GIDRM
Gruppo Italiano Discussione Risonanze Magnetiche

STELAR

Università degli Studi del Piemonte Orientale *"Amedeo Avogadro"*

NMR Relaxometry: Principles and Applications

Lunedì 7 Luglio 2014 - Dipartimento DISIT - Viale Teresa Michel 11, 15121 ***Alessandria***

Program

9.15-9.45 *Registration*

9.45-10.00 *Opening*

10.00-10.30 **G. Ferrante** (*Stelar*)
Fast Field Cycling NMR relaxometry: experimental methodology and instrumentation

10.30-11-00 **M. Liberi** (*Bruker Italia S.r.l.*)
TD-NMR applications for Quality Control in industry

11.00-11.30 **P. Conte** (*Univ. Palermo)*
Agro-environmental applications of field-cycling relaxometry

11.50-12.20 **G. Parigi** (*Univ. Firenze*)
Relaxometry of paramagnetic systems: from radicals for solution DNP to paramagnetic nanoparticles

12.20-12.50 **M. Botta** (*UNIPMN*)
Fast Field Cycling relaxometry and metal-based MRI probes

12.50-14.00 *Buffet lunch*

14.00-14.30 **A. Lascialfari** (*Univ. Milano)*
Magnetic nanoparticles for biomedical applications

14.30-15.00 **M. Geppi** (*Univ. Pisa*)
Insights into the motions of molecules in the solid state by high- and low-resolution nuclear relaxation measurements

15.00-15.30 **S. Geninatti Crich** (U*niv. Torino*)
R-ELISA: a quantitative relaxometric version of the ELISA test for the measurement of cell surface biomarkers based on the water proton T_1 measurements

15.30-16.00 **M. Fasano** (*Univ. Insubria*)
Conformational dynamics and ligand binding in paramagnetic metalloproteins - A NMRD view

16.00-16.20 **S. Baroni** (*Univ. Torino*)
Relaxometric application in food chemistry

16.20-16.40 **S. Bubici** (*Stelar*)
Multi-exponential inversion methods and software tools

NMR field cycling relaxometry is well-established tool to monitor slow dynamics in a variety of systems. The relaxation rate depends strongly on the mobility of the microscopic environment and the strength of the applied magnetic field. Hence, the relaxation rate as a function of the magnetic field strength (NMRD profile) represents a fingerprint of the microscopic dynamics. Uses of NMRD include: characterization of MRI contrast agents, liquid crystals and lipid bilayers, polymer dynamics, porous media and adsorption phenomena at liquid/solid interfaces, foods, nanostructured materials. The workshop aims to illustrate the basic principles of the theory and instrumentation and discuss the main applications in the study of a wide range of systems.

Information & registration

The workshop is sponsored by GIDRM and will take place in the room 102 at the Department of Science and Technological Innovation (DISIT), Alessandria.
The registration fee, also covering the costs of a buffet lunch, is of *40 €* for non-GIDRM applicants and of *30 €* for GIDRM applicants. The 40 euros fee includes the annual subscription to GIDRM. The deadline for registration is **June 25, 2014.** For registration visit the GIDRM website www.gidrm.org.
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