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Contents

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Correspondence address:
ETH Zurich, Laboratory of Physical Chemistry, HCI F 223
Vladimir Prelog Weg 2, 8093 Zurich, Switzerland
Mail: contact@ampere-society.org
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Editorial

Dear members of the Groupement AMPERE,

another year comes to an end. At the Groupement AMPERE we look back to year with many events organized by the various subdivisions of AMPERE: EUROMAR, European Federation of EPR Societies, Magnetic Resonance in Food Science, Magnetic Resonance in Porous Media, Spatially-Resolved Magnetic Resonance, Biological Solid-State NMR, Hyperpolarization in Magnetic Resonance, and the new Publication Division. I would like to take the opportunity to thank all the people who are active in the subdivisions and organize conferences, meetings, schools, workshops, and now also the new open-access journal „Magnetic Resonance“. Without their effort the Groupement AMPERE would not be able to organize such a diverse portfolio of events.

In the course of designing the cover art for the open-access journal Magnetic Resonance, there was also discussion about a new logo for the Groupement AMPERE. The graphic designer worked together with some members of the AMPERE Bureau and created a proposal for a new logo which is shown above. A final decision whether we will adopt the new logo will be taken at the next meeting of the AMPERE Bureau in March 2020.

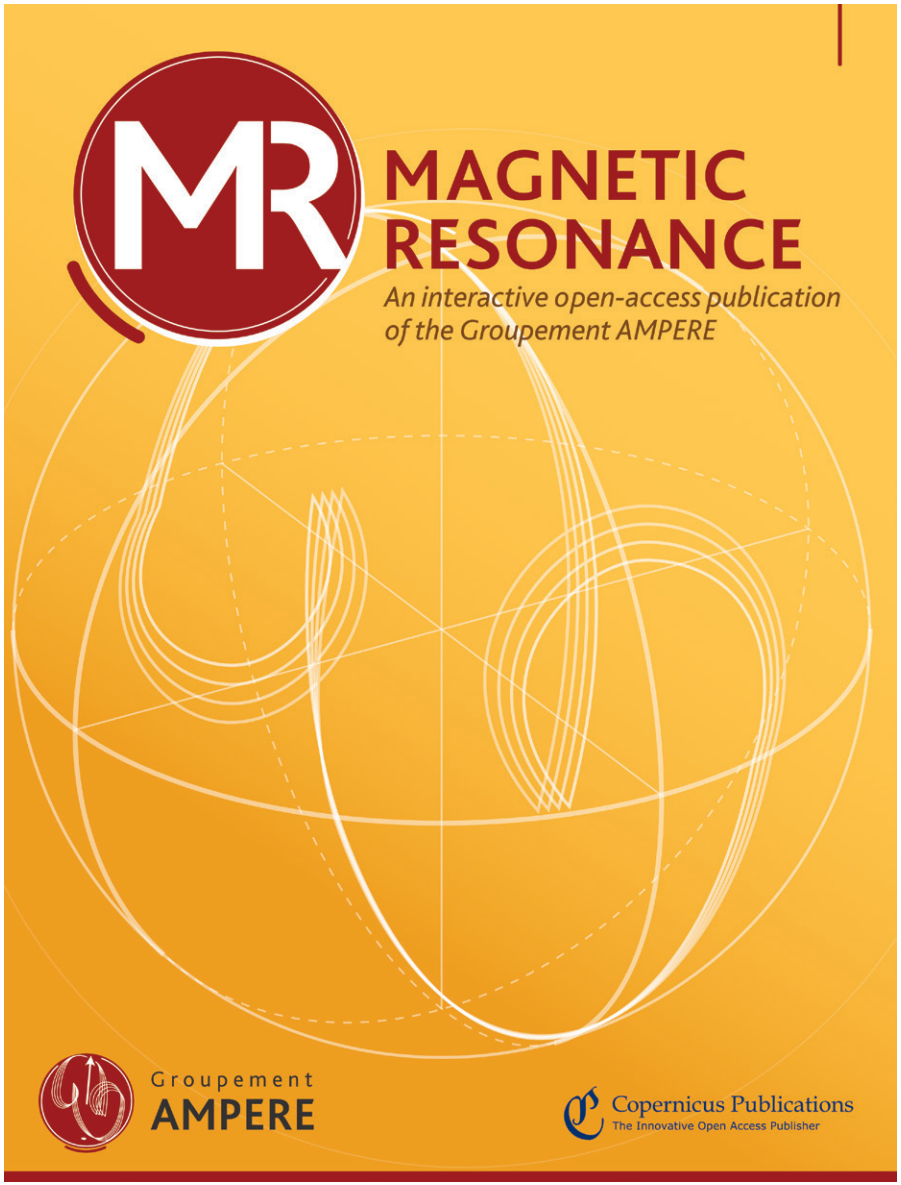
The next year will have again many events organized by AMPERE. There will be the annual AMPERE NMR School in Zakopane, the MR Food conference in Aarhus, the MRPM and as the biggest event the EUROMAR 2020 which is organized in Bilbao, Spain. I hope that many of you will be able to attend one of these meetings.

Finally, I wish you a peaceful holiday season and a good start into the upcoming year 2020.

Best regards,

Matthias Ernst

Matthias Ernst
Secretary General
Groupement AMPERE



A new magnetic-resonance journal for the community, not for profit

Open Access MAGNETIC RESONANCE

The Groupement AMPERE has launched a quality not-for-profit open-access journal called „Magnetic Resonance - An interactive open-access publication of the Groupement AMPERE“ which is now accepting manuscripts in all fields of magnetic resonance - in liquids, solids and gases, in vitro and in vivo, including nuclear magnetic resonance (NMR) spectroscopy, electron paramagnetic resonance (EPR) spectroscopy, magnetic resonance imaging (MRI), magnetic resonance spectroscopy (MRS), nuclear quadrupole resonance (NQR), various hyperpolarization methods in liquids and solids such as dynamic nuclear polarization, para-hydrogen induced polarization, optically detected magnetic resonance, as well as innovative advances in techniques supporting magnetic resonance experiments that may range from sample preparation to computational techniques. Advanced and innovative applications of magnetic resonance are also within the scope of the journal.

