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d'informations mutuelles

AMPERE



SE CONNAÎTRE, S'ENTENDRE, S'ENTRAIDER

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Editorial

Dear members of Groupement AMPERE,
Group leaders should not be let back into the lab, should they? Melanie Britton, representative of the Spatially Resolved Magnetic Resonance subdivision, speaks in her portrait on pages 2-3 about the horror in the eyes of students when supervisors do put their hands on equipment. If I am honest, I saw this look - but no, let's stop here! The same interview tells you why poorly engineered air conditioning may be a blessing.

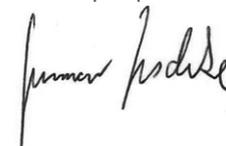
The conference reports in this issue are on MRPM14 (see previous issue for the poster prize abstracts) and, very freshly, on the Spinus International School and Conference that took place in St. Petersburg in April. The latter report includes abstracts of the award-winning oral report by Ekaterina Pokochueva and of the prize-winning poster by Magdalena Knapkiewicz.

Let me finish with a personal note. After 12 years as Secretary General of Groupement AMPERE, I will step down this summer at the EUROMAR Conference in Nantes. I feel that another person with a new view and fresh ideas will be a blessing for our Society and that, in general, it is quite boring to see the same person in office for a too long spell of time. To tell the truth, I am also looking forward to attending EUROMAR conferences with more time to spend on scientific discussions. That said, I really enjoyed my time in the Bureau AMPERE and can only recommend that you, too, assume similar responsibility for some time. It widens your view, you meet many interesting people, and – you will be surprised quite often.

Near the end of my last term, I want to thank the people who made this a pleasure. Hans Wolfgang Spiess, former President, almost literally dragged me into the whole business at the 31st Congress AMPERE in Poznan. Beat Meier, my predecessor in this position and the first President whom I served, taught me the ropes. Bernhard Blümich, current President, was the source of inspiration for refreshing the Bulletin and our Website, feats that were accomplished not by me, but by Kristina Comiotto and René Tschaggelar from my group. Over the years, many officials in the AMPERE Bureau and many Committee members helped and encouraged me. Last, but not least, Matthias Ernst, who was the Executive Secretary during all my terms, always was a reliable and calm source of advice and my safety net whenever I missed a step.

Finally, I want to thank you for being members of Groupement AMPERE. Any society depends much more on the actions of and the interactions between its many members than on the few people in office.

Gunnar Jeschke
Secretary General of Groupement



Portrait: Prof. Melanie M. Britton

- why magnetic resonance and why NMR and MRI?

I sort of fell into magnetic resonance at the end of my undergraduate degree when I chose a PhD on ^{13}C NMR relaxation. I then moved into MRI for my first postdoc, where I stayed. In MRI, I have found the perfect way to satisfy my passions for better understanding chemical processes and developing magnetic resonance techniques.

- what is your favorite frequency?

300 MHz. Apart from a brief period at Nottingham University working at 85 MHz, it seems I have spent pretty much my whole career working at 300 MHz and nearly all of my papers are published with data at this frequency. It's good for my work, because it is high enough to get good sensitivity and resolution, but low enough to not be too bothered by susceptibility artefacts.

- what do you still not understand?

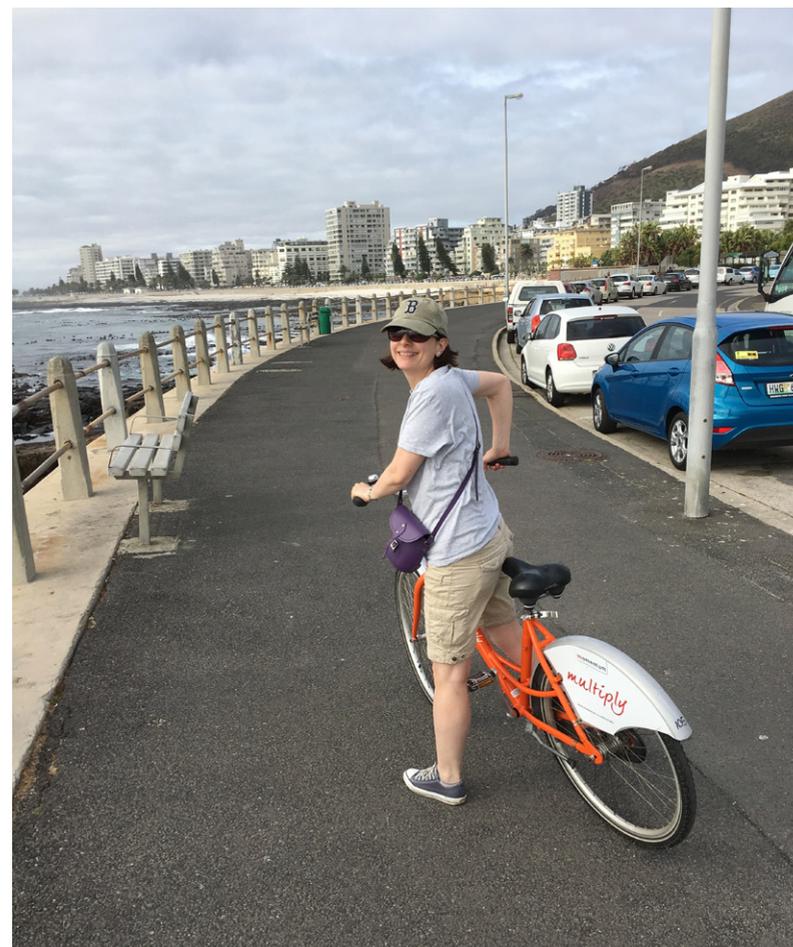
There are many things I don't understand, but I think what frustrates me the most is not understanding why some chemical systems are so sensitive to perturbation. I have spent years trying to observe certain chemical processes and never see them, until I least expect it and frequently at a time where they are more of a hindrance than a help.

- luckiest experiment you have ever done.

