



Conference on NMR Relaxometry and Related Methods

29/01/2018 – 31/01/2018

Turin (Italy)

Monday, 29th January

8⁰⁰ – 9⁰⁰

Registration

9⁰⁰ – 9⁴⁰

Opening and Administrative Information

9⁴⁰ – 10⁰⁰

Introduction to NMR Relaxometry

Danuta Kruk

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

Session I: Material Science

10⁰⁰ – 10³⁰

NMR Relaxometry and Nano-Systems, Dynamics of Solvents and Surface Adsorbed Species

Dermot Brougham

University College Dublin (Dublin, Ireland)

10³⁰ – 11⁰⁰

Effect of The Hollow Topology on the Surface Spin Dynamics in γ -Fe₂O₃ MNPs

Martina Basini

Dipartimento di Fisica, Università degli studi di Milano (Milano, Italy)

11⁰⁰ – 11³⁰

FFC Relaxometry, a Powerful Tool to study Meso-Scale Dynamics of Confined Fluids

Dominique Petit

CNRS and Université de Montpellier (Montpellier Cedex 5, France)

11³⁰ – 12⁰⁰

Coffee Break



Session II: Complementary Methods I

- 12⁰⁰ – 12⁴⁵ *Order in Disorder - Structural (and Other) Properties of Metallic Glasses*
Bogdan Idzikowski
Institute of Molecular Physics, Polish Academy of Sciences (Poznań, Poland)
- 12⁴⁵ – 13¹⁵ *Field-cycling NMR Combined with EPR and DNP for Studying the Wetting Behaviour of Liquids in Aged Rocks*
Siegfried Stapf
TU Ilmenau (Ilmenau, Germany)
- 13¹⁵ – 14⁴⁵ **Lunch**

Session III: Theory and other exotica

- 14⁴⁵ – 15¹⁵ *A Comprehensive Approach to Quadrupole Relaxation Enhancement*
Danuta Kruk
University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)
- 15¹⁵ – 15⁴⁵ *²⁰⁹Bi Quadrupole Relaxation Enhancement in Solids*
Elżbieta Masiewicz
University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)
- 15⁴⁵ – 16¹⁵ *Quantum Chemistry Property Surface and Machine Learning in Magnetic Resonance Relaxation Modelling*
Pär Hakansson
University of Oulu (Oulu, Finland)
- 16¹⁵ – 16⁴⁵ *Nuclear Spin Noise and Relaxation*
Norbert Müller
Faculty of Engineering and Natural Sciences (Linz, Austria)
- 16⁴⁵ – 17¹⁵ **Coffee Break**
- 17¹⁵ – 18³⁰ **Poster Session**
- 18³⁰ – 19³⁰ **“Stellar time”**
-



Tuesday 30th January

Section IV: Contrast Agents

- 9⁰⁰ – 9³⁰ ***Second- and Outer-Sphere Effects in MRI Contrast Agents***
Giacomo PARIGI
University of Florence (Sesto Fiorentino, Italy)
Consorzio Interuniversitario Risonanze Magnetiche Metallo Proteine (CIRMMP) (Sesto Fiorentino, Italy)
- 9³⁰ – 10⁰⁰ ***Relaxometric Characterization of Potential Mn(II)-Based MRI Contrast Agents***
Carlos PLATAS IGLESIAS
Universidade da Coruña (A Coruña, Spain)
- 10⁰⁰ – 10²⁰ ***Rational Design of Efficient Contrast Agents for Molecular Magnetic Resonance Imaging***
Celia BONNET
CNRS (Orleans, France)
- 10²⁰ – 10⁴⁰ ***Improving The Safety of the Metal Based Relaxation Agents***
Gyula Tircso
University of Debrecen (Debrecen, Hungary)
- 10⁴⁰ – 11⁰⁰ ***Hypersensitive Systems for T₁ MR Imaging: A Relaxometric Study of the Structuration of the Water Pocket Around Gd Chelates***
Celine Henoumont
UMONS, NMR & Molecular Imaging Laboratory (Mons, Belgium)
- 11⁰⁰ – 11³⁰ **Coffee break**

Section V: Application of NMR Relaxometry to Food and similar systems

- 11³⁰ – 12⁰⁰ ***NMR-Based Metabolomics of Graviera Cheese. Monitoring Maturation Through High Resolution and Low Field Relaxometry/Diffusometry NMR Experiments***
Apostolos SPYROS
University of Crete (Heraklion Crete, Greece)
- 12⁰⁰ – 12³⁰ ***Applications of TD-NMR in Colloidal Food Systems***
Mecit Halil ÖZTOP
Middle East Technical University (Ankara, Turkey)



12³⁰ – 13⁰⁰

FFC NMR Relaxometry Studies on Hyaluronan-Based Dermal Fillers and proteins

Paweł Rochowski

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

13.⁰⁰ – 14.³⁰

Lunch

Section VI: Contrast Agents and Quadrupole Relaxation Enhancement

14³⁰ – 15⁰⁰

Quadrupole Enhanced Relaxation for Potential MRI Contrast Agents: Aspects of Structural Order in ²⁰⁹Bi Containing Nanoparticles

