Vol. 66, No. 1 ISSN 0432-7136

BULLETIN DU GROUPEMENT

d'informations mutuelles

AMPERE

SE CONNAÎTRE, S'ENTENDRE, S'ENTRAIDER

January to March 2017

No. 266

Office: ETH Zürich, Laboratory of Physical Chemistry
8093 Zürich, Switzerland, www.ampere-society.org

Contents

If you would like to become a member of the AMPERE Group, you can register online under: **www.ampere-society.org**

Correspendence address:
ETH Zurich, Laboratory of Physical Chemistry, HCI F 227
Vladimir Prelog Weg 2, 8093 Zurich, Switzerland
Mail: contact@ampere-society.org

Publisher: Gunnar Jeschke, ETH Zurich, Switzerland

Editorial

Dear AMPERE colleagues,

You have probably already heard the sad news that Erwin Hahn, discoverer of the electron spin echo and co-discoverer of electron spin echo envelope modulation (ESEEM) and cross-polarization has deceased. Erwin Hahn was a guest member of AMPERE and our President, Bernhard Blümich, has dedicated an Obituary to him in this issue.

You probably also have already heard about the call for nominations for the Raymond Andrew Prize 2017, dedicated to the memory of another pioneer in magnetic resonance and awarded annually at the EUROMAR conference for on outstanding thesis in the field. If not and you still want to nominate a young scientist, it is high time. The nomination deadline is February 15th 2017 (see page 3).

Another event that I wish to highlight is the SPINUS 2017 International Youth School-Conference in St. Petersburg (Russia) 23 – 29 April 2017 (page 18). While visa costs for Russia may appear high, this is offset by very attractive registration fees and accommodation costs and, especially in these times, it may be good to foster links across the new divide that has been opening thanks to our politicians during the past few years.

I hope you will enjoy reading this issue of Bulletin AMPERE.

Gunnar Jeschke
Secretary General of Groupement AMPERE

Erwin Louis Hahn:
9 June 1921 – 20 September 2016

Erwin Hahn, the discoverer of the spectroscopic echo has passed away. Everyone involved in magnetic resonance or nonlinear optical spectroscopy knows about the echo. Even medical doctors with just basic MRI knowledge do. Erwin had the great fortune of discovering the echo. When receiving the Russel Varian Prize 2004 in Lille at the joint meeting of the 17th EENC and the 32nd Congress AMPERE, he reminisced "Certainly if I had not discovered the spin echo displaying the first free induction decay signal after a pulse as well, it would have been discovered by someone else quite soon." Although best known for the echo, Erwin Hahn has contributed several other seminal discoveries to our standard repertoire of day-to-day science in addition to the spin echo (Phys. Rev. 80, 1950, 580), for example, cross-polarization together with Sven Hartmann (Phys. Rev. 128, 1962, 2042) and self-induced transparency with S.L. Mccall (Phys. Rev. 183, 1969, 457; PRL 18, 1967, 908). Moreover, among others he worked on such diverse topics as liquid-state NMR and scalar couplings in micro-tesla magnetic fields, detection of sea-water motion by nuclear precession, electron-spin-envelope modulation, nuclear spin noise, coherent Raman beats, spin-echo serial storage memory, and enhancement of surface NMR by laser-polarized noble gases.
Erwin Hahn was a modest man with a brilliant, sharp mind and a wonderful sense of humor. He was an honorary member of the AMPERE Society who used to regularly attended the Congresses AMPERE and the Gordon Conferences on Magnetic Resonance where one could discuss with him at ease and would always learn from him, be it science or be it being human. Whatever echo remains, it bears his smile.

Bernhard Blümich

Raymond Andrew Prize 2017 - Call for nominations

Dear colleagues,

Call for Nominations for the Raymond Andrew Prize for an outstanding PhD thesis in the field of magnetic resonance

For the Raymond Andrew Prize 2017 the AMPERE Prize Committee is seeking your help in searching for qualified candidates who completed their dissertation during the period of 2015/2016. The prize will be presented during the EUROMAR in Warsaw (Poland) from July 2rd to July 6th 2017.