I am not sure if this counts as lucky, but I published a paper on temperature forcing in an autocatalytic chemical reaction which was made possible by the poor air-conditioning unit in our lab. It took me ages to understand why we observed oscillatory behavior in the reaction we were studying and it suddenly came to me that it was because our air-con was not very stable. We would never have seen this interesting phenomenon without the unstable air-con unit, so I guess that counts as lucky. The air-con was replaced after the paper was accepted for publication.

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

Hmm, I am not sure I would want to go public with any of my mistakes. Though, a few years back I demonstrated why group leaders should probably not be let back in the lab when I removed an RF coil on a diffusion probe, without switching the water cooling off first. My students stared at me in horror (and rightly so) as water spurted everywhere.



- most memorable conference story

I once sat on a table at a conference dinner with a couple of very eminent NMR professors who were responsible for the table catching fire. I was an innocent bystander.

- with whom (historical person) would you like to meet?
Marie-Anne Lavoisier.

- when do you get your best ideas?

I once had an idea for an experiment that come to me in a dream, but usually my best ideas come to me in the shower.

- if you had just one month time for travelling - where would you go to? South America – I've been to every other inhabited continent.

- your idea of happiness.

Scientifically, that buzz you get when a difficult experiment works or when you suddenly understand an observation that has been bugging you for a while. At home, cooking something I have grown in my garden.

Position:

Senior Lecturer in Physical Chemistry, University of Birmingham

Awards:

Award for Excellence in Doctoral Supervision (2012), University of Birmingham; EPSRC Advanced Research Fellow (2000); ANZIP Condensed Matter Physics Conference 'Best Talk by a Young Scientist' (1997)

Homepage: <https://www.birmingham.ac.uk/research/activity/chemistry/britton/index.aspx>

Education:

BSc in Chemistry, University of Birmingham

PhD in Physical Chemistry, University of Surrey

Interests:

Gardening, cooking, travelling and understanding human nature.

Report on the 14th international Bologna Conference on Magnetic Resonance in Porous Media (MRPM14)



Conference Co-Chairs: C. Russell Bowers and Sergey Vasenkov (Gainesville, FL).

Steering Committee: Yiqiao Song (Chair, Schlumberger, Boston, MA), Petrik Galvosas (Wellington, NZ), Sergey Vasenkov (Gainesville, FL), Sabina Haber-Pohlmeier (Aachen), William Bortolotti (Bologna), Clifford Russell Bowers (Gainesville, FL), Paola Fantazzini (Bologna)

International Advisory Committee: R. Acosta, G. Ferrante, N. Nestle, M. Appel, E. Fukushima, B. Price, I. Ardelean, P. Galvosas, J. Seland, C. Arns, D. Grebenkov, J. Seymour, M. Bencsik, G. Guthausen, Y. Song, B. Blümich, S. Haber-Pohlmeier, S. Stapf, T. Bonagamba, M. Johns, R. Valiullin, V. Bortolotti, M. Komsloh, S. Vasenkov, C.R. Bowers, I. Mastikhin, K. Washburn, M. Britton, C. Mattea, L. Xiao, P. Fantazzini, J. Mitchell

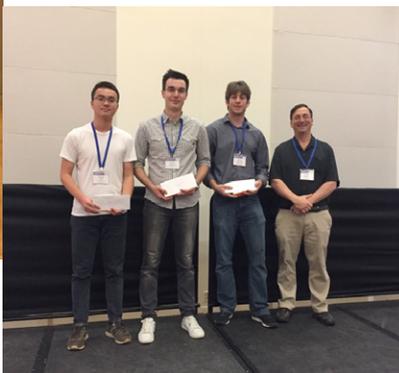
The 14th International Bologna Conference on Magnetic Resonance in Porous Media (MRPM14) convened from February 18-22, 2018 in the Reitz Union Conference Center on the campus of the University of Florida, Gainesville. It was the second time in the history of the conference that it was held in the western hemisphere. Approximately 120 attendees from 13 countries (Australia, Brazil, Canada, China, Denmark, Finland, France, Germany, Italy, New Zealand, Norway, UK, USA) participated in a stimulating and dynamic scientific program. Session topics included magnetic resonance methodology and hardware development for porous media studies, applications to plants, soil and the environment, nanoporous materials, petrophysics, diffusion and flow, hyperpolarization, low field spectroscopy, biomedicine, biophysics, and imaging. The program opened with plenary lectures by Jeff Reimer (UC Berkeley) and Jörg Kärger (University of Leipzig), followed by a welcome party at the Florida Museum of Natural History.

The conference was preceded by the two-day MRPM NMR School, which was attended by about forty students. Expert tutorials were presented by Jörg Kärger, Jeff Reimer, Frederic Mentink-Vigier (National High Magnetic Field Lab, Tallahassee), Shin Utsuzawa (Schlumberger-Doll Research), and Bernhard Blümich (RWTH Aachen University).

The Giulio Cesare Borgia Prize is awarded for the best presentation by a young researcher at the Bologna MRPM conference. This prize memorializes the contribution made by Dr. Borgia to the development of magnetic resonance in porous media and the attention he always paid to the enthusiasm, passion, and courage of young people who undertook the difficult and adventurous path of scientific investigation in this fascinating area of research. The 2018 prize went to Dr. Stefan A. Hertel (Shell Technology Center) for his innovative approach to spatial mapping of fluid types in porous media using fast, spatially resolved CPMG T_2 measurements. His presentation abstract is included in Bulletin 270. The prize committee was comprised of four previous Borgia Prize awardees plus the conference co-Chair.



Left: Dr. Stefan A. Hertel (Borgia Prize)



Right: Evan M. Forman, Artur Lozovoi and Yong Du (Poster Prizes)

There were twenty high-quality entries in the student poster competition. Members of the International Advisory Committee judged the posters. Awards were presented to Evan M. Forman (University of Florida, 1st place), Artur Lozovoi (Technische Universität Ilmenau, 2nd place), and Yong Du (University of Florida, 3rd place). Abstracts for their presentations are included in Bulletin 270.