The new journal is owned by the Groupement AMPERE and is published by Copernicus Publications (Göttingen, Germany). More than 50 colleagues from all branches of magnetic resonance have joined the editorial board to support the Groupement AMPERE and the executive editors Geoffrey Bodenhausen (Paris, France), Matthias Ernst (Zürich, Switzerland), Daniella Goldfarb (Weizmann Institute, Israel), Mehdi Mobli (Brisbane, Australia), Gottfried Otting (Canberra, Australia), Peter C. M. van Zijl (Baltimore, USA) in launching the new journal. Magnetic Resonance is an open-access journal with modest author page charges of 75-80 € per printed page. It implements an interactive and transparent two-stage peer-review process.

We invite all researchers working in a field related to topics covered by „Magnetic Resonance - An interactive open-access publication of the Groupement AMPERE“ to submit manuscripts at https://www.magnetic-resonance-ampere.net.

Portrait:
Prof. Sharon Elizabeth Marie Ashbrook

• why magnetic resonance and why NMR and MRI?

In the last year of my undergraduate degree in Oxford I did a research project with Stephen Wimperis on solid-state NMR spectroscopy of quadrupolar nuclei, and really enjoyed this. I was then offered the chance of a DPhil position in the group and so put off (temporarily, I thought at the time) my plans to be a primary school teacher.

• what is your favorite frequency?

54.242 MHz (^{17}O at 9.4 T). I did all my undergraduate and PhD work (much of it on ^{17}O, my favourite nucleus) on a 400 MHz system, and so these frequencies are indelibly imprinted on my brain, usually to 3 decimal places. I have no idea what my group are doing when they talk about frequencies at other fields.

• what do you still not understand?

I find that almost every experiment we do raises questions that I don't know the answers to – so I would say many things (and growing on a daily basis).

• luckiest experiment you have ever done.

Not really an experiment as such but one of the luckiest things I ever did was sit down at College lunch in Cambridge next to someone who looked like a Physicist. I politely asked what they did and was surprised when they replied they had just invented a new method to predict NMR parameters for periodic solids. This marked the start of a long and fruitful collaboration with Chris Pickard.

If I really had to pick an experiment, it would be an STMAS spectrum of a silicate mineral (which I set up even though I already had a nice MQMAS spectrum, but it was 10 pm on a Saturday night and I wanted to go home). The spectrum showed inexplicable broadening of half of the spectral resonances (luckily not all, as I would have assumed I hadn't set the spinning angle correctly and thrown away the spectrum). A few months later we realized this was due to ^{1}H motion, and we were able to subsequently exploit this observation to study dynamics in a range of minerals and microporous frameworks.

• what was the worst mistake you have made during your lab time?

I think the time I picked up the metal end of a heat gun that had just been used to defrost the pipes after a nitrogen fill was probably not my finest hour. NMR wise, perhaps running a three day experiment without a sample in the magnet was also noteworthy (not sure actually told my supervisor about that – luckily it was a weekend).

• most memorable conference story.

Probably Euromar/ISMAR in Florence in 2010, where I had an invited talk. My parents happened to have booked a holiday in Florence at the time and persuaded me to stay at the same hotel as them. They came with me when I registered for the conference and I told them to stay in the corner and not talk to anyone. When I turned around I was a little traumatised to see that they were chatting away with Geoffrey Bodenhausen, who then arranged for them to get visitors passes to hear my talk. As you might imagine, I was very stressed during the talk, but was rewarded by my Mother's classic summary of "Well you were better than I thought you would be".

• with whom (historical person) would you like to meet?

I would have been interested to meet Dorothy Hodgkin. I have always been intrigued by her story, and how she combined having a family with nobel-prize winning research, despite having significant health problems. I was awarded a Royal Society Dorothy Hodgkin Research Fellowship in 2004, and this encouraged me to research a little more about her.

• when do you get your best ideas?

Walking into work in the early morning. It is very quiet then and probably the only time I really get to think (as many of my days are now filled with administration and meetings).

• if you had just one month time for travelling - where would you go to?

I think I would go to Italy. I love Florence, Sicily and would like to visit Rome again. However, I have never been to Venice or the Italian lakes, and would also like to explore some of the less "touristy" parts of the country, which would be possible if I had a month. I would worry about the email inbox if I was away for a month though…

• your idea of happiness.
It's a close call between spending time with my family (particularly my very cute niece and nephew) and watching Liverpool win an important football match…

Position:
Professor of Physical Chemistry, University of St Andrews

Awards:
Fellow of the Royal Society of Edinburgh 2016
Suffrage Science Award 2017-2019
Royal Society Wolfson Merit Award 2015
Royal Society of Chemistry Corday-Morgan Prize 2015
Royal Society of Edinburgh Makdougall Brisbane Medal 2012
Royal Society of Chemistry Marlow Award 2011
NMR DG BRSG Early Career Prize for Magnetic Resonance 2009
Royal Society of Chemistry Harrison Prize 2004
Royal Society Dorothy Hodgkin Research Fellowship 2004-2007
Charles and Katherine Darwin Research Fellowship 2005-2007

Homepage:
http://chemistry.st-and.ac.uk/staff/sa/group/Site/Home.html

Education:
MChem Chemistry, University of Oxford 1993-1997
MA, University of Oxford 2000
DPhil, University of Oxford 1997-2001 (Supervisor Stephen Wimperis)

Interests:
Lifelong supporter of Liverpool Football Club. Used to do elite gymnastics when younger and am qualified gymnastics coach and judge. Nowadays, I relax by reading crime fiction and drinking reasonable quantities of prosecco. (Perhaps a little worryingly, the three members of my group I consulted about this question also mentioned prosecco).

Report: EuroIsmar 2019

EUROISMAR 2019 was held in Berlin, Germany, uniting the 21st ISMAR, 15th EUROMAR and the 15th GDCh FGMR Discussion Meeting in a joint event. It took place in historical and remarkable locations, the Henry Ford Building of the Free University of Berlin and the Harnack House of the Max Planck Society in Dahlem. EUROISMAR 2019 was devoted to delivering an exciting display of NMR, MRI and EPR state of the art, progress and breakthrough, extending into all fields of Chemistry, Biology and Medicine.

Committees:
International Scientific Committee: Jeff Reimer (Chair), University of California, Berkeley, Sharon Ashbrook, University of St. Andrews, Hanudatta Atreya, Indian Institute of Science, Bangalore, Christoph Boehme, University of Utah, Kevin Brindle, University of Cambridge, Jiangfeng Du, U. of Science and Technology of China, Hefei, Matthias Ernst, ETH Zürich, Isabella Felli, University of Florence, Lewis Kay, University of Toronto, Burkhard Luy, Karlsruhe Institute of Technology, Michal Neeman, Weizmann Institute of Science, Hartmut Oschkinat, Free University Berlin, Tatyana Polenova, University of Delaware, Thomas Prisner, University of Frankfurt, Dimitrios Sakellariou, KU Leuven.