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

Suggestions must be received by **15th February 2017** 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:
https://www.ampere-society.org/

Portrait: Prof. Hans Wolfgang Spiess

• Why magnetic resonance and why NMR and MRI?
Magnetic resonance is a particularly versatile technique for elucidating structure and dynamics of materials. At the same time it is intellectually challenging, but most of NMR theory can be managed by a simple minded chemist like me.

• What is your favorite frequency?
High enough to generate sufficient spectral resolution, yet affordable in price of the magnet.

• What do you still not understand?
Most of science, but even more how creativity is generated for the different aspects of human life.

• Luckiest experiment you have ever done.
Generating 'spin alignment' by a three-pulse sequence for studying 'ultraslow' motions in bulk.

• What was the worst mistake you have made during your lab time?
Quenching a superconducting magnet and destroying the probe-head, because I wanted to start a new experiment after spending two days and two consecutive nights in the lab on the previous experiment.

• Most memorable conference story?
Watching 'big shots' of magnetic resonance like Anatole Abragam during a lecture with experiments on explosives during the Congress AMPERE in Nottingham 1974. Quote from what the presenter said: 'You might have seen the following experiment before, but not quite on this scale.' At this point the 'big shots' evacuated from the first row of the lecture theater.

• With whom (historical person) would you like to meet?
As a member of the Max Planck Society, Max Planck is an obvious choice.

• When do you get your best ideas?
Having a fresh mind after relaxation, may it be exercise or holidays.

• If you had just one month time for travelling – where would you go to?
To the Russian part of East Prussia, where part of my family came from.

• Your idea of happiness?
Observing how my former students and co-workers get along in different fields.

Positions:	Retired as Director at the Max Planck Institute for Polymer Research in fall 2012
Education:	
1968:	PhD in Physical Chemistry at the University of Frankfurt, Germany.
1968–1978:	Research Associate at Florida State University, the Max Planck Institute for Medical Research, Heidelberg and the University of Mainz.
1978–1984:	Professor at the Universities of Mainz, Münster, and Bayreuth.
1984:	Director at the newly founded Max Planck Institute for Polymer Research, Mainz.
Awards:	1987 Leibniz Prize, 2002 AMPERE Prize, 2010 Zavoisky Prize, 2015 ISMAR Prize.
Interests:	Classic Music
Homepage:	http://www.mpip-mainz.mpg.de/polymer_spectroscopy

Report: Xth EFEPR Conference

September 4th - 8th 2016, Torino, Italy

International Advisory Board
Donatella Carbonera, Georg Gescheidt, Elio Giamello (Conference Chairman), Etienne Goovaerts, Edgar Groenen, Bruno Guigliarelli, Wolfgang Lubitz, Eric McInnes.

Local Organizing Committee
Mario Chiesa, Ivana Fenoglio, Elena Ghibaudi, Chiara Gionco, Enzo Laurenti, Stefano Livraghi, Maria Cristina Paganini

The Xth Conference of the European Federation of EPR groups (EFEPR) took place September 4th-8th in Torino (Italy) with around 170 attendees from 24 different countries including some delegates from North America, South America and Asia. This is the result of the fruitful cooperation with the International EPR society (IES) that is here gratefully acknowledged.

7 plenary lectures, 9 key note lectures and 21 oral contributions were held during the Conference and 116 posters displayed throughout. A wide range of applications, method development and theory were covered, setting the stage for a stimulating interdisciplinary dialogue among physicists, chemists, biochemists and material scientists.

During the Conference the Ulderico Segre prize and the prizes of the IES society were delivered. The Segre prize, sponsored by the Italian EPR Group (GIRSE) for an outstanding doctoral thesis in the field of magnetic resonance was awarded ex aequo to Dr Claudia E. Tait and Dr. George Cutsail.