The conference attendees enjoyed an unseasonably warm and sunny afternoon of discovery and sightseeing at the Kanapaha Botanical Gardens, and the conference banquet was held that evening in the University of Florida's Harn Museum of Art. Tours of the National High Magnetic Field

Laboratory's Advanced Magnetic Resonance Imaging and Spectroscopy (AMRIS) facility were also provided.

The MRPM International Advisory Committee met to consider several informal proposals for future venues for MRPM conferences, and it was unanimously agreed that the next MRPM conference (MRPM15) will be chaired by Kate Washburn (Nofima) in the city of Tromsø, Norway, a major cultural hub located North of the Arctic Circle.



Right: Jeff Reimer (plenary speaker), Chair of the Department of Chemical and Biomolecular Engineering, and the Warren and Katherine Schlinger Distinguished Professor, University of California, Berkeley.

Middle: Jörg Kärgel (plenary speaker), Professor Emeritus of Physics, University of Leipzig.

Left: Valencia Witherspoon, UC Berkeley PhD graduate with Jeff Reimer, now a postdoc at NIST.

Financial support for MRPM14 was provided through the generosity of the following corporate sponsors: Niumag, Bruker Pure Devices, Oxford Instruments, Tecmag, Magritek, Stelar, Schlumberger, Serengeo S.R.L, and the Alachua County Florida Office of Tourism. Funding was also provided by the following academic institutions: The National High Magnetic Field Laboratory (NSF Cooperative Agreement no. DMR-1644779 and the State of Florida), The University of Florida Departments of Chemistry and Chemical Engineering, the University of Florida Centers for Condensed Matter Sciences and Chemical Physics, and the University of Bologna. Thanks to Andrea Wherry of the UF Conference Department, all aspects of the conference ran smoothly.

Report on the 15th International School Conference «Magnetic Resonance and its Applications» Spinus 2018



Since 2004 the Saint-Petersburg University holds a series of annual „Spinus” School Conferences (an AMPERE event since 2016). The 15th Meeting “Spinus 2018” was opened on Monday, April 2nd, and was closed on Friday, April 6th, 2018.

Venue: the hotel „Baltiets” in Repino on the beach of the Gulf of Finland, 30 km north-west from the center of Saint Petersburg.
(<http://baltiets.ru/>)

The goal of the School-Conference is to provide a platform to young scientists and students for the use of all aspects of magnetic resonance methods and techniques as well as computational and theoretical approaches for the solving of fundamental and applied problems in physics, chemistry, medicine and biology.



The Meeting was attended by 151 participants from 15 countries (Belgium, China, Cuba, Egypt, Estonia, Finland, France, Germany, Italy, Poland, Russia, Spain, Sweden, Turkey, USA).

The Meeting was opened by the talk of Prof. V. I. Chizhik (Saint Petersburg, Russia) entitled “Some problems (difficulties) of quantitative analysis by NMR method and ways to solve them”.

During “Spinus 2018” there were 10 lectures, 36 oral (15-20’) and 54 poster presentations. Besides, for young scientists with poster presentations there was the opportunity to make an “oral blitz-report” (5’). More than 30 such reports were made during the conference. Many „mature” participants noted that this experiment was successful: it allowed young scientists to demonstrate their high level and gave them the confidence to participate at future conferences with full oral reports.



The organizers published the Book of Abstracts. Selected papers will be published in a special issue of the journal "Applied Magnetic Resonance". Barbara and Uwe Eichhoff (Germany) founded prizes of 200 and 100 Euro, respectively, for the best oral and poster reports of students and postgraduate students. Nominees were selected by an international commission. The Organizing Committee awarded:

the best oral report:

Ekaterina Pokochueva (Novosibirsk, Russia)

"NMR signal enhancement in hydrogenation reactions with parahydrogen" (page vis-à-vis)

The best poster presentation:

Magdalena Knapkiewicz (Poznan, Poland)

"Collective dynamics in various antiferroelectric liquid crystal mesophases probed by NMR relaxometry" (page 14)

The social program of the Spinus 2018 consisted of a welcome party, a conference dinner and a bus sightseeing tour of St. Petersburg.

Welcome to the next meeting "Spinus 2019": Saint Petersburg, Repino, on April 01, 2018!

<http://spinus.spb.ru/>

Award for the best oral report, Spinus 2018

Ekaterina Pokochueva (Novosibirsk, Russia)

NMR signal enhancement in hydrogenation reactions with parahydrogen

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Introduction:

Nuclear magnetic resonance spectroscopy is a highly informative method for studying chemical structures and properties of various compounds. However, one of its major disadvantages is low nuclear spin polarization, which leads to low signal sensitivity. In order to overcome this problem, several methods of hyperpolarization were developed - including parahydrogen-induced polarization (PHIP). PHIP is based on the conversion of correlated spin order of para-hydrogen ($p\text{-H}_2$) - a spin isomer of hydrogen with total nuclear spin $I=0$ - into polarization of a target molecule via catalytic hydrogenation. For a successful observation of PHIP effects in NMR spectra of hydrogenation products, two atoms from the same $p\text{-H}_2$ molecule should be added to the same product molecule - in other words, hydrogenation process should occur via pairwise addition of the hydrogen atoms [1]. A promising type of catalysts for the production of PHIP effects are supported metal catalysts, but the percentage of the pairwise addition on such catalysts is usually low, therefore, there is a necessity in systematic studies of the catalysts in hydrogenation reactions in terms of PHIP effects observation.

Liquid-phase hydrogenation:

In order to study PHIP effects in liquid-phase experiments, we performed hydrogenation of different phenylalkynes (phenylacetylene, 1-phenyl-1-propyne and 3-phenyl-1-propyne) with parahydrogen over different metal catalysts supported on TiO_2 (Rh/TiO_2 , Pd/TiO_2 , Ir/TiO_2 , Pt/TiO_2). It was found that all catalysts show different catalytic activity and selectivity that can be affected by both the nature of active metal and percentage of metal loading (Fig. 1).