Hermann Scharfetter

Graz University of Technology (Graz, Austria)

15⁰⁰ – 15²⁰

The Many Shapes of Nuclear Quadrupole Relaxation Rate Patterns in Selected Bi-Aryl-Compounds

Christian Gösweiner

Graz University of Technology (Graz, Austria)

15²⁰ – 15⁴⁰

High Field FFC-MRI: System Validation with Iron Oxide Magnetic Nanoparticles

Markus Bödenler

Graz University of Technology (Graz, Austria)

15⁴⁰ – 16⁰⁰

Relaxation in ²⁰⁹Bi Containing Systems

Evrin Umut

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

16⁰⁰ – 16³⁰

Coffee break

16³⁰ – 17⁰⁰

Tutorial: FitLike: A Tool for The Quick Analysis of FFC-NMR Data

Lionel Broche

University of Aberdeen (Aberdeen, United Kingdom)

Section VII: Tumor studies

17⁰⁰ – 17³⁰

Evidence for The Role of Intracellular Water Lifetime as a Tumour Biomarker by in Vivo Field-Cycling Relaxometry

Silvio Aime

University of Torino (Torino, Italy)



17³⁰ – 18⁰⁰

In Vivo Measurements of T_1 -Dispersion Maps in Kidney Tumor Mouse Models Using FFC-MRI Around 1.5 T

Nicolas Chanet

Imagerie par Résonance Magnétique Médicale et Multi-Modalités IR4M (Orsay cedex, France)

18⁰⁰ – 18³⁰

Exploring Mesoporous Silica Nanoparticles as Multimodal Imaging and Theranostic Probes

Lorenzo Tei

University of Eastern Piedmont in Alessandria (Alessandria, Italy)

18³⁰ – 19⁰⁰

pH-dependency: Improved Angiomri Contrast Agents and a Brief Insight on ³¹P-MRS

Peter Urbanovsky

Charles University (Prague, Czech Republic)



Wednesday 31th January

Section VIII: Experimental studies

9⁰⁰ – 9³⁰ *Spatially-Resolved Relaxometric Mapping with an Inhomogeneous Transmit-Receive Coil Designed for Mouse in a Fast-Field Cycling Magnetic Resonance Imaging Insert*

Ludovic DE ROCHEFORT

Aix-Marseille Université (Marseille, France); CNRS (Marseille, France)

9³⁰ – 10⁰⁰ *Methods for In-Vivo Acquisition of NMRD Profiles by FFC-MRI*

Lionel Broche

University of Aberdeen (Aberdeen, United Kingdom)

10⁰⁰ – 10³⁰ *Towards a Model-Based NMR Lock for Fast Field Cycling NMR*

Giacomo Galuppini

Identification and Control of Dynamic Systems Laboratory, University of Pavia (Pavia, Italy)

10³⁰ – 11⁰⁰ **Coffee Break**

Section IX: Chemistry of nanosystems

11⁰⁰ – 11³⁰ *Study of The Transformation of Ferrihydrite to Goethite Nanoparticles*

Anne-Laure Rollet

Laboratoire PHENIX (UMR 8234 -CNRS/UPMC) (Paris Cedex 5, France)

11³⁰ – 12⁰⁰ *Enhancing MRI Signal Through Nanoparticle Surface Chemistry*

Graeme J. Stasiuk

University of Hull (Hull, United Kingdom)



Session X: Complementary Methods II

12⁰⁰ – 12³⁰ *Joint Studies of Paramagnetic Systems by Means of ESR Spectroscopy and NMR Relaxometry*

Danuta Kruk

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

12³⁰ – 13⁰⁰ *Charactrizing of Mesopores Modification in Metal-Organic Framework by Polymer Incorporation – NMR and Related Approaches*

Jan Lang

Charles University in Prague (Prague, Czech Republic)

13⁰⁰ – 14³⁰ **Lunch**

Session XI: Diseases and NMR Relaxometry

14³⁰ – 14⁵⁰ *T₁ and T₂ to Assess Membrane Water Permeability and Hemozoin Generation in Plasmodium Falciparum Infected Red Blood Cells*

Giuseppe Ferrauto

University of Torino (Torino, Italy)

14⁵⁰ – 15¹⁰ *Stormorken Syndrome Disease Protein Studied by Means of NMR and Relaxometry*

Petr Rathner

Johannes Kepler University Linz (Linz, Austria)

Session XII: Ionic and molecular Systems

15¹⁰ – 15³⁰ *Molecular Dynamics in a "de Vries" Liquid Crystal: ¹H NMR Relaxometric Study*

Tomaž Apih

J. Stefan Institute (Ljubljana, Slovenia)

15.³⁰-15.⁵⁰ *¹H FC NMR Relaxometry Study on Alcohols*

Max Flämig

University of Bayreuth (Bayreuth, Germany)

15⁵⁰ – 16¹⁰ *Study Of Room Temperature Ionic Liquids Containing Rare Earth Ions By EXAFS and NMR Relaxometry*