The conference included the activities of the International EPR (ESR) Society with a specially allocated session. The IES sponsored two student awards for the best posters presented at the Conference, which were awarded to Mykhailo Azarkh (University of Kostanz) and Petr Neugebauer (University of Stuttgart). The IES fellowships for 2015 and 2016 were conferred to Sankaran Subramanian (2015), Edgar Groenen (2015) and Charles Scholes (2016). The IES Young Investigator award was presented to Sergei Veber (Novosibirsk).

The Conference was also the occasion for discussing the future of the EF-EPR Society, during the General Assembly, held on Tuesday 6 September. During the Assembly the structure and future of EF EPR was discussed leading to a new organizational set-up, with a President and two Vice-Presidents all coming from different EU countries. Sabine Van Doorslaer (University of Antwerp, Belgium) was elected as the new President of EF-EPR and Donatella Carbonera (University of Padova, Italy) and Carole Duboc (University of Grenoble, France) are the two Vice-Presidents.

Thanks are due to our sponsors and exhibitors (Bruker, Magnettech, Adani, IREN, L'Oreal, Camera di Commercio di Torino), the University of Torino, the Scientific and Local Organizing Committees.
Thanks are also due to the speakers, the session chairmen, the poster presenters and to the team of blue-shirt conference helpers (PhD and Master students at the University of Torino).
The active contribution of Tiziana Cannizzo and Frine Scaglione (SAFOOD) to organizing this conference is also gratefully acknowledged.

On the following pages please find the abstracts of the
posterprize winners of the Xth EFEPR Conference

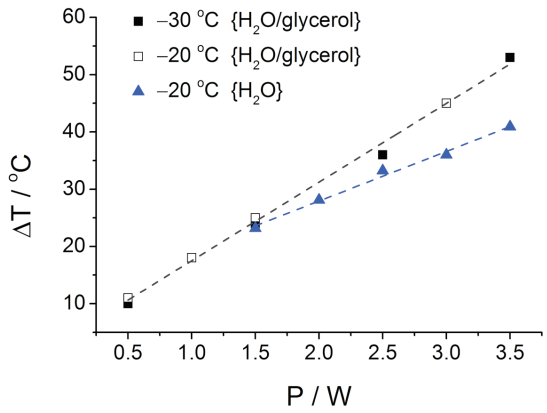
Mykhailo Azarkh
Petr Neugebauer

Towards Temperature-Cycle EPR: Calibration of the temperature jump

Mykhailo Azarkh[1,2], Peter Gast[1], Edgar J.J. Groenen[1]

1) Huygens-Kamerlingh Onnes Laboratory, Department of Physics, Leiden University, P.O. Box 9504, 2300 RA Leiden, The Netherlands
2) Present address: Department of Chemistry, University of Konstanz, 78457, Konstanz, Germany

We report on the development of Temperature-Cycle EPR, a novel technique to study kinetics of (bio)chemical reactions involving paramagnetic species. This technique is based on cycling the system between a state in which the reaction does not take place and a state in which the reaction does take place. In aqueous samples, the temperature jumps are induced by an infrared laser and bring the sys-tem from the frozen to the liquid state. The performance of Temperature-Cycle EPR depends on the precise characterization of the temperature jumps.
We utilize EPR-based temperature measurements for calibration of the laser-induced temperature jumps. Second-moment analysis along two dimensions of continuous-wave EPR spectra of nitroxides enables EPR thermometry in a broad temperature range. Simulations show that the temperature can be derived in both the slow-motion and the fast-motion regime, which is experimentally verified at 275 GHz for H_2O/glycerol (50/50% by volume) and pure water. We demonstrate that this tool allows the calibration of temperature jumps induced by infrared laser irradiation of a submicroliter sample in the single-mode cavity of a 275 GHz spectrometer. Temperature jumps up to 50^{0}C have been realized (Figure), which allows for great flexibility in heating a sample for kinetic studies by Temperature-Cycle EPR.