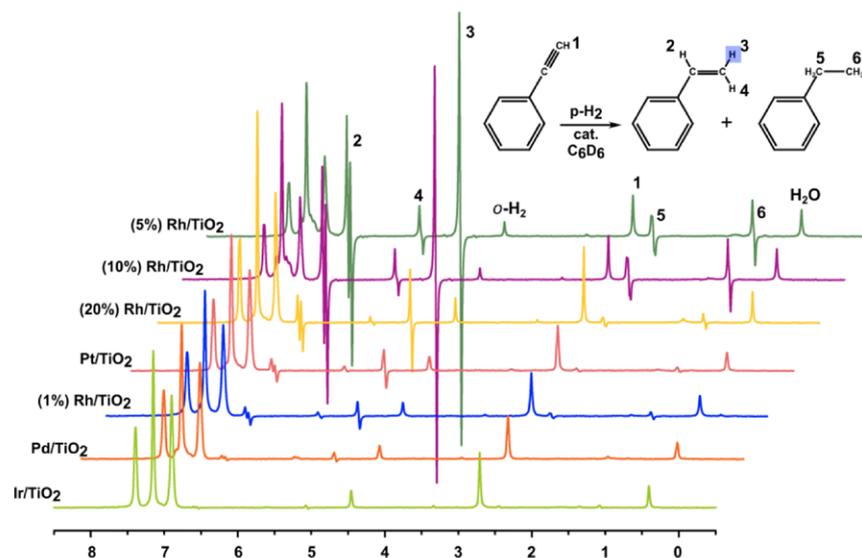


Figure 1. Reaction scheme of phenylacetylene hydrogenation and ^1H NMR spectra acquired during hydrogenation of phenylacetylene with parahydrogen over different catalysts

It was demonstrated that the most selective catalyst is Pd/TiO_2 – however, for the production of hyperpolarized product, Rh/TiO_2 with 5% metal loading was shown to be best for all substrates under investigation. Also this catalyst provided the highest conversion rate. Use of Ir/TiO_2 was found to be inappropriate, because the catalyst shows almost zero activity and doesn't sustain pairwise addition. In the study of liquid-phase hydrogenation reactions kinetics, it was shown that reaction order with respect to hydrogen is nearly the same for pairwise and non-pairwise addition – this fact, apparently, indicates the similar nature of catalytically active sites for pairwise and non-pairwise addition routes.

Gas-phase hydrogenation:

Although many catalysts of different nature were tested in various gas-phase hydrogenation reactions with parahydrogen, there is still no understanding of how the catalyst preparation method can affect on its selectivity towards pairwise addition. In order to find the influence of preparation method we tested a series of Rh/TiO_2 catalysts in 1,3-butadiene hydrogenation. The optimal catalyst for PHIP effects observation was found – it provides signal enhancement of ca. 200 fold, corresponding to 6% polarization (Fig. 2). Such values are the highest for Rh/TiO_2 catalysts reported to date.

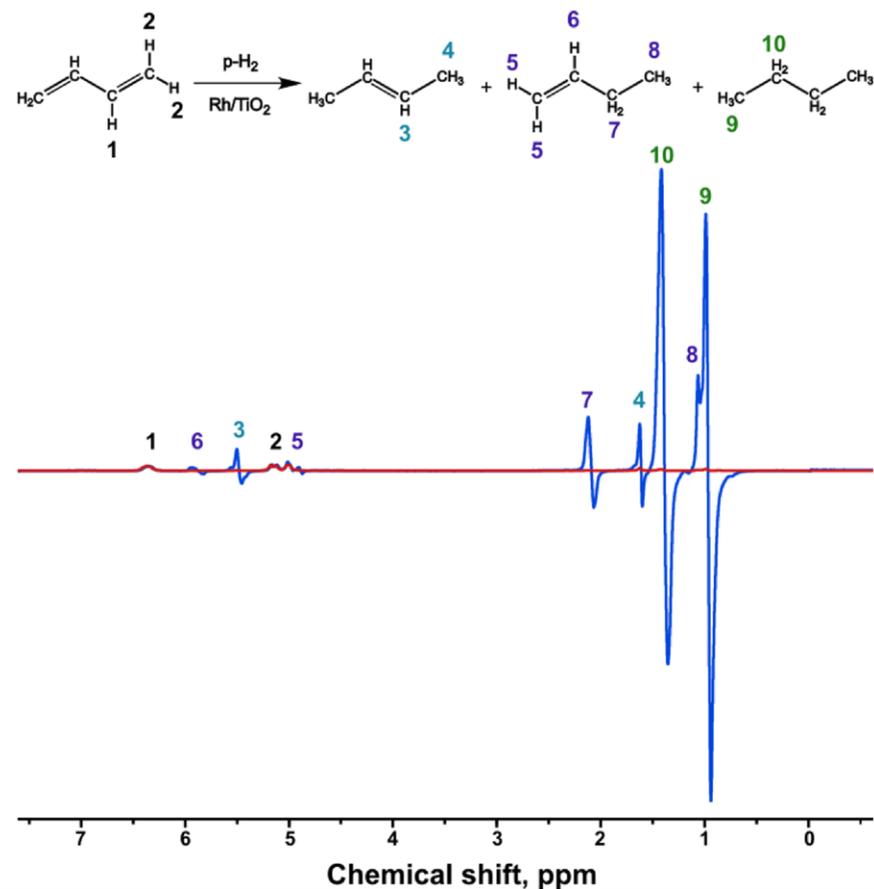


Figure 2. Reaction scheme of 1,3-butadiene hydrogenation and ^1H NMR spectra acquired in hydrogenation of 1,3-butadiene with parahydrogen (blue line) and normal hydrogen (red line) over Rh/TiO_2

Acknowledgements

This work is supported by Russian Foundation for Basic Research (grant No. 16-03-00407 A and No. 17-54-33037 OHKO_a).

