



Participants of the 1st Italian-French International Conference on Magnetic Resonance at the University of Milano Bicocca

1st Italian-French International Conference on Magnetic Resonance in Milan, 2022

by *Silvia Borsacchi, Cristina Airoidi, Laurent Delevoye, Marco Geppi*

Planned to be held in Milan in September 2020—with the endorsement of IUPAC—the first Italian-French International Conference on Magnetic Resonance unfortunately had to be postponed due to the COVID-19 pandemic. The Italian and French societies for Magnetic Resonance—GIDRM, Gruppo Italiano Discussione Risonanze Magnetiche (www.gidrm.org), and GERM, Groupement d'Etudes de Resonance Magnétique (germ-asso.fr)—organizers of the conference, with the support of the magnetic resonance researchers of the most important scientific institutions of Milan (Università degli Studi di Milano Bicocca, Università di Milano, G. Ronzoni Institute for Chemical and Biochemical Research, Politecnico di Milano, IRCCS San Raffaele Hospital, and Istituto di Scienze e Tecnologie Chimiche SCITEC, CNR) agreed not to transform the conference to an online meeting. They rather preferred to work together for organizing the face-to-face conference in Milan as soon as the health safety conditions could have allowed it.

Finally, this several years-long project, which started from conversations among Italian and French colleagues and that was built during many on-line meetings involving the boards of the two societies and the local organizers, could be realized on 27-30 September 2022, in Milan.

This was the first face-to-face meeting for both Italian and French Magnetic Resonance researchers in more than two years, and it was particularly emotional to have it in Milan, one of the most lively, active,

productive cities in Italy, that was terribly hit by the COVID-19 pandemic.

GIDRM in Italy and GERM in France are the largest no-profit, independent national societies of people (about 900 members in GIDRM and more than 300 regulars in GERM) working on Magnetic Resonances (MR), including NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) spectroscopies, relaxometry, and MRI (Magnetic Resonance Imaging), in public and private organizations. The mission of each society is to support the national community of researchers working on MR, especially the youngest ones, providing grants for research and travelling, giving awards for research careers, Master and PhD theses and best conference presentations, organizing summer schools, workshops and an annual or biennial national scientific meeting for discussing the most relevant research topics in MR. The Italian society GIDRM, with the aim of establishing relations and exchanges with similar societies in other European countries, organized a joint meeting with German and Slovenian Societies in 2013. The GERM society organized joint meetings with Portuguese and Spanish societies in 2016 and 2011, respectively.

GIDRM and GERM Boards and their Presidents, Marco Geppi and Isabelle Landrieu (up to 2021) and Laurent Delevoye, decided to organize the first joint Italian-French International Conference on Magnetic Resonance, with the aim of strengthening the reciprocal knowledge, exchanges and synergies between the two lively and bordering national communities, discussing the most recent developments in the field of magnetic resonances. The active group of GIDRM members, working in several Milan institutions, offered to host the conference at the Università degli Studi di Milano Bicocca and a Local Organizing Committee, headed by

Conference Call



Dave Bryce's (University of Ottawa) lecture.

Cristina Airoidi, worked tirelessly for a successful local logistics.

GIDRM and GERM Boards, as a joint Scientific Committee of the conference, designed a rich scientific program with 8 invited plenary keynote lectures delivered by scientists coming from all continents, 8 invited plenary lectures by distinguished Italian and French scientists and 35 lectures in parallel sessions, selected from the received abstracts.

The panel of keynote and invited speakers was gender balanced and geographically diverse: Alexander Barnes, ETH Zurich, Switzerland; Angelo Bifone, University of Turin, Italy; David Bryce, University of Ottawa, Canada; Roberto Fattorusso, University of Campania, Italy; Patrick Giraudeau, University of Nantes, France; Angela Gronenborn, University of Pittsburgh, USA; Michal Leskes, Weizmann Institute of Science, Israel; José Martins, Ghent University, Belgium; Françoise Ochsenbein, CEA-Saclay, France; Miquel Pons, University of Barcelona, Spain; H el ene Ratiney, CNRS Lyon, France; Daniel Topgaard, University of Lund, Sweden; Paola Turano, University of Florence, Italy; Andrew Webb, University of Leiden, Netherlands (who had to cancel his participation due a last-minute impediment). The talks covered many different cutting-edge magnetic resonance research topics, as latest methodologic developments (hardware and analysis for MR in solids and liquids, in vivo MR spectroscopy and human MR imaging) and especially very innovative applications of MR to the understanding of crucial topics in biochemistry and biology (proteins, lipopeptides, cells, metabolites), human health (imaging diagnosis, medicine) and materials for energy, perfectly representing the great versatility and broad interest of MR.