Local Organizing Committee: Hartmut Oschkinat (Chair), Jan Behrends, Klaus Lips, Robert Bittl, Thoralf Niendorf, Christian Freund, Marek Potrzebowski, John Dylan Haynes, Christoph Rademacher, Bernd Ittermann, Thomas Risse, Stefan Jurga, Leif

Schröder, Wiktor Koźmiński, Vladimir Sklenar, Adam Lange and Robert Tycko.

Promotion & Communication

Leading up to the EUROISMAR 2019 the conference website, https://conference.euroismar2019.org, was launched in September 2018. For the entire preparation phase and conference, a total of 18,343 Users were documented. A Facebook page was set up and had 150 followers, on Twitter 566 users were active, with two posts a day send out while during the event itself 20 posts a day were the norm. A total number of 180'000 page impressions were documented. 8-10 newsletters and workshop announcements were sent out by the German Chemical Society. Outreach activities were launched in cooperation with co-organizers and included a video made at the Harnack Haus.

At the beginning of April 2019, a childcare survey was placed online and due to the feedback and specific requests a cooperation with benefit@work, https://www.benefit-at-work.de/en, was established and a safe and resourceful childcare program was guaranteed throughout the conference.

Some Figures of EUROISMAR 2019

1044 participants from 44 countries; 344 Germany, 258 overseas and 442 Europe
additional 75 volunteers from Berlin research groups
682 scientists; 260 PHD students; 25 Master students
32 exhibiting industry partners
41 partners (corporate and institutional)
14 plenary lectures on the following themes: EPR/biomolecules, EPR/materials, Hyperpolarization, Liquid state NMR/biomolecules, MRI, NMR Metabolomics, NMR methods, Solid-state NMR/biomolecules, NMR of materials, Solid-state NMR/small molecules, Physics of Magnetic Resonance
155 parallel lectures on the following themes: Benchtop and low-field NMR, Bioliquids, Biosolids, Computation, EPR, Hardware, Hyperpolarization, Liquid-state methods, Materials, MRI and in vivo, Metabolomics, Small Molecules, Solid-state methods
3 tutorials on MRI, Quantum-Chemical Methods, Spin Physics
605 abstracts selected for poster presentations presented during poster sessions (Monday, Tuesday and Thursday)
3 workshops organized by Bruker, Jeol and Magritek
1 Facility Managers Meeting

Prizes

The renowned Richard R. Ernst Prize to recognize recent beneficial applications of Magnetic Resonance was sponsored by Bruker. It was a pleasure to honor the work of Angela Gronenborn (University of Pittsburgh, USA) and Daniella Goldfarb (Weizmann Institute of Science, Israel) who jointly received the 2019 Ernst Prize, for

Photo from left to right: Angela Gronenborn, Lucia Banci, Daniella Goldfarb and Falko Busse

their significant contributions to the development of magnetic resonance methods and applications to molecular biology.

The Raymond Andrew Prize is awarded to a young scientists for an outstanding PhD thesis in magnetic resonance. Thach (Cody) Can (previously MIT, now UCSD, USA) delivered the Raymond Andrew Prize Lecture via Skype (abstract p. 12).

Jane Dyson and Peter Wright (both Scripps Research Institute, USA) were the joint recipients of the 2019 ISMAR Prize for their significant work on intrinsically disordered proteins. As is the tradition, the ISMAR prize was sponsored by Cambridge Isotope Laboratories, Inc. (CIL).

The lecture in memory of Paul Callaghan, sponsored by Magritek was delivered by Malcolm Levitt (University of Southampton, UK) on „adventures with long-lived states".

The Anatole Abragam Prize is awarded to candidates within seven years of completing their PhD. The award aims to recognize and foster outstanding young scientists at a typically important point in their career and is sponsored by Bruker. Michal Leskes (Weizmann Institute of Science, Israel) delivered the 2019 Anatole Abragam Prize Lecture on endogenous DNP in energy storage materials.

Felix-Bloch-Lecture: A special award which is given to a distinguished scientist in the field of magnetic resonance. Franz Hagn (Technical University of Munich,

Germany) gave the Felix-Bloch-Lecture during the opening prize lecture session of EUROISMAR 2019 on studying the structure and dynamics of membrane proteins in a native environment.
GDCh-Ernst Awards honored the work of young scientists (PhD students), based on a recent paper that was written and published between 1 April 2018 and 1 April 2019. The following awardees for 2019 were: Victoria Aladin, Goethe University Frankfurt; Daniel Friedrich, Leibniz-Forschungsinstitut für Molekulare Pharmakologie; Bálint Koczor, Technische Universität München, now University of Oxford and Tomas Orlando, Max Planck Institute for Biophysical Chemistry.
The Journal of Magnetic Resonance, Elsevier, awarded 10 prizes and due to the generosity of the Suraj Manrao Fund 12 student posters received recognition of their excellent work.
The „Magnetic Resonance in Chemistry Awards" were awarded to Dr. Cyril Charlier, National Institutes of Health, USA, Dr. Guillaume Mas, Universität Basel, Schweiz, as well as Dr. Sylvia Ostrowska, University of Southampton, UK.

Exhibition & Sponsoring
The industry exhibition was an integral part of the conference with 32 industry sponsors contributing generously to exhibit in these splendid locations. The planning for the industry exhibition was tightly linked to both poster sessions and catering aspects as well as the planning of all musical arrangements. Thereby focus was drawn to a total of 30 booths with sizing from 6 sqm to 100 sqm. Within the organizational team two team members were dedicated to industry partners to ensure that wishes of representation, marketing and interaction with the participants were implemented.
Social Events & Catering & Musical Arrangements

Following the Bruker Luncheon and opening ceremony of the conference, participants were invited for a Welcome Get Together Sunday evening with entertainment and musical arrangements such as the Berlin Klezmer Band 'Di Grine Kuzine' in the beautiful gardens of the Harnack House, close to the exhibition area, with summer wines and delicious canapees.

The Bruker Night was a remarkable evening on Monday where over 700 participants enjoyed summer in the beautiful ambience of the gardens of the Harnack Haus, the conference center of the Max Planck Society.