References

[1] K. V. Kovtunov et al. – *Top. Curr. Chem.*, 338, 123-180 (2013).

Collective dynamics in various antiferroelectric liquid crystal mesophases probed by NMR relaxometry

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Institute of Molecular Physics Polish Academy of Sciences, M. Smoluchowskiego 17, 60-179 Poznan, Poland

After the discovery of polymer-stabilized liquid crystals, followed by a spectacular number of their applications, scientists from all over the world have started experiments with polymer stabilization of various liquid crystal phases. A continuation of this interesting trend has led to widening of the temperature range of the SmC*-alpha phase. This liquid crystal phase is characterised by very fast response time (in the order of microseconds), therefore in our opinion the polymer stabilization of this phase can soon become of great scientists' interest.

In our work we have concentrated on the effect of a polymer network on the physical properties of the SmC*-alpha phase. Especially, the molecular dynamics of liquid crystal molecules was the aim of our study. The proposed research fits squarely into the current trend of searching for new composite materials for modern technology.

The first effort was focused on the characterization of the base liquid crystal materials. The molecular dynamics of different liquid crystal phases detected in the neat liquid crystal we would like to describe on the basis of the fast-field cycling ¹H NMR relaxometry experiments. The example of the data obtained from this method, the so-called relaxation profiles, are presented in figure 1.

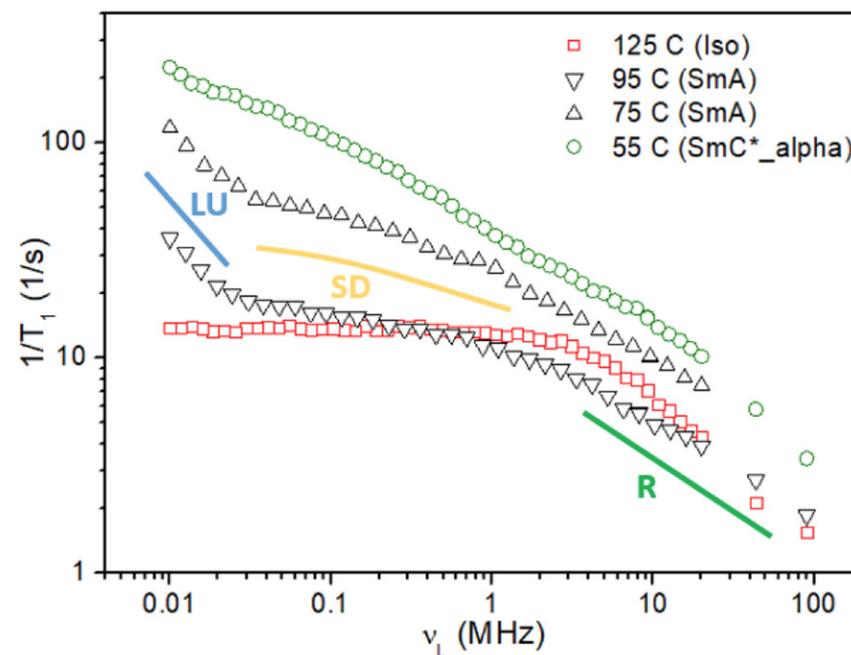


Figure 1. Proton spin-lattice relaxation times in D16 liquid crystal measured as a function of magnetic field strength (expressed in frequency units) at selected temperatures: overall molecular reorientational motion (R), self-diffusion (SD), layer undulations (LU)

The analysis of the experimental data will allow for calculation of physical quantities as structural factors, correlation times, diffusion coefficients, and cut-off frequencies. Thanks to the knowledge on these quantities the character and the time scale of dynamical processes occurring in the given mesophases will be gained.

Acknowledgments

The authors acknowledge support from ITC Conference Grant in the frames of COST ACTION CA15209 – European Network on NMR Relaxometry.

Minutes of the meeting of the Ampere Bureau in Zurich, on March 22nd, 2018

Members Present:

B. Blümich, B. H. Meier, G. Jeschke, S. Jurga, M. Ernst, G. Bodenhausen,
A. Böckmann, J. Dolinsek, W. Kozminski, M. Britton, J.-N. Dumez,
D. Michel (guest)
video conferencing: T. Prisner, J. van Duynhoven, C. Redfield

Excused:

V. Chizhik, H. W. Spiess, S. Van Doorslaer, Y.-Q. Song, P. Giraudeau,
H. Oschkinat

Agenda

1. Approval of the minutes of the AMPERE Bureau meeting in Warsaw July 4th, 2017
2. EUROMAR Division (T. Prisner)
3. Financial report EUROMAR division (C. Redfield)
4. Report on the state of the AMPERE Society (B. Blümich)
5. Financial Report (G. Jeschke)
6. Report on Andrew and AMPERE Prizes and allocation of funds (B. H. Meier)
7. Final reports past meetings
 - Spinus 2017, St. Petersburg (Russia) (D. Michel)
 - AMPERE NMR School Zakopane (Poland) 2017 (S. Jurga)
 - EUROMAR 2017 Warsaw (Poland) (W. Kozminski)
 - ICMRM 2017, Halifax, Canada (M. M. Britton)
 - Alpine Conference on Solid-State NMR, Chamonix, France (J.-N. Dumez)
 - MRPM 14, Gainesville, USA (Yi-Qiao Song)
8. Future meetings:
 - EUROMAR 2018, Nantes (France), July 1-5 (P. Giraudeau)
 - MR-FOOD 2018, Rennes (France) September 17-21 (J. van Duynhoven)
 - SPINUS 2018, St. Petersburg (Russia), April 1-4 (D. Michel)
 - AMPERE NMR School Zakopane (Poland) June 10-16 (S. Jurga)
 - HYP 18, Southampton (UK) September 2-6 (G. Bodenhausen)
 - AMPERE Biol. Solid-State NMR School, Palma(Spain) Oct. 21-26 (M. Ernst)

- EUROMAR/ISMAR 2019, Berlin (Germany) August 25-30 (T. Prisner)
 - ICMRM 2019, Paris (France) August 18-22 (M.M. Britton)
9. Collaboration with the Alpine Conference (B. Blümich/J.-N. Dumez)
 10. Collaboration with the International EPR/ESR Society (T. Prisner/G. Jeschke)
 11. Better involvement of the AMPERE Committee / Committee Elections 2018
 12. Replacement of G. Jeschke as Secretary General
 13. Varia
 14. Date of the next meeting

At 11:00 hours G. Jeschke opened the meeting.