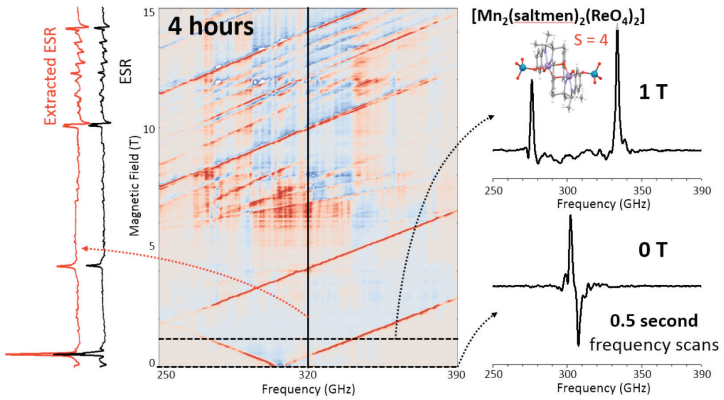


High Frequency EPR Spectroscopy in Field and Frequency Domains

Petr Neugebauer[1], Dominik Bloos[1], Raphael Marx[1], Philipp Lutz[1], David Aguilà[2], Michal Kern[1], Rodolphe Clérac[2] and Joris van Slageren[1]

1) Institute for Physical Chemistry, University Stuttgart, Pfaffenwaldring 55, D-70569 Stuttgart, Germany; petr.neugebauer@ipc.uni-stuttgart.de
2) CNRS, CRPP, UPR 8641, F-33600 Pessac, France.

Electron Spin Resonance (ESR) is a powerful technique to investigate electronic and magnetic properties of various materials. ESR at THz frequencies is of great interest in view of the large inherent spectral resolution and the possibility to inves-tigate molecular systems with large magnetic anisotropies. We will present the recently developed combined High Frequency Field and Frequency Domain THz Electron Spin Resonance (HFESR/FDMR) spectrometer capable to investigate for the first time the electronic and magnetic properties of molecular systems, thin films and bulk materials in the very broad frequency range of 85-1100 GHz. The HFEPR/FDMR spectrometer operates at high magnetic fields up to 17 T and temperatures from 300 K down to 1.8 K. For the microwave radiation an amplifier multiplier chain is used which gaplessly covers the entire frequency range. A quasi-optical bridge in combination with corrugated waveguides guarantees the propagation of the microwave with only minimal losses, where special care was given to eliminate any standing waves in the system. For very sensitive measurements we developed a tunable Fabry-Pérot resonator, which allows a sensitivity of only 10^7 spins/Gauss. Furthermore, samples can be oriented with respect to the applied magnetic field by using single crystal rotator. The performance of the spectrometer will be demonstrated on molecular systems, thin films and bulk materials.



Report: Ampere Biological Solid-State NMR School

Universitat de les Illes Balears, Palma de Mallorca, Spain.
October 9-14 2016

Scientific committee:
Anja Böckmann, Beat Meier, Matthias Ernst, Hartmut Oschkinat
Local committee:
Gabriel Martorell, Rosa Gomila Ribas, Sebastian Albertí

Following the successful tradition of earlier meetings in Germany (2006, 2014), Denmark (2008), the Netherlands (2010) and Czech Republic (2012), the 6th international training school on biological solid-state NMR took place this year at the Universitat de les Illes Balears (UIB) in Palma de Mallorca, Spain.

The biological solid-state NMR school aims at providing an advanced course in biological solid-state NMR, from spin dynamics to biological applications. The school has been initiated 2006 by Hartmut Oschkinat and Beat Meier joined by local organizers. In 2015 the biological solid-state NMR school has become a subdivision of AMPERE, in order to create a solid basis for the future organization of the school and to ensure optimal handling of resources. The subdivision "Biological solid-state NMR" is run by a collegial board presently constituted by Hartmut Oschkinat, Beat Meier, Matthias Ernst and Anja Böckmann, who has been in charge of the organization of the school 2016.