The conference dinner took place on Thursday, 29 August 2019, at Clärchens Ballhaus, Auguststraße 24, 10117 Berlin. Clärchens Ballhaus is a classic Berlin location in the city centre. Comprised of a Ballroom, a Hall of Mirrors, and a Winter Garden that survived two World Wars as well as the division of the city, it epitomizes the city where all walks of life can come together.

Light Lunches and abundant coffee & cake were served during the sessions in both locations favoring the exhibition area and drawing participants to the posters. Especially a focus on the exhibition area was made in order to view industry booths.

On Sunday, Pat Appleton kicked off the conference with three songs in the Max Kade Auditorium of the Henry Ford Building. Die Grine Kuzine, a true Berlin Klezmer Band, played its repertoire of Eastern Roots, Western Beats on Sunday evening as part of the Welcome Mixer in the gardens of the Harnack House. Du Dopico performed during the poster sessions on Tuesday in the Wintergarden and Lise Meitner Hall alternatively, the program included Schumann, Händel and Rachmaninov. Wednesday brought a wonderful array of performances of the EUROISMAR Friends Chamber Orchestra together with Duo Dopico. Ville Telkki and Anu Kantola performed songs by Schubert and Sjoberg; Li Zhao a Chinese piano song, Norbert Lutz delivered clarinet improvisations; Jordan Chill played a Beethoven sonata and improvisations thereof, Oleg Anzutkin a guitar solo guitar; Ilia Kulikov delivered a piano potpourri; Rob Tycko, Henrike Heise, and Zoltan Szakacs played a Suite by Milhaud and joined forces with Duo Dopico after the intermission to finish off for the evening with a Mozart quintet. On Thursday, the conference's musical program ended with the performance of Zoltán Szakács playing Mozart, Grieg, Glinka-Balakireva and Gulda.

Hartmut Oschkinat
November 2019

Raymond Andrew Prize 2019
Euromar 2019, Berlin

Thach V. Can

New Methods for Dynamic Nuclear Polarization in Insulating Solids: the Overhauser Effect and Time Domain Techniques

Abstract:
Dynamic nuclear polarization (DNP) is now established as a powerful technique for improving the sensitivity of NMR signals by several orders of magnitude, enabling otherwise impossible experiments. Unfortunately, the enhancements obtained at high magnetic fields (> 9 T) are only a small fraction of the theoretical limit due to the fact that current DNP mechanisms, including the cross effect and solid effect, utilize continuous wave (CW) microwave irradiation, and scale unfavorably with B_0. This has motivated us to develop new DNP methods that do not suffer from the same field dependences.
Our first attempt resulted in the observation of the Overhauser effect in insulating solids doped with 1,3-bisdiphenylene-2-phenylallyl (BDPA) or sulfonated-BDPA (SA-BDPA) radical. As opposed to all other CW DNP mechanisms, the enhancement of the OE in insulating solids scales favorably with B_0, increasing in magnitude in going from 5 T, to 9.4 T, to 14.1 T, and to 18.8 T. This finding sheds a new light on the seemingly well-understood Overhauser effect.

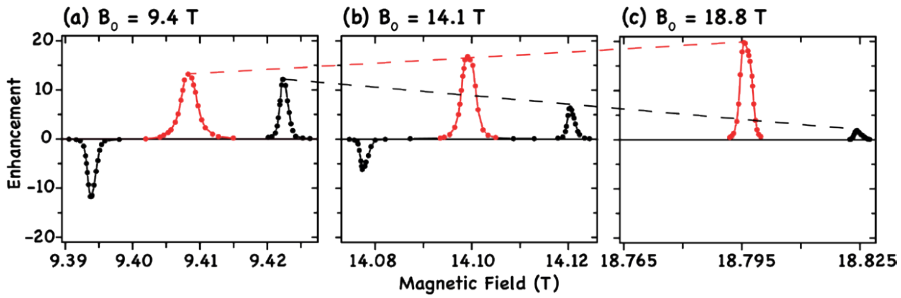


Figure 1: DNP field profiles at increasingly high magnetic fields of a polystyrene sample doped with 2% BDPA radical. The Overhauser effect (red) increases with the magnetic field, whereas the solid effect (black) decreases quickly.

Our second approach is to perform time domain or pulsed DNP, which differs fundamentally from CW DNP, and like CP and INEPT transfers, is in principle independent of B_0. In particular, we have investigated the performance of two related pulse sequences including the nuclear orientation via electron spin locking (NOVEL) and integrated solid effect (ISE) at magnetic fields ranging from 0.35 T to 3.35 T. The NOVEL pulse sequence relies on a matching condition between the nuclear Larmor frequency and the electron Rabi frequency, resulting in a fast polarization transfer from electron to protons (hundreds of ns time scale).

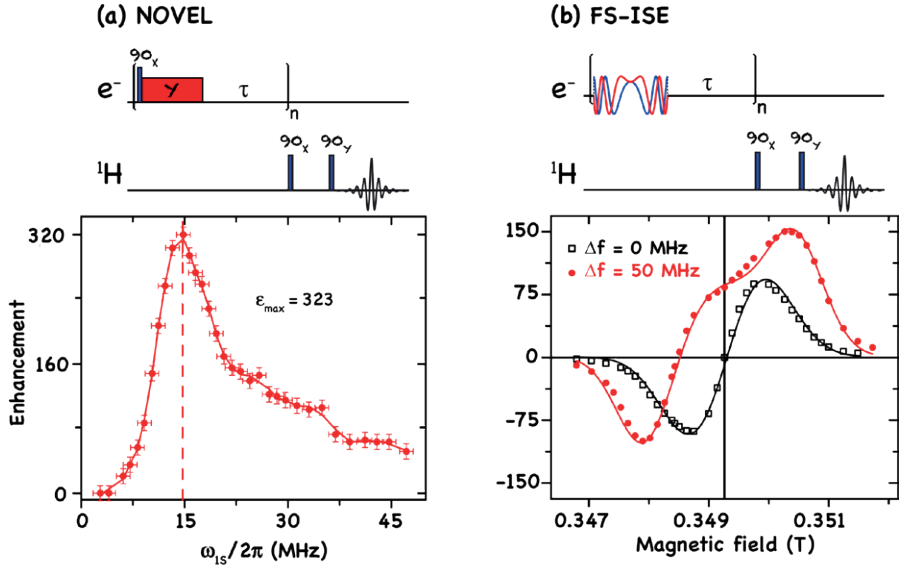


Figure 2: (a) Matching condition for the NOVEL pulse sequence. Maximum enhancement was observed at 15 MHz of the electron Rabi frequency which matched with the proton Larmor frequency at 0.35 T. (b) DNP field profiles of the frequency-swept integrated solid effect (red) and solid effect (black). FS-ISE field profile comprises of the ISE which is dominating in the center of the profile (on resonant irradiation) and the „stretched" solid effect which is similar to the solid effect (off resonant irradiation) with the forbidden transitions moving away from the center.