Ad 1.

The minutes of the AMPERE Bureau meeting in Warsaw, July 4th, 2017, published in the AMPERE Bulletin 268, were approved unanimously.

Ad 2.

T. Prisner reported about the state of the EUROMAR division for the first time after he was elected as chair of EUROMAR in Warsaw last year. The EUROMAR conference is running well with typically 500-600 participants. This is a good size to get an overview over the whole field without too many parallel sessions.

The planning for the next meeting in Nantes, France, organized by P. Giraudeau, is on track. The meeting in 2019 will be held in Berlin, Germany as a joint meeting with ISMAR and the German magnetic-resonance society. It is expected that this will be a much bigger meeting with around 1000 participants. The EUROMAR 2020 will be held in Bilbao, Spain and will be organized jointly by French and Spanish scientists. There has been interest in organizing future meetings from the Netherlands, Denmark, Sweden, and Scotland which shows that it is an attractive meeting. Possible locations will be discussed by the EUROMAR Board in Nantes.

At the same time also some of the board members will rotate off and new members have to be elected. EUROMAR will try to ensure also in the future a good geographic and scientific balance for the board.

There are quite a number of companies that use the name of EUROMAR but none of them is active in the area of scientific meetings. After consultations with law experts, it was decided not to pursue a trademark registration for EUROMAR since this is quite expensive.

EUROMAR generates membership fees for the Groupement AMPERE in the order of 10-12 kEuro while AMPERE supports EUROMAR with 7 kEuro for student travel stipends and a tutorial lecturer. It was noted that AMPERE would like the money to be used in this way but that the EUROMAR organizers are free to use it in other ways if needed. The Bureau would like to emphasize that the support by AMPERE should be made visible at the conference and in the program to enhance the visibility of the Groupement AMPERE at EUROMAR. In the discussion it was also noted that in many countries late August is not a good time for the conference and that early July should be the normal time. The shift to August for the EUROMAR 2019 in Berlin is due to the semester schedule in Germany and will be an exception.

Ad 3.

C. Redfield presented the financial report for the EUROMAR subdivision. The finances are stable at a high level. Support for student travel grants will be continued at the same level as during the past few years. C. Redfield reminded the Bureau that she will rotate off the EUROMAR board this summer and a new treasurer needs to be elected in Nantes.

Ad 4.

Blümich delivered a short report on the state of the Groupement AMPERE. During the last year, two prominent scientists from the field of magnetic resonance (Nicolaas Bloembergen 11.3.1920-5.9.2017 and Charles Slichter 21.1.1924-19.2.2018) passed away. We will always remember these two great scientists and their contributions to the field.

The AMPERE Bulletin has been improved and made more interesting (portraits of important scientists, subdivision reports, prize lecture reports) due to the efforts of Gunnar Jeschke and his team. Also the webpage has been updated and now many abstracts from past conferences are available.

There are many events organized by the subdivisions of AMPERE and the educational aspect (schools) is quite prominent. This year saw the introduction of competitive funding for AMPERE events. However, this is not yet so well known and we should advertise this possibility in the Bulletin AMPERE this fall for events in 2019.

B. Blümich mentioned that he was asked about reduced conference fees for retired scientists that have no institutional funds available anymore. This should be discussed in the Bureau. He was approached by Springer (Advanced Magnetic Resonance) about sponsoring conferences. This could be an opportunity for smaller meetings since EUROMAR is already in direct contact with most of the major publishers. He also mentioned that we

need to look for suitable candidates for the AMPERE Committee elections in Nantes this summer. Another topic to be discussed in the future is the possibility of financial support through EU funding for AMPERE.

During the discussion, a lower rate for retired scientists was generally viewed as desirable. It was also mentioned that it should be higher than the student fees since they are usually low and do not cover the effective costs. Therefore, it would be good to adjust the fees for retired scientists at an intermediate level that covers the costs but does not reduce available subsidies to students. Concerning the support by publishers it was mentioned that EUROMAR already has agreements with many publishers for student support and that it is important to coordinate the efforts of AMPERE with the various conferences.

Ad 5.

G. Jeschke explained the current status of the finances of AMPERE. The finances are stable and the major expenses are the competitive funding for the subdivision meetings and the EUROMAR support. The main source of income are membership fees (about 7'000 Euro directly and 10'000 Euro through conferences). Currently, the Groupement AMPERE has a fortune of about Euro 50'000.- plus the endowment for the Andrew prize. The financial report is attached as an Appendix to the minutes (page 26-27)

Ad 6.

B. Meier reported about the state of the AMPERE and Andrew prize selection for 2018. The AMPERE prize has evolved into a prize for young independent investigators. This year, there were four external proposals and a number of internal suggestions. The prize winner has been selected but not yet notified. The name will be published soon on the webpage of EUROMAR 2018. For the Andrew prize, 21 proposals have been considered and it will take a few more weeks to select the prize winner.

The competitive funding of subdivision events has been established. There are four events this year that have been awarded funds: AMPERE NMR school, Hyp 18, MR Food, and the Biological solid-state NMR school. We need to decide at the next Bureau meeting about the funds for 2019 so that the competitive funding can be advertised in the Bulletin.

Ad 7.

The reports for the past meetings were accepted. The AMPERE Bureau thanks all the scientific and local organizers for their time and effort.