Coffee break and discussions
(Photo: Matthias Ernst)

Students at practicals
(Photo: Matthias Ernst).

The Ampere biological solid-state NMR school 2016 has attracted 26 students from 9 European countries and USA.
Lectures were held by scientists from universities in Germany, Switzerland, France, the Netherlands, Denmark and USA on both theory and applications of NMR and also of EPR and DNP. In addition, Frank Engelke from Bruker reported on critical aspects on MAS probe design.
The special guests of the school 2016 Andrea Dessen from IBS Grenoble and Stefan Raunser from MPI Dortmund, presented an introduction to X-ray crystallography of biological systems and the newest developments of Cryo-electron microscopy, respectively.

Students and the organizing committee: Gabriel Martorell, Beat Meier, Anja Böckmann, and in the back Hartmut Oschkinat. Matthias Ernst is taking the picture.

In the spirit of the biological solid-state NMR school ample time was reserved for social gathering and scientific interactions, in order to allow for close contacts between the school attendees and the speakers. In particular we had 10 practicals with exercises, 4 question hours and two poster sessions. Posters were discussed accompanied by tasting a selection of wines from the Binissalem denomination of origin and beers from Soller. The school started on Sunday evening with a social gathering and dinner at a typical tapas restaurant in Palma. On Wednesday afternoon teachers and students had the opportunity to explore the island, and the boldest ones … to go for a refreshing swim!

The school was sponsored by Bruker, Universitat de les Illes Balears (UIB), EBSA and iNEXT. Thanks to our generous sponsors and to the fantastic local committee!

The Ampere biological solid-state NMR school 2018 will be held again in Palma de Mallorca and will be organized by Matthias Ernst.

Report: Annual International Conference "Modern Development of Magnetic Resonance-2016" (MDMR2016)

October 31- November 4, 2016
Kazan, Russia

In November 2016, Kazan welcomed participants from the Russian Federation (Moscow, Novosibirsk, Kaliningrad, Krasnoyarsk, Nizhny Novgorod, Chernogolovka), Germany, Israel, Italy, and the United States in order to discuss achievements and new tendencies in applications of magnetic resonance within the Annual International Conference "Modern Development of Magnetic Resonance" dated to the Zavoisky Award 2016 ceremony. Professor Michael Bowman (University of Alabama, Tuscaloosa, USA) and Professor Arnold Raitsimring (University of Arizona, Tucson, USA) shared the Zavoisky Award 2016.

The conference was organized by the Zavoisky Physical-Technical Institute of the Russian Academy of Sciences, the Academy of Sciences of the Republic of Tatarstan, and the Kazan Federal University under the auspices of the Groupement AMPERE. The conference demonstrated the increasing interest in magnetic resonance studies in diverse fields of science. It included six plenary lectures, nearly thirty invited talks and nearly the same number of oral talks within the following sections: Chemical and biological systems; Strongly correlated electron systems; Low-dimensional systems and nano-systems; Theory of magnetic resonance; Modern methods of magnetic resonance; Other applications of magnetic resonance; Perspective of Magnetic Resonance in Science and Spin-Technology, and within the workshop "Spin-Based Information Processing".

The conference was opened with plenary lectures. The lecture "Electron spin resonance on the border between para- and ferromagnetism: quantum versus classical" was given by V.A. Atsarkin, and T. Takui presented the lecture "Molecular spin technology for quantum computers and quantum information processing". The plenary lecture of J.H. Freed was devoted to overcoming insufficient signal strength in ESR using new wavelet denoising methods, while H. Ohta in his lecture discussed recent developments and future perspectives of multi-extreme THz ESR. On November 2nd, there were two other plenary lectures: "New Porphyrin Molecules with Möbius-Strip Topology as Studied by Modern Magnetic Resonance Methods" by K. Möbius and "Why EPR Will Save the World?" by K. Salikhov.