Furthermore, we showed that adding amplitude modulation to the microwave field, analogous to a ramped CP experiment, led to longer mixing time (µs time scale) but improved the enhancement by a factor of 1.4 to 2. Finally, we implemented a new version of the integrated solid effect (ISE) by modulating the microwave frequency instead of sweeping the B_0 which is technically challenging in high field superconducting magnets. In comparison to NOVEL, ISE gives similar DNP enhancement even far below the NOVEL condition. Our study sets the foundation for further development of time domain DNP at high fields.

Thesis Supervisor: Robert G. Griffin
(complete thesis can be found in MIT libraries: https://dspace.mit.edu/handle/1721.1/112433

Report:
11th Alpine Conference on Magnetic Resonance in Solids

15th-19th September 2019, Chamonix (France)

Scientific committee: Lucio Frydman (Weizmann Institute), Arno Kentgens (Radboud University), Tatyana Polenova (University of Delaware)

Organizing committee: Jean-Nicolas Dumez (Université de Nantes), Michal Leskes (Weizmann Institute), Józef Lewandowski (University of Warwick), Charlotte Martineau-Corcos (Université de Versailles Saint-Quentin), Paul Schanda (Institut de Biologie Structurale Grenoble)

The Alpine Conference on Magnetic Resonance in Solids 2019 took place in Chamonix, France, from Sunday 15th to Thursday 19th September 2019. The conference gathered over 180 participants from more than 20 different countries, for 4 intense days of scientific exchanges on Magnetic Resonance in Solids, with over 130 submitted abstracts.

The talks given at the conference were organized in four plenary sessions including a prize session. They covered a broad range of topics including the latest developments in areas such as dynamic nuclear polarization and ultrafast MAS ^{1}H NMR, and exciting applications in systems ranging from concrete to amyloid fibrils. There were 9 invited lectures, including one in the field of EPR and one in MRI, and 16 promoted talks selected from the abstracts.

The Regitze R. Vold Memorial Prize was awarded to Dr. Melanie Rosay, from Bruker Biospin, for her outstanding scientific and technological contributions and, specifically, enabling the broad applications of commercial DNP technology worldwide. The Vold Prize is awarded to an outstanding contribution in magnetic resonance in solids, selected by the scientific committee.

The Caldarelli Prize in Magnetic Resonance for Young Investigators was awarded to Dr. Aaron Rossini, from Iowa State University, for his outstanding and broad impact contributions to the field of magnetic resonance in solids. The Caldarelli prize recognises the contribution of young scientists (within 10 years of completing their Ph.D. degree), and is sponsored by Bruker Biospin.

Two afternoons were dedicated to round-table sessions, during which small groups of participants engage in focused discussions on the basis of someone's abstract and pitch presentation. Roundtables were first introduced to the Alpine Conference in 2017, and they have again been very enthusiastically received by the participants, resulting in two afternoons of lively scientific discussions.

Two Young Scientists awards, sponsored by Elsevier, were given based on the roundtable sessions. The SSNMR prize went to Dr. Adam Smith, from CEA Grenoble, whose roundtable presentation was the highest-rated by the participants; the JMR prize went to Alexander Malär, from ETH Zurich, whose roundtable abstract was the most solicited.

A perspective session was held on Tuesday evening, during which invited lecturers shared a personal view on specific questions in magnetic resonances in solids that they had selected. The session took place after a free afternoon during which participants had the opportunity for a walk or a hike. On Wednesday evening, a discussion on the global helium supply was chaired by Sophia Hayes, and participants shared knowledge on this important question.

The conference was held at the centre des congrès de Chamonix, in the familiar setting of the Majestic building. Industrial and academic sponsors were present and contributed to the scientific content and exchanges, as well as to the social dimension of the conference. A "wine and cheese" evening was organized by CortecNet on the second day, and an aperitif was organised by Bruker Biospin on the evening of the third day.
Thanks to the generosity of sponsors, the conference was able to award 17 student stipends, which covered registration costs and accommodation, on the basis of their scientific abstract and CV. Participation of young scientists is an important aspect of the conference.

The next edition of the Alpine Conference will take place in Chamonix from Sunday 12th to Thursday 16th September 2021. The scientific committee is composed of Anja Böckmann (MMSB Lyon), Alexej Jerschow (New York University), and Anne Lesage (CRMN Lyon).

The organising committee is very grateful to the sponsors: Bruker, CEA, CortecNet, Doty Scientific, Elsevier, Jeol, the National High Magnetic Field Laboratory, NMR Bio, NMR Service, Phoenix NMR, RMN GBP, Rototec/Spintec, and RS2D, for supporting the conference. The contribution of Bruker, whose major support is essential to the conference, is especially acknowledged. The organising committee would also like to thank the scientific committee and all the participants for their active participation. The dedication of Ms. Roudier and the personnel of the centre des congrès is warmly acknowledged.

First announcement

XV International Conference on The Applications of Magnetic Resonance in Food Science

On behalf of the organizing and scientific committees, we are delighted to announce the next International Conference on the Applications of Magnetic Resonance in Food Science MRFOOD2020 which will be held at Aarhus University, Denmark, June 2-5, 2020.

MRFood2020

June 2 to 5, Aarhus - Denmark

For the fifth time, the conference will be organized under the auspices of the groupement AMPERE. The program will be divided into series of oral and poster presentations comprising new techniques and applications in low and high field NMR. Eight plenary speakers from all over the world will give us their perspective on the challenges and opportunities of new applications of MR tools aimed at improving our knowledge on complex food systems.

For more detailed information and registration, visit the website
www.conferences.au.dk/mrfood2020/

Call for nominations
AMPERE Prize for Young Investigators 2020

The AMPERE prize has recently been redefined and is now given to a young principle researcher (a "rising star") for her/his first achievements in her/his independent career. There is no strict age limit but typically researchers below the age of forty are envisioned. The prize is given biannually.

The committee now calls for Nominations for the AMPERE Prize 2020 for a young principal investigator in the field of magnetic resonance. The prize will be presented during the EUROMAR in Bilbao (Spain) July 5th to July 9th 2020. The prize carries a value of € 2000.

