



# Young Belgian Magnetic Resonance– Scientist 2024

## Program Book

20<sup>th</sup> edition of YBMRS  
November 25<sup>th</sup>-26<sup>th</sup> 2024  
Floréal, Blankenberge

## WELCOME

*The organizers of the 20<sup>th</sup> Edition of the Young Belgian Magnetic Resonance Scientists meeting series are delighted to welcome you to this anniversary edition.*

*We are convinced that you will enjoy this celebration of Magnetic Resonance Science and the interaction and discussion with your young peers or senior colleagues.*

*We hope that this event will continue to forge those of you active in the field now but also in the future into a lively and active community recognisable at the international level and successful in catalysing young scientist to demonstrate the diversity and high standards of Magnetic Resonance driven research in our country.*

*Thanks to all for making this another successful edition!*

*José, Luca and Wim*



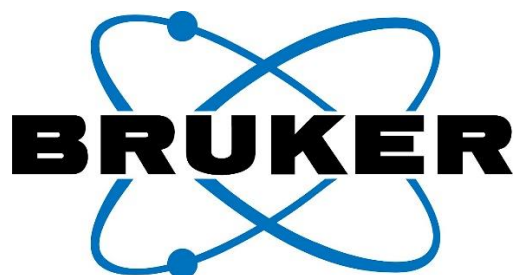
Did you register for our newsletter yet?

This is the preferred channel for communications regarding the YBMRS and news of general interest for the magnetic resonance community in our country.

Please sign up, you can unsubscribe at any moment and mails will be kept to a minimum – we comply with privacy regulations.

*The book of abstracts can be downloaded on the conference website: [www.ybmrs.be](http://www.ybmrs.be)*

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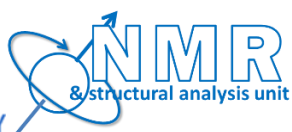
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## Please take notice of the following practical information

### General

All scientific activities are organized around the *Foyer*, which you can find left from the main desk in the lobby. All participating sponsors are conveniently located in the *Foyer*, where coffee breaks will be served in between the morning sessions and during the poster sessions in the afternoon. *A vestuary is available in the Foyer as well, however, we urge you not to leave any valuables in the vestuary as it will not be guarded.* Unless otherwise noted, *the Foyer will be closed after 21h00.* Should you have any questions during your stay, please address yourself to the conference reception desk, located in the *Foyer* during breaks, starting Monday morning.

A certificate of participation will be mailed to you upon successful registration at the registration desk.

### During sessions

- Please *switch of your phone* or put it in silent mode.
- *Do not take pictures of slides or posters*, rather approach the presenter during the meeting and request a reprint.
- Have the courtesy *not to use your laptop* while sitting in the front of the conference room during talks.

### Poster setup and removal

All posters are to be set up in the same room, located close to the *Foyer*. The poster panels are numbered. Your poster number is available from the abstract book. Poster panels will be available at the start of registration. Participants presenting a poster are kindly requested to set up their poster no later than the lunch break on Monday.

There will be two poster sessions. The poster boards are fitted with poster numbers. While all posters are available for discussion during both sessions, *the authors of odd posters are requested to present their posters during the Monday Session, while authors of even posters are kindly requested to do so during the Tuesday Session.* Please man your posters for the first hour of the poster session. Posters should stay up until the final coffee break, when they should be taken down.

Per poster, two metal CLiPs are available, one for the top and one for the bottom, allowing to hang the poster to the designated board – no pins required. *The metal clips can be finger traps, be careful.* Please do not use staples or pushpins under any circumstances.

### Concerning the Hotel accommodation

If you have not done so, please register yourself for your room at the main desk in the lobby of the Floreal. [Rooms will be available starting 2 pm at the earliest.](#)

[Check out time is 10 am, luggage can be placed in the back of the conference room.](#)

Should you have any questions or requests concerning your accommodation, please contact the Floreal staff.

### **Concerning Breakfast, Lunch and Dinner**

*Breakfast and all meals will be served in the Restaurant.* Please follow the indications from the main lobby.

Breakfast is served from 7.30 till 10.00. Lunch starts immediately after the last morning session and consists of a sandwich buffet with beverages.

Participants with specific dietary requests will receive additional practical information when they register. If there is a problem in this respect, please contact the conference desk.