Spinus 2017 St. Petersburg (V. Chizhik): D. Michel delivers the report for Vladimir Chizhik who apologizes that he could not come to the

Bureau meeting this year. The Spinus conferences in Repino near St. Petersburg, Russia, have been organized since 2004 and since 2016 under the AMPERE brand. It is a very lively conference with lots of discussions. The conference was organized as a youth school with about 95 participants from 10 countries. There were 17 invited lectures, 36 oral presentations and 35 posters. There will be a special issue of Applied Magnetic Resonance where some of the topics will be published.

AMPERE NMR School Zakopane 2017 (S. Jurga): The meeting was again very successful with 15 teachers and 85 students from 23 countries. The program was very diverse with lectures, oral presentations by young researchers, poster sessions, and practical lab-training courses. There were also cultural events (organ recital by D. Michel) and excursions (river rafting). The topics covered are very broad and the support by AMPERE for student grants is acknowledged.

EUROMAR 2017 Warsaw (W. Kozminski): The EUROMAR in Warsaw was a very successful conference with 560 participants (141 students, 85 exhibitors), 121 talks and 300 posters. The technical organization was done by a congress company. There were two prize sessions, plenary talks, tutorials, and three parallel sessions throughout the conference. There were also social events organized by the sponsors (Bruker, JEOL) and the conference closed with a small positive balance (7000 Euro) half of which will go to the EUROMAR division. The president of AMPERE thanked W. Kozminski for the very nice conference and the good organization. In the discussion, it was mentioned that it would be good to monitor the conference fees charged for EUROMAR over the years. The Bureau decided that this is more a task for the EUROMAR Board of Trustees and asks them to look into this.

ICMRM 2017, Halifax (M. M. Britton): The ICMRM conference last year in Halifax was very successful with about 180 participants, two plenary lectures, 20 invited talks, 47 contributed talks, educational lectures and 75 posters. The conference organizers made sure that a very good balance of gender and nationalities was observed. The subdivision decided for the future to aim for 35% of the oral presentations given by women. There were also prizes awarded and due to an unexpected tax refund a high surplus was generated by the conference.

Alpine Conference on Solid-State NMR, Chamonix (J.-N. Dumez): The 10th edition of the Alpine Conference was very successfully held at the same location as the previous ones. It was fully subscribed with 210

participants from 20 countries (mostly Europe and North America). There were four morning sessions with talks (8 invited, 16 promoted) and in the afternoon round table discussions that replaced the poster sessions. These round table discussions worked out very well and were rated very highly in the conference evaluation.

MRPM 14, Gainesville (Yi-Qiao Song): Unfortunately, Y.Q. Song could not participate in the meeting. The conference was very well received and there is a written report in this Bulletin (p. 5).

Ad 8.

Future meetings for 2018-2019

EUROMAR 2018, Nantes (P. Giraudeau): Unfortunately, P. Giraudeau could not participate in the meeting. He sent a video presentation which explained the state of the preparations. Everything is proceeding well. The program committee has fixed all the plenary and invited speakers and is working on evaluating the abstracts and expects that the program can be finalized at the end of May. Sponsoring contributions have been very high and it is expected that there will be a positive balance at the end. JEOL has decided to reduce sponsorship for large conferences, so there will be no social event organized by JEOL. There will be many student travel grants available from various sources and the program committee will decide on the distribution of the money after the selection of the promoted talks.

MR-FOOD 2018, Rennes (J. van Duynhoven): The meeting is expected to attract about 130 participants. the subdivision has decided to integrate a talk by a speaker from a different subdivision into the program (sponsored by AMPERE). This time it will be P. Galvosas speaking about flow imaging which could spark some cross division interaction. The proceedings of the conference will be published in Magnetic Resonance in Chemistry.

SPINUS 2018, St. Petersburg (V. Chizhik): The report was given by D. Michel for Vladimir Chizhik who could not come to Zürich. The conference will be held in Repino in two weeks in the same location as last year. There will be about 200 participants who are mostly young students. The language of the conference is exclusively English to make it attractive also for foreign participants. There will be a broad range of topics covered with an emphasis on low-field NMR and archaeological investigations due to the close proximity to a research institute in this field. The conference fee is 150 Euro (70 Euro for students). For future editions of the conference,

support by AMPERE would be appreciated since there are some problems with continued funding (report and awards from page 8).

AMPERE NMR School Zakopane (S. Jurga): the organization of this years AMPERE NMR school is well underway. The speakers have been selected and the format will be very similar to last years school. The continued funding of student travel grants by AMPERE is acknowledged.

HYP 18, Southampton (G. Bodenhausen): The preparations by P. Pileio and M. Levitt are on track. The organizers decided to make the meeting one day shorter. There are not yet many registrations but this is typical for many conferences and registrations tend to spike up towards the end. There will be additional advertisement for the conference. One reason for slow registration could also be the name change from the DNP meeting to the more general Hyperpolarization name.

AMPERE Biol. Solid-State NMR School, Palma (M. Ernst): The school will be organized for the 7th time and for the second time in Mallorca. All speakers have agreed to come and about 30 students are expected to participate. The topics are very broad from fundamental aspects of NMR to applied topics. There will be outside speakers from the field of cryo-electron microscopy and from the free electron laser field. Support by AMPERE and EBSA for student travel grants is acknowledged.

EUROMAR/ISMAR 2019, Berlin (T. Prisner): The EUROMAR 2019 will be a joint conference with ISMAR and the German magnetic resonance society. It is organized by Hartmut Oschkinat at the Freie Universität in Berlin. In the tradition of ISMAR, the chair of the program committee (Jeff Reimer) is not the conference organizer and he is already collecting proposals for plenary speakers. The scientific committee is composed of people proposed by EUROMAR and people proposed by ISMAR and the head of the German Fachgruppe Magnetische Resonanz. The plan is to finalize the speakers at the EUROMAR in Nantes. Since the meeting is expected to attract more people (about 1000 participants) than a normal EUROMAR, there will be most likely more parallel sessions to accommodate a larger number of speakers. It has not yet been decided how many parallel sessions there will be. In the discussion it was noted that it is not desirable to have too many parallel sessions since it makes selecting a session very difficult and there is the danger of lowering the standards for presentations.