This year much attention was attracted by reports devoted to the spin-based information processing, which were given in the framework of the special workshop and were basically related to quantum information science. Leading experts in the field, P. Bertet, J. Morton, J. Majer, M. Tobar, D. Suter, A. Tyryshkin, to name a few, reported on different aspects of EPR research of quantum information systems, e.g., spin qubits based on donors in silicon, hybrid quantum systems – coupling color centers to superconducting cavities, high-Q and novel cavity structures for photon-spin strong coupling, magnetic resonance at the quantum limit and beyond, etc. Without doubt, this conference was marked by a significant event, namely, the celebration of the 80th birthday of Prof. Kev M. Salikhov.

The financial support of the Government of the Republic of Tatarstan, Russian Academy of Sciences, Russian Foundation for Basic Research, and BrukerBioSpin is gratefully appreciated.

A.A. Kalachev
Chairman of the MDMR 2016 conference

From left to right: Vasil' Shaikhraziev, Deputy Prime-Minister of the Republic of Tatarstan, Arnold Raitsimring, Michael Bowman, and Kev Salikhov, Chairman of the Zavoisky Award Selection Committee. Foto taken by S. Kamaletdinov.

Report on the 13th International Youth School-Conference

«Magnetic Resonance and its Applications. Spinus-2016»

Since 2004 the Saint-Petersburg University holds a series of the annual International Youth School-Conference «Magnetic Resonance and its Applications. Spinus» (an AMPERE event since 2016). The 13th Meeting "Spinus-2016" was opened on Monday, November 20, and was closed on Friday, November 26, 2016.
Venue: the hotel „Baltiets" in Repino on the beach of the Gulf of Finland, 30 km north-west from the center of St. Petersburg (http://baltiets.ru/). The cost of a one-day stay in the hotel (full board) for one person in a double room was 2400 rub (~ 35 €). Single rooms were also available.
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 97 participants from 8 countries (Cuba, Finland, France, Germany, Ireland, Lithuania, Russia, USA).
The Meeting was opened by the talk of V. I. Chizhik (Saint Petersburg, Russia) – [NMR] echoes of sad news… (in memory of Erwin Hahn)

Dr. Bing Wu (National Institute for Cellular Biotechnology, Dublin City University, Glasnevin, Ireland) and Prof. Vladimir Chizhik (Saint-Petersburg State University, Russia)

There were 17 lectures, presented by following speakers:

- E.B. Aleksandrov (Saint Petersburg, Russia) - Natural Science and the Spirit World
- Yu. Bunkov (Grenoble, France) – Supermagnonics
- E.V. Charnaya (Saint Petersburg, Russia) – NMR studies of nanocomposites with metal and alloy particles
- M.E. Elyashberg (Moscow, Russia) – Computer methods for structure elucidation of new organic compounds from NMR spectra
- V. Frolov(Saint Petersburg, Russia) – Visualization by NMR. Physical principles
- L.Yu. Grunin (Nabern, Germany) – Time-Domain NMR Characterization of Solids Structure
- K. Kämpf (Darmstadt, Germany) – Local and global dynamics of intrinsically disordered proteins: a case study of H4 histone tail
- K. Kavokin (Saint Petersburg, Russia) – Deep cooling of the nuclear spin system in semiconductor structures
- M. S. Kuznetsova (St. Petersburg, RF) – Electron-nuclear spin dynamics in semiconductor QDs
- E. Lähderanta (Lappeenranta, Finland) – Double Master Program of St. Petersburg State University and the Lappeenranta University of Technology
- D. Michel (Leipzig, Germany) – MAS NMR studies in combination with pulsed field gradient techniques
- Y.I. Neronov (Saint Petersburg, Russia) – Determination of the spin-spin coupling in the molecule HD and possible manifestations of axion-like particles
- N. M. Sergeyev (Moscow, Russia) – The NMR time scales
- N.R. Skrynnikov (West Lafayette, USA) – Dynamics in protein crystal: insights from MD simulations
- P.M. Tolstoy (Saint Petersburg, Russia) – Cooperativity of Strong Hydrogen Bonds Studied by Liquid State NMR Spectroscopy
- S. Vasiliev (Turku, Finland) – Spin Exchange and Magnons in Cold Atomic Hydrogen Gas
- V.S. Zapasskii (Saint Petersburg, Russia) – Optical Detection of Magnetization