Guillaume MERIGUET

Lab. PHENIX – UPMC Sorbonne Universités/CNRS (Paris, France)

16¹⁰ – 16³⁰

Dynamics of Ionic Liquid in Bulk and 3D Confinement Investigated by Means of ¹H NMR relaxometry

Milosz Wojciechowski

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

16³⁰ – 17⁰⁰

Coffee Break

Session XIII – Material Science II

17⁰⁰ – 17³⁰

Monitoring the Influence of Different Parameters on the Hydration Process of Cement Paste Via FFC NMR relaxometry

Ioan Ardelean

Technical University of Cluj-Napoca (Cluj-Napoca, Romania)

17³⁰ – 17⁵⁰

¹H NMR Relaxometric Study of Novel Layered Clays containing in The Structure Gd(III) and Eu(III) Ions

Stefano Marchesi

University of Eastern Piedmont in Alessandria (Alessandria, Italy)

17⁵⁰ – 18¹⁰

Revealing The Influence of Silica Fume and Organosilane On the Porous Structure of Cement Paste Using ¹H NMR Relaxometry in Low Fields

Andrea Cretu

TU Ilmenau (Ilmenau, Germany)

Technical University of Cluj-Napoca (Cluj-Napoca, Romania)

18¹⁰ – 18⁴⁰

Quadrupolar Relaxation Effects as Seen by Field-Cycling NMR Relaxometry – An Example of [14/15NH₂(CH₃)₂]₃Sb₂Cl₉ (DMACA)

Małgorzata Florek- Wojciechowska

University of Warmia and Mazury in Olsztyn (Olsztyn, Poland)

18⁴⁰ – 19⁰⁰

Dynamics of Dimethyl Butanols in Liquid, Supercooled Liquid, and Orientationally Disordered Crystalline Phases Studied by ¹H FFC NMR Relaxometry

Elisa Carignani

University of Pisa (Pisa, Italy)



Posters Session

In-gel Magnetic Nanoparticles: Brownian Relaxation Contribution to The Longitudinal Relaxation Rate of Water Protons

Matteo Avolio

University of Pavia (Pavia, Italy)

Effects of Coating On Transversal and Longitudinal Nuclear Magnetic Resonance Relaxivity

Francesca Brero

University of Pavia (Pavia, Italy)

Low-Field NMR Studies of Water, Cyclohexane and Hexane Interaction with The Surface of Mesoporous Carbon Xerogels

Calin Cadar

Technical University of Cluj-Napoca (Cluj-Napoca, Romania)

Monitoring The Ageing of the Motor Oil Using Low Field NMR Relaxometry

Manuela Codruta Badea

Technical University of Cluj-Napoca (Cluj-Napoca, Romania)

A New Method for The Relaxometric Assessment of Intestinal Permeability Through the Oral Administration of MRI Contrast Agents

Eliana Gianolio

University of Torino (Torino, Italy)

Acquisition of NMRD Profiles for Early Diagnosis and Phenotyping of Breast Cancer in NeuT Murine Models

Enza Di Gregorio

University of Torino (Torino, Italy)

Polyacrylamide Nanoparticles: A Conjugatable Platform for Use in The Diagnosis and Treatment of Cancer

Steven Yap

University of Hull (Hull, United Kingdom)

Development of High Contrast Multimodal Imaging Agents

Mitchell Clarke

University of Hull (Hull, United Kingdom)

FFC-NMRD Profiles of Tumour Cells as A Diagnostic Tool for Biomedical Applications

Maria Rosaria Ruggiero

University of Turin (Turin, Italy)



Relaxivity of ϵ -Fe_{2-x}Al_xO₃ Nanoparticles: A Complex Study

Lenka Kubickova

Charles University in Prague (Praha, Czech Republic)

Developing High Field MRI Contrast Agents by Tuning The Rotational Dynamics: Bisoqua Gdaazta-Based Dendrimers

Fabio Carniato

University of Eastern Piedmont in Alessandria (Alessandria, Italy)

Equilibrium, Kinetic and Relaxometric Characterization of Gd(III)-Complexes Formed with The N-Propionic Acid and N-Valeric Acid Containing AAZTA Ligand

Zsolt Baranyai

Bracco Imaging S.p.a, CRB/Discovery Trieste (Trieste, Italy)

A Fast Field Cycling System with Non-Linear Components Enabling Both Large B₀ Shifts and Precise Current Control at Low Power

Nicolas Chanet

Imagerie par Résonance Magnétique Médicale et Multi-Modalités IR4M (Orsay cedex, France)

Ion Solvation in Ionic Liquids: Towards Rare Earth Recycling

Guillaume Meriguet

Lab. PHENIX – UPMC Sorbonne Universités/CNRS (Paris, France)

A new approach to overcome ‘field stability’ problem in FFC NMR

Giacomo Galuppini

Identification and Control of Dynamic Systems Laboratory, University of Pavia (Pavia, Italy)

Use of Magic Sandwich Echo Sequence to Characterize Powder Sugars

Mehmet Gazaloglu

Middle East Technical University (Ankara, Turkey)