You are kindly invited to submit nominations by e-mail to the president of the prize committee

ampereprize@ampere-society.org

Suggestions must be received by **15th February 2020** and should include the following documents:

- Nomination letter
- Curriculum vitae
- List of publications and presentations at conferences

For a list of past AMPERE Prize winners see:
www.ampere-society.org

Call for nominations
Raymond Andrew Prize 2020

In memory of Professor Dr. Raymond Andrew and to honor his pioneering work in the field of magnetic resonance, the AMPERE Group has founded the Raymond Andrew Prize. The prize is awarded to young scientists for an outstanding PhD thesis in magnetic resonance.

For the Raymond Andrew Prize 2020 the AMPERE Prize Committee is seeking your help in searching for qualified candidates who completed their dissertation during the period of 2018/2019. The prize will be presented during EUROMAR in Bilbao (Spain) July 5th to July 9th 2020.

You are kindly invited to submit nominations by e-mail to
andrewprize@ampere-society.org

Suggestions must be received by **15th February 2020** and should include the following documents:

- Nomination letter
- Curriculum vitae
- List of publications and presentations at conferences
- PhD thesis in PDF

The thesis should be written in English. In exceptional cases, the thesis may also be submitted in triplicate as a hardcopy to the AMPERE Secretariat.
Submissions that arrive too late will automatically be transferred to the next year. The prize committee will reconsider excellent contributions for two years in a row.

For a list of past Andrew Prize winners see:
www.ampere-society.org

Why the Groupement AMPERE launched Magnetic Resonance

As announced in the previous issue of the Bulletin, Magnetic Resonance is now on-line (https://www.magnetic-resonance-ampere.net). We are looking forward to publishing papers that we expect to meet the standards of the best journals. There are numerous advantages of Open Access publishing for both authors and readers. After completing review and publication, the corresponding author (except if he/she has been granted a waiver or his/her institution covers the charges) will be billed modest Author Page Charges (APCs) of 75-80€ per printed page. For comparison, other "gold" OA charges per paper are $1,500 for Sci. Rep, $1,600 for PLOS One, $2,909 for Nucleic Acids Research, and $750 for ACS Omega. For "hybrid" OA, the authors have to pay (in addition to the subscription fees paid by their libraries) $3,000 for J. Biomolecular NMR, and $3,100 for J. Magnetic Resonance.

All submitted preprints, once they have been accepted for review, will be given a DOI and will be deposited on a website called "Magnetic Resonance Discussions", for all to see, comment and critique, like with ArXiv, ChemRxiv and similar repositories. Once the reviewers' reports have been received, the associate or executive editor may invite the authors to submit a suitably revised manuscript, and take a decision on acceptance at the end of a 4-week discussion period. Reviewer comments and author responses will also be made public after final acceptance. The reviewers may elect to reveal their identity. We believe that the transparency of this two-stage model (which has been practiced with great success by several journals belonging to the European Geosciences Union, or EGU) will foster quality in a way that most established publishers are unwilling or unable to offer.

It takes five ingredients to set up a new journal: (i) an owner, (ii) a publisher, (iii) an editorial board, (iv) motivated authors, and (v) a favourable economic environment.

(i) It did not take long to realize that the Groupement AMPERE could act as an ideal owner. In the past however, similar "learned societies" have not always been immune towards friendly buy-outs and hostile takeovers. Thus, the venerable Comptes Rendus de l'Académie des Sciences, which go back all the way to 1666, are now produced by Elsevier. The no less respectable Proceedings of the Royal Society, which was founded in 1660, and a wide range of journals published by the Royal Society of Chemistry (RSC), are still produced by the Royal Society, but these renowned publications have come to be perceived as a safe source of revenue, so that the RSC now charges high prices for their excellent services. Likewise, the American Chemical Society (ACS) owns and produces a wide range of excellent journals at a considerable cost to libraries. Rumour has it that the American Physical Society (APS), which has long stayed aloof from aggressive commercial practices, is now beginning

to look at the ACS as a model. Of course, the mere fact that the Groupement AMPERE is a respectable learned society does not offer any guarantees, but we believe that its current officers can be trusted, and that they will not sell Magnetic Resonance to the highest bidder.

(ii) We have been lucky to find an able publisher, Copernicus, who has been working successfully with other learned societies such as the EGU, with whom they developed a working model that goes much beyond the minimum expectations of most other OA journals.

(iii) It has been a rewarding experience to invite some 50 colleagues to join our editorial board. Almost all of them accepted by return of email. Some asked thoughtful and legitimate questions, that we tried to answer in a set of "frequenty asked questions" (FAQ) that can be found, inter alia, on our website (http://paris-en-resonance.fr/images/Magn-Reson-FAQ). Very few have declined, either on the grounds that Green OA should suffice, or because other specialized journals such as JMR, JBNMR, MRC, and AMR might suffer from competition.

(iv) We hope to find many motivated authors who share our views. However, although many senior authors would prefer to ignore the journals' dreaded impact factors, they know full well that their students, post-docs and staff are beholden to these metrics. Indeed, the younger generations tend to view publishing in "prestigious" journals as a critical stepping-stone to their future career. Fortunately, not all students and post-docs care about publishing in prestigious journals: many realize that there is a much larger job market outside academia, in the world of start-ups, dotcoms, and even in established pharmaceutical companies, where bibliometrics do not play a decisive role. Indeed, over 90 % of PhD students go on to careers outside academia. We also note that appointment committees at leading universities in France, the UK and USA have begun to evaluate actual research rather than bibliometrics, for they have grown tired of appointing young faculty merely on the grounds that they co-authored a paper in a prestigious journal.