ICMRM 2019, Paris (M.M. Britton): The meeting in Paris has been planned for the week before EUROMAR 2019 in the hope that people from overseas will attend both meetings. The website is running and the Erwin Hahn lecturer has already been selected. The topics and lecturers for the educational talks have already been selected. Registration will start in February 2019.

Ap 9.

At the last AMPERE Bureau meeting, the relationship between AMPERE and the Alpine Conference was discussed. Currently, the Alpine Conference is under the auspices of AMPERE and the president of AMPERE was asked to talk to the organizers about possible closer ties. The founding organizing committee (L. Emsley, S. Caldarelli, A. Lesage, M. Bardet, S. Hediger, N. Giraud) decided to step down last year and has asked new people (J. Lewandowski, C. Martineau, P. Schanda, J.N. Dumez, M. Leskes) to continue organizing the conference. For the next few conferences, the location and format will be the same but the scope of the conference will be broadened which will also be reflected in a new title: Magnetic Resonance in Solids. The scientific committee for the next conference (15.9.-19.9.2019) has been selected (L. Frydman, T. Polenova, A. Kentgens). The new organizing committee would like to strengthen the ties to AMPERE and try to comply better with the rules set by AMPERE. However, the new organizing committee would also like to get more experience with running the conference before implementing any substantial changes and new rules. There are good reasons to become a subdivision but the implications have to be well reflected before implementing them. This will be discussed in more detail in the future.

Ap 10.

The International EPR Society was founded in the 1980s mostly driven by US EPR scientists. It has no conference associated with it and consists of about 220 members. Due to an overlap of executive board members with AMPERE (G. Jeschke and T. Prisner) the topic of collaboration with AMPERE came up. At the moment we would like to establish a loose collaboration and coordination of events like it is done with ISMAR. A closer collaboration or even forming a subdivision is feasible (some of the other subdivisions are also operating outside Europe) but needs to be discussed further.

Ap 11.

There were concerns voiced by members of the AMPERE Committee that the role of the Committee is not really clear and that a better involvement of the AMPERE Committee would be desirable. In principle, the Bureau prepares decisions that are then made by the Committee. It is important for the Bureau to communicate this better to the members of the Committee. In order to achieve this, there will be an email from the president to all Committee members with the minutes of the AMPERE Bureau. He will also ask them about suggestions for new Committee and Bureau members that need to be elected at the General Assembly in Nantes. The Bureau will also make sure that the topics discussed at the Committee meeting in Nantes will be distributed early enough.

Ap 12.

G. Jeschke announced that he would like to step down as Secretary General of AMPERE because he takes on the duty of Department Chair at ETH Zurich in August 2018. In addition, he has served as Secretary General for 12 years and thinks that a change might be good and give new input. The president thanked G. Jeschke for all the work that he has put into the Bureau and all the changes and new initiatives that he has started and implemented. G. Jeschke proposes as his successor M. Ernst so that the back office infrastructure in Zürich could remain unchanged. This will require an election by the AMPERE Committee in Nantes. The AMPERE Bureau supports this proposition unanimously and proposes this change to the AMPERE Committee. This would also require the election of a new Executive Secretary as a successor for M. Ernst. The Bureau discussed possible candidates and will ask the Committee for additional nominations. The Bureau will discuss the nominations after the Easter holidays by email.

Ap 13.

Varia: G. Bodenhausen raises the question whether two Bureau meetings per year are really required and whether one could not handle all the business at a single meeting during EUROMAR. There was a discussion about this proposal. Several members raised the question that there are already too many long meetings at the EUROMAR especially for people who are also members of the EUROMAR Board of Trustees or the scientific committee. Also the issue of preparing the Committee meeting and the General Assembly was raised which would have to be done a year in advance or by email. There was no clear conclusion but the topic will be discussed further at the Bureau meeting at the EUROMAR in Nantes.

Ad 14.

The next annual meeting of the AMPERE Bureau is planned for March 21, 2019 in Zürich. The Bureau meeting during the EUROMAR in Nantes will be most likely during lunch time on Tuesday July 3, 2018, the Committee meeting will be in the evening on Tuesday July 3, 2018.

At 14:10 hours G. Jeschke closed the meeting and thanked all the present members for their time and effort.

Zürich, 22.3.2018

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.

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Vice Presidents	Janez Dolinšek Anja Böckmann
Secretary General	Gunnar Jeschke
Executive Secretary	Matthias Ernst
EF-EPR Representative	Sabine van Doorslaer
SRMR Representative	Melanie M. Britton
MRPM Representative	Yi-Qiao Song
MR-FOOD Representative	John van Duynhoven
Hyperpolarisation Representative	Geoffrey Bodenhausen
EUROMAR Representative	Thomas Prisner
EUROMAR Treasurer	Christina Redfield
Hyperpolarisation Representative	Geoffrey Bodenhausen
Past President	Beat Meier
Honorary Member	Hans Wolfgang Spiess
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Future conferences

Ampere Events 2018

Euromar 2018	Nantes (France)	July 1-5, 2018
,HYP18` Hyperpolarized Magnetic Resonance 2018	Southampton (UK)	September 2-5 2018
FoodMR 2018	Rennes (France)	September 17-21 2018
Modern Development of Magnetic Resonance 2018 and Zavoisky Award Ceremony	Kazan (Russia)	September 24-28 2018
Ampere Biological Solid-State NMR School	Palma de Mallorca (Spain)	October 21-26 2018

Other Events 2018

SciX2018	Atlanta (USA)	October 21-26 2018
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Ampere Events 2019

16 th International Youth School-Conference „Magnetic resonance and its applications - Spinus 2019“	Saint Petersburg (Russia)	April 1-5 2019
15 th ICMRM	Paris (France)	August 18-22 2019
ISMAR / Euromar 2019	Berlin (Germany)	August 25-30 2019
11 th Alpine Conference on Solid-State NMR	Chamonix	September 15-19 2019