### **Internet access**

Throughout the conference grounds, the lobby and most of the restaurant, wireless internet is available free of charge. No password code is necessary. A separate wifi network, also without password code applies in the accommodation.

### **YBMRS Party**

A party will be organized following dinner on Monday, starting around 22.00 and featuring a local DJ. *At the request of the Floreal staff, and as a courtesy to the other guests, please note that the Party is set to close at 02.00.*

The Organizing Committee cannot be held responsible for the weather during the conference, nor for the selection of music during the party...

## SCIENTIFIC PROGRAM

*Monday, November 25<sup>th</sup>*

- 9:15      *Registration, welcome coffee*
- 10:20      *Opening*
- 10:30      **Tutorial 1: Magnetic Resonance Imaging**  
Prof. **Chantal Tax** (University Medical Center Utrecht) – Chair: Luca Fusaro
- 11:20      **Tutorial 2: EPR to study structure and dynamics in paramagnetic materials**  
Prof. **Josef Granwehr** (Forschungszentrum Jülich GmbH, Germany)
- 12:10      **Lunch break**
- 13:10      **Tutorial 3: SOPs for the metabolic analysis of large cohorts of samples**  
Prof. **Oscár Millet** (CIC bioGUNE, Spain)
- 14:00      **Oral Session 1 - Chair: Samara Medina Rivero**  
**Ziyu Yu** (KULeuven) - Multinuclear Solid-State NMR and Spectroscopic Analysis of Fe-Bearing Alkali-Activated Slags: Insights into Iron Oxidation State and Polymerization
- 14:20      **Indiana Ternad** (UMons) - Exploring the Radiosensitizing Potential of Iron Oxide Nanoparticles
- 14:40      **Wiktor Adamski** (University of Lille) - Fast access to protein dynamics using ultra-selective  $^{15}\text{N}$ - $^1\text{H}$  spectroscopy
- 15:00      **Flash presentation of posters**
- 15:10      **Poster Session 1**, odd numbers - coffee break
- 16:30      **Plenary Lecture 1: Diffusion MRI with strong gradient hardware**  
Prof. **Chantal Tax** (University Medical Center Utrecht) – Chair: Dimitrios Sakellariou
- 17:20      **Oral Session 2 - Chair: Rodrigo de Oliveira Silva**
- 17:40      **Barbara Mathieu** (UCLouvain) - Noninvasive discrimination between mitochondrial ROS and cytosolic ROS in solid tumors using in vivo EPR spectroscopy
- 18:00      **An Vanduffel** (KULeuven) - Improving medical material imaging with 3D-printed MRI passive shims
- 18:20      **Jennifer Theissen** (UHasselt/KULeuven) - Beware of the structure: Insights into the Phosphorus Dynamics of post-synthetically modified NU1000 in the presence of water
- 18:40      **Break/Meeting**
- 19:00      **Reception**
- 20:00      **Dinner and party**

## SCIENTIFIC PROGRAM

*Tuesday, November 26<sup>th</sup>*

- 9:00** *Plenary Lecture 2: Investigating materials, components and devices for electrochemical applications using NMR and EPR* – Prof. **Josef Granwehr** (Institute of Energy Technologies, Julich, Germany) – Chair: Sabine Van Doorslaer  
*Oral Session 3 - Chair: Elien Dervaux, Universiteit Hasselt*
- 9:50** **Ilias Vandevenne** (UAntwerpen)- Electrical detection of magnetic resonance on a Chip (EDMRoC): A low-cost and sensitive characterization tool for defects in SiC MOSFETs
- 10:10** **Robine Cleirbaut** (UAntwerpen) - Characterization and incorporation of heme proteins in mesoporous titania materials for biosensing applications
- 10:30** *Poster Session 2*, even numbers, coffee break
- 11:40** *Oral Session 3 continued*  
**Jesus Alejandro De Sousa Rodriguez** (UAntwerpen) - Detection of triplet excitons on open-shell (6,5)-SWCNTs-PTM• using Optically-Detected Magnetic Resonance
- 12:00** **Anthony Morena** (UNamur) - Characterizing the Acidity of Silica-Based Materials through <sup>31</sup>P ssNMR: TMP as a Probe for Lewis and Brønsted Acid Sites.
- 12:20** *Group Picture & Lunch Break*
- 13:50** *Plenary Lecture 3: A molecular definition of metabolic syndrome as investigated by NMR-based metabolomics* – Prof. **Óscar Millet** (CIC bioGUNE, Spain) – Chair José Martins  
*Oral Session 4 – Chair: Anthony Morena*
- 14:40** **Yoanes Vianney** (UGent) - Structural Basis of Testosterone Recognition by a DNA Aptamer
- 15:00** **Ewoud Vaneckhaute** (ULyon/KUleuven) - Boosting <sup>1</sup>H and <sup>13</sup>C NMR signals by orders of magnitude using benchtop DNP
- 15:20** *Coffee break, poster removal*
- 16:00** *Awards session and closure*
- 16:20** *End*