(v) In many ways, the economic environment appears favourable today to set up a new OA journal. Stratospheric prices are being charged by commercial publishers both for traditional library subscriptions (which provide access to students and researchers of universities and institutions) and so-called "hybrid" OA fees (which provide access to all those who do not have such privileges, including scientists from less favoured countries and institutions, retired faculty, commentators, writers, journalists and, last but not least, the general public at large.) Several major funding agencies, such as the EU, the CNRS in France, etc., not only challenge the value of metrics (for example by adhering to the Declaration on Research Assessment or DORA, see https://sfdora.org/read/) but have begun to make a stand against unreasonable fees, since they question the legitimacy of charging twice ("double dipping") by billing both for regular subscription and for hybrid OA fees. Ironically, these legitimate demands of the funding agencies have led to an incredible proliferation of predatory OA journals. Many established commercial

publishers have added more confusion by proposing "green" OA models, where papers are kept behind a paywall for a "embargo" period of 6, 12 or 24 months, at which time they become freely accessible. In the green OA model, articles can only be made available to the general public from the start in repositories like ArXiv, but merely in an unformatted preprint form that does not carry the imprimatur of peer reviewers and editors. The green OA model appears to be favoured by some granting agencies in the US. This business model correctly recognizes that journals have to be paid for their services in one way or another. In an encouraging sign of change, a growing list of renowned research institutions like ETH Zürich, Iowa State, TU Delft, TU Munich, FU Berlin, the Helmholtz Association of Research Centers, the Leibniz Research Alliance, and the Max Planck society, etc., have begun to pay for OA fees charged by trusted publishers (https://publications.copernicus.org/for_authors/financial_support.html).

We believe that our initiative to start Magnetic Resonance is timely and will fit smoothly into a complex economic environment, and that it will foster quality by transparency. We hope that our initiative will trigger similar enterprises in other areas of physics, chemistry, biology and medicine.

Geoffrey Bodenhausen, Gottfried Otting and Matthias Ernst

Executive Officers and Honorary Members of the AMPERE Bureau

The AMPERE BUREAU includes the executive officers (which take the responsibility and the representation of the Groupement between the meeting of the committee), the honorary members of the Bureau and the organizers of forthcoming meetings.

Bernhard. BLÜMICH *President*
Macromolcular Chemistry, RWTH Aachen University, D-52074 Aachen, Deutschland
Tel. +49 241 802 64 20, Fax +49 241 802 21 85, e-mail: bluemich@itmc.rwth-aachen.de

Janez DOLINŠEK *Vice President*
Institute Jozef Stefan, Department F5, Jamova 39, SI-1000 Ljubljana
Tel. +386 1 4773 740, Fax +386 1 4263 269, e-mail: jani.dolinsek@ijs.si

Anja BÖCKMANN *Vice President*
Institute of Biology and Chemistry of Proteins, IBCP, F-69367 Lyon, France
Tel. +33 472 72 26 49, Telefax +33 472 72 36 04, e-mail: anja.bockmann@ibcp.fr

Matthias ERNST *Secretary General*
Laboratorium für Physikalische Chemie, ETH Zürich, CH-8093 Zurich, Switzerland,
Tel. +41 44 632 4366, Fax +41 44 632 16 21, e-mail: maer@nmr.phys.chem.ethz.ch

Sebastian HILLER *Executive Secretary*
Biozentrum, University of Basel, Klingelbergstrasse 50/70, CH-4056 Basel, Switzerland
Tel. +41 61 207 20 82, e-mail: sebastian.hiller@unibas.ch

Sabine VAN DOORSLAER *EF-EPR Representative*
University of Antwerp, Departmet of Physics, Campus Drie Eiken, Universiteitsplein 1, 2610 Wilrjik, Belgium, e-mail: sabine.vandoorslaer@uantwerpen.be

Melanie M. BRITTON *SRMR Representative*
University of Birmingham, Birmingham, B15 2TT, UK
office: +44 121 4144391, e-mail: m.m.britton@bham.ac.uk

Yi-Qiao SONG *MRPM Representative*
Schlumberger-Doll Research, 1 Hampshire Street, Cambridge, MA 02139-1578 USA
Phone: +1 617 768 2333, e-mail: ysong@slb.com

John VAN DUYNHOVEN *MR-Food Representative*
Unilever N.V., 100 Victoria Embankment, London EC4Y 0DY, United Kingdom, e-mail:
john-van.duynhoven@unilever.com

Geoffrey BODENHAUSEN *Hyperpolarisation Representative*
ENS - Département de chimie, 24, rue Lhomond, 75005 Paris, France,
e-mail: geoffrey.bodenhausen@ens.fr

Gottfried OTTING *Publication Division*
Australian National University, College of Science, Canbera ACT 2600, Australia, Tel: +61 2 612 565 07, e-mail: gottfried.otting@anu.edu.au

Thomas PRISNER *Euromar Representative*
Goethe University Frankfurt, Institute of Physical and Theoretical Chemistry, 60438 Frankfurt am Main, Germany, Tel: +49 (0) 69 798-29406, Fax: +49 (0) 69-798-29404 , e-mail: prisner@chemie.uni-frankfurt.de

Arno KENTGENS *Euromar Treasurer*
Institute of Molecules and Material, Radboud University, Heyendaalseweg 135, 6525 Aj Nijmegen, Netherland, Tel. +31 024 365 20 78, e-mail: a.kentgens@nmr.ru.nl

Beat H. MEIER *Past President*
Laboratorium für Physikalische Chemie, ETH Zürich, CH-8093 Zurich, Switzerland,
Tel. +41 44 632 44 01, Fax +41 44 632 16 21, e-mail: beme@nmr.phys.chem.ethz.ch

Hans Wolfgang SPIESS *Honorary Member*
Max-Planck Institut für Polymerforschung, Ackermannweg 10, POB. 3148, D-55021 Mainz, Germany, Tel. +49 6131 379120, Fax +49 6131 379320, e-mail: spiess@mpip-mainz.mpg.de

Stefan JURGA *Honorary Member*
Instytut Fizyki, Uniwersytet im. A. Mickiewicza, Zaklad Fizyki Makromolekularnej, Umultowska 85, PL-61-614 Poznan, Poland
Tel. ++48 61 829 5290, Fax ++48 61 829 5290, e-mail: stjurga@main.amu.edu.pl

AMPERE Committee

Sharon Elizabeth Marie ASHBROOK (2016 - 2020)
School of Chemistry, University of St. Andrews, North Haugh, St. Andrews, KY16 9ST, United-Kingdom

Juras BANYS (2016 - 2020)
Vilnius University, Department of Radiophysics, Saulétekio 9 2040 Vilnius, Lithuania

Rolf BOELENS (2016 - 2020)
Bijvoet Center for Biomolecular Research, Utrecht University, Padualaan 8, NL-3584 CH Utrecht, The Netherlands

Vladimir CHIZHIK (2016 - 2020)
University of St. Petersburg, Quantum Magnet.Phen.,Fac.of Physics, RU-198504 St. Petersburg, Russia

Peter CROWLEY (2018 - 2022)
Chemistry, National University of Ireland, University Road, Galway, Ireland

