“Exchange Bias in Ultra-thin MnIr/CoFe bilayers”**, R. Lusche, J. Ventura, J. M. Teixeira, J.S. Amaral¹, J. P. Araujo, J.B. Sousa, R. Macedo*, S. Cardoso*, P.P. Freitas*

Collaborators:

*INESC MN

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