The Scientific Committee decided to strongly support the attendance of young people, offering to all the

under-35 years old scientists willing to present a contribution, the attendance and accommodation. Moreover, 4 best poster awards were planned to be assigned at the end of the conference and the winners had the opportunity to present their posters in the final plenary session.

Considering the international character of the meeting, the broad interest of the topic, the special attention to young researchers, the Scientific and Local Committees decided to apply for the prestigious IUPAC endorsement, which was granted already in 2020, and maintained for 2022. IUPAC supported the conference with communication on the IUPAC website and an IUPAC representative was invited to deliver a presentation of the union in the conference opening. Silvia Borsacchi, member of the IUPAC CHEMRAWN Committee and of the Italian Commission of CNR (National Research Council of Italy, National Adhering Organization to IUPAC) for IUPAC (www.iupac.cnr.it), and member of the GIDRM Board, presented the union history and mission, from the past to the future, joining the traditional fundamental work on nomenclature and standards with the great present efforts to build a sustainable development, in the many different fields in which chemistry is directly involved, but also toward the superior values of gender equality, education, inclusiveness and peace. The main union activities, as projects, publications, global initiatives, were presented, and all the conference attendees were invited to join IUPAC, offering their volunteering activity to advancing the worldwide role of chemistry for a more sustainable and fair development.

The conference was organized over four days, each of them including keynote and invited talks, and two parallel sessions of oral communications. In each of the first three days of the meeting, a session for

Conference Call

poster presentations (134) was held, during which a committee formed by some keynote and invited speakers (D. Topgaard, D. Bryce, J. Martins, P. Giraudeau, H. Ratiney, P. Turano, A. Bifone) was invited to evaluate posters presented by under-35 students and researchers in order to assign 4 awards the last day of the meeting. The topics presented and discussed at the conference, thanks to the participation and contributions of 256 attendees, covered the most important developments, frontiers, and applications of MR, both in solids, semi-solids, liquids and in-vivo, including Dynamic Nuclear Polarization techniques, spin dynamics and relaxation, low-field MR, investigations on innovative materials, biomolecules, metabolomics, cells, drugs, cells, and contrast agents.

Special talks were delivered by the winner of the GIDRM Gold Medal, Piero Sozzani, for his special contribution to MR, especially in the field of solid-state NMR of materials, in Italy and abroad, and by the GIDRM under 35 awardees Veronica Ghini and Alessia Vignoli, for their research in metabolomics for cancer research. Moreover Bruker, Jeol, Stelar, Magritek and Extrabyte, as MR companies sponsoring the conference, offered lectures on new developments in MR techniques and software. At the end of the conference the best poster awards were assigned to Giorgia Ciufolini (1st prize), Sofie Schellinck (2nd prize), Francesca Nerli (3rd prize),



Fig.4 Winners of the best poster awards with the Presidents of GIDRM and GERM. From left to right: Marco Geppi (GIDRM President, Italy), Francesca Nerli (University of Pisa, Italy), Sofie Schellinck Ghent University (Ghent University, Belgium), Giorgia Ciufolini Università degli Studi di Roma Tor Vergata, Italy), Ritchy Leroy (Université de Reims Champagne Ardenne, France), Laurent Delevoye (GERM President, France).



Fig.3 IUPAC presentation delivered by Silvia Borsacchi (CHEMRAWN and Italian NAO).

The conference was closed by the Director of the Department of Biotechnology and Biosciences, Prof. Francesca Granucci and by the Presidents of GIDRM and GERM who jointly acknowledged IUPAC, Università degli Studi di Milano Bicocca, all the sponsors who supported the conference, the Scientific Board and the local organizers of the conference, and especially all the people attending the conference, hoping to have paved the way for future collaborations and meetings.

MR is a great tool for science, an almost uniquely versatile and powerful tool for elucidating the structure, dynamics, and interactions in almost every kind of complex system. Great results have been obtained in more than 70 years of history, but a large potential has still to be developed and this is absolutely necessary for advancing in fundamental fields as materials science, sustainability, medicine and biology.

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