*The book of abstracts can be downloaded on the conference website: [www.ybmrs.be](http://www.ybmrs.be)*

*List of Posters*

#	Title	Presented by
1	Multi-diagnostic NMR + dielectric spectroscopy unveils the unconventional properties of nanoconfined water	Eric Breynaert
2	Mitochondrial dysfunction induced in human hepatocytes exposed to the fungicide kresoxim-methyl and to a mixture kresoxim-methyl/boscalid	Mélina Carbone; Yasmine Vandensande
3	Opportunities for Active Site Identification and Activity Prediction of Zeolite Catalysts using MAS NMR	C. Vinod Chandran
4	Benchtop NMR system for Faraday and Gamma detection	Rodrigo de Oliveira Silva
5	AI-Driven Analysis of Multiparametric MRI for Evaluating Response to Targeted and Immune Therapies in Preclinical Melanoma Models	Madeline El Assal
6	Metafollow: one-year longitudinal follow-up to assess metabolites' variations in healthy subjects.	Pascal de Tullio
7	Monte Carlo Simulations of the T2 relaxivity induced by Cubic Shaped Superparamagnetic Nanoparticles	Florent Fritsche
8	Functionalized Silica Nanoparticles: Design, Characterization, and Multimodal Imaging Applications	Sarah Garifo
9	Insights into the crystallisation behaviour of imidazolium-chloride by multinuclear NMR.	Luca Fusaro
10	NMR relaxometry to monitor in situ the loading of ion exchange resins with Ni <sup>2+</sup> and Cu <sup>2+</sup> ions during a column experiment	Yves Gossuin
11	The Flemish Inter-University Ultra-High Field MRI Project (IN2U)	Pim Pullens
12	Homonuclear Decoupling combined with 2D-NMR experiments	Maxime Kolkman
13	In situ crystallization studies of zeolites and MOFs using static and MAS NMR	Sambhu Radhakrishnan
14	Click-to-release bioorthogonal tyrosine modification	Neeve Marien
15	Unravelling the mysteries of black titania: A spectroscopic study on the reduction of titania with different crystal phases	Lore Van den Bergh
16	Toluene-induced Pluronic F127 micelles as templating agent for hollow silica nanostructures: an NMR study	Vittorio Marsala



**List of Posters**

<b>#</b>	<b>Title</b>	<b>Presented by</b>
17	High Temperature 1H DOSY NMR reveals alteration of the molecular structure of water-extractable arabinoxylans during fermentation of wheat flour for sourdough production	Pasquinel Weckx (KU Leuven)
18	Simulation of transverse Nuclear Magnetic Relaxation Induced by superparamagnetic nanoparticles with a semipermeable coating	Éléonore Martin
19	Application of NMR-based Metabolomics in the Evaluation of Anti-Osteoporotic Treatments	Arnaud Pinsart
20	The last missing interaction: Observation of 1H-1H J-couplings in solid-state NMR spectroscopy	Dimitrios Sakellariou
21	Spin Magnetic Resonance and Time Resolved Spectroscopy of Molecular Qubits	Samara Medina Rivero
22	Multi-harmonic EPR detection of melanin in skin melanomas: from mice to men	Mohammad Wehbi
23	From signals to insights: NMR-based metabolomics as a tool for lung cancer biomarker research	Jill Meynen
24	Conformational ensemble analysis of flexible peptides using residual dipolar couplings	Elisa Norzagaray

Please put up your posters in the board with your assigned number by lunch on Monday

Remove your poster during the final coffee break in the afternoon on Tuesday

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