Janez DOLINŠEK (2016 - 2020)
Institute Jozef Stefan, Jamova 39, SI - 1000 LubljanaL, Slovenia

Isabella Caterina FELLI (2016 - 2020)
Department of Chemistry and Center for Magnetic Resonance (CERM), University of Florence Via L. Sacconi 6 50019 Sesto Fiorentino, (FI), Italy

Ana Maria Pissarra Coelho GIL (2018 - 2022)
Department of Chemistry, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aviero, Portugal

Patrick GIRAUDEAU (2016 - 2020)
Université de Nantes, Faculté des Sciences et Techniques, 2 rue de la Houssinière, 44322 NANTES Cedex 03, France

Kristaps JAUDZEMS (2019 - 2023)
Latvijas Organiskās sintēzes institūts, Aizkraukles 21, Rīga, LV-1006, Latvija

Robert KONRAT (2017 - 2021)
Max F. Perutz Laboratories, Campus Vienna Biocenter 5, 1030 Vienna, Austria

Wiktor KOZMINSKI (2016 - 2020)
Biological and Chemical Research Centre, University of Warsaw, Krakowskie Przedmiescie 26/28, 00-927 Warsaw, Poland

Birthe Brandt KRAGELUND (2018 - 2022)
Department of Biology, University of Copenhagen, Ole Maaløes Vej 5, 2200 Copenhagen, Denmark

Predrag NOVAK (2019 - 2023)
Division of Analytical Chemistry, Department of Chemistry, Faculty of Science, University of Zagreb, Horvatovac 102A, HR-10 000 Zagreb, Croatia

Miquel PONS (2016 - 2020)
Institute for Research in Biomedicine, University of Barcelona, Josep Samitier 1-5, 80828 Barcelona, Spain

Indrek REILE (2019 - 2023)
National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia

Frode RISE (2018 - 2022)
Department of Chemistry, University of Oslo, PO Box 1033 Blindern, 0315 Oslo, Norway

Sharon RUTHSTEIN (2018 - 2022)
Department of Chemistry, Bar-Ilan University, Ramat-Gam, 5290002, Israel

Ferenc SIMON (2017 - 2021)
Budapest University of Technology and Economics, Műegyetem rkp. 3, 1111 Budapest, Hungary

Jiri SPEVACEK (2016 - 2020)
Inst. of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, 162 - 06 Prague 6, Czechia

George SPYROULIAS (2017 - 2021)
Department of Pharmacy, School of Health Sciences, University of Patras, Panepistimioupoli – Rion, 26504 Patras, Greece

Ville-Veikko TELKKI (2016 - 2020)
Department of Physics, University of Oulu, P.O. Box 3000, 90014 Oulu, Finland

Christina THIELE (2016 - 2020)
Technische Universität Darmstadt, Alarich-Weiss-Strasse 16, 64287 Darmstadt, Germany

Daniel TPOGAARD (2017 - 2021)
Physical Chemistry, Lund University, Box 124, 221 00 Lund, Sweden

Sabine VAN DOORSLAER (2016 - 2020)
SIBAC Laboratory, University of Antwerp, Universiteitsplein 1, B-2610 Wilrijk, Belgium

Paul VASOS (2019 - 2023)
Extreme Light Infrastructure – Nuclear Physics (ELI-NP), Horia Hulubei Institute for Nuclear Physics (IFIN-HH), Reactorului Str. 30, Magurele Campus, Bucharest, Romania

Emeritus members

Liudvikas KIMTYS
Department of Physics, Vilnius University, Universiteto Str. 3, VILNIUS 2734, Lithuania
Fani MILIA
NRC Demokritos, Physics Department, Aghia Paraskevi Attikis, GR - 15310 ATHENS, Greece
J. HENNEL, Inst. of Nucl. Phys. Ul. Radzikowskiego 152, PL - 31342 KRAKOW 23, Poland

Honorary members

Richard R. ERNST
Laboratorium für Physikalische Chemie, ETH Zürich, CH-8093 ZURICH, Switzerland
Jean JEENER
Université Libre - Plaine, CP 223, Bld. du Triomphe, B - 1050 BRUXELLES, Belgium
Karl Alexander MÜLLER
IBM Zurich Research Laboratory, Säumerstrasse 4, CH - 8803 RÜSCHLIKON, Switzerland
Kurt WUETHRICH
Inst. f. Molekularbiologie u. Biophysik, ETH Zürich, CH-8093 ZURICH, Switzerland

Guest members

Alexander PINES
Dept. of Chemistry, University of California, BERKELEY CA 94720, USA, Delegate of ISMAR
James A. NORRIS
Dept. of Chemistry, University of Chicago, South Ellis Ave. CHICAGO IL 6037-1403, USA
Delegate of the International EPR Society
Keith A. McLAUCHLAN
Physical Chemistry Laboratory, Oxford University, South Parks Road, OXFORD OX1 3QZ, UK Delegate of the International EPR Society
David AILION
Dept. of Physics, Univ. of UTAH, 304 J. Fletcher Building, SALT-LAKE-CITY 84112, Utah, USA
Sung Ho CHOH
Department of Physics, Korea University, SEOUL 136-701, Republic of Korea
Daniel FIAT
University of Illinois, Dept. of Physiology and Biophysics, POB 6998, CHICAGO IL 60680, USA
Eiichi FUKUSHIMA
ABQMR, 2301 Yale Blvd., SE, Suite C2, ALBUQUERQUE, NM 87106, USA

Future conferences

Ampere Events 2020

17th International School-Conference ‚Magnetic resonance and its applications‘ Spinus 2020	Saint Petersburg (Russia)	March 29 to April 4 2020
MR FOOD 2020	Aarhus	June 2-5 2020
Ampere NMR School	Zakopane (Poland)	June 2020
Euromar 2020	Bilbao (Spain)	July 5-9 2020
15th MRPM	Tromsø (Norway)	August 24-28 2020
‚HYP20‘ Hyperpolarized Magnetic Resonance 2020	Lyon (France)	August 30 to September 2 2020

non Ampere Event 2020

Summer School „General NMR“ Part I	Windischleuba (Germany)	23-29 February 2020

Ampere Event 2021

Euromar 2021	Protorož (Slovenia)	4-8 July 2021
Alpine Conference on Magnetic Resonance in Solids	Chamonix (France)	12-16 September 2021

Ampere Event 2022

Euromar 2022	Utrecht (Netherlands)	3-7 July 2022

Ampere Event 2024

HYP24	Leipzig (Germany)	September 2024