Moreover, there were 34 contributed talks (20-30') and 36 poster presentations. 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 a prize (300+200 Euro) for the best oral and poster reports of students and postgraduate students. Nominees were selected by an international commission. The Organizing Committee awarded:
(oral) Sevastyan O. Rabdano (Saint Petersburg University) – „Second RNA-recognition motif RRM2 of TDP-43 protein: oxidative stress leads to structure destabilization, aggregation and increased susceptibility to proteolytic degradation"
(poster) Olga A. Kolosova (Kazan Federal University) – „Structural studies of the antimicrobial peptide protegrin-5 in membrane mimicking environment by high-resolution NMR spectroscopy"
(editor's note: the abstracts of the oral and poster winners will be published in the upcoming Ampere Bulletin, Summer 2017)
The social program of the Spinus-2016 consisted of a welcome-party, conference dinner and excursions to Kronstadt and Resource Center of SPbSU (Magnetic Resonance).
Information (book of abstracts, photos) on "Spinus-2016" is available at http://nmr.phys.spbu.ru/wsnmr.

The NMRCM 2014 was supported by
- Saint-Petersburg University
- Bruker
- Resonance Systems Ltd. nmr-design.com
- Magicplot Systems, LLC, magicplot.com
- APG Eastern Europe, preforma.ru

Spinus-2017

Saint Petersburg State University
14th International Youth School-Conference
Spinus 2017
«Magnetic resonance and its applications»

Saint Petersburg, 23 – 29 April 2017
http://nmr.phys.spbu.ru/wsnmr
spinus@nmr.phys.spbu.ru

First announcement

Invitation
Welcome to the 14th International Youth School-Conference „Magnetic resonance and its applications" (Spinus 2017) organized by Saint Petersburg State University in April, 23–29, 2017.The goal of "Spinus" is to provide a platform to young scientists 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 number of participants is limited to 200 persons.

Scope
The scope of the Conference includes the following topics:
- Modern trends in NMR, ESR and NQR
- Magnetic resonance for fundamental science
- Computer Modeling
- Earth's field NMR
- Magnetic resonance imaging
- Magnetic resonance in industry
- Related areas

In 2017, "Spinus" schedules a special section „Application of Magnetic Resonance in Medicine and Biology", which will reflect the activities of the Biomolecular NMR Laboratory. The official language of the "Spinus-2017" is English. Extended abstracts will be published in the Book of Abstract.

Registration Fee
The registration fee is 6500 rub. (≈100 €) for active participants and 3250 rub. (≈50 €) for young scientists (students and Ph. D. students) and accompanying persons. For Russian citizens the fee is 2000 rub and 1000 rub, respectively. Registration fees include organization costs, "Spinus 2017" materials, welcome-party, coffee breaks, transportation in the days of arrival and departure. On-line registration is available on the conference site:
http://nmr.phys.spbu.ru/spinus

Location
"Spinus-2017" will take place at the hotel „Baltiets" in Repino on the beach of the Gulf of Finland, 30 km north-west from the center of St. Petersburg (http://baltiets.ru/). Minimal estimated cost for a one-day stay in the hotel (full board including also swimming pool and sauna) is 3400 rub (≈ 52 €) for two persons in a double room, i.e. 1700 rub per person. The exact price will be known later (February 2017).

Abstract and paper submission
Abstracts up to 3 pages (including tables and figures) in the MS Word format, according to the conference template, should be sent to the e-mail address spinus@nmr.phys.spbu.ru as attachment (please, put the subject „Spinus-2017 abstract") until the 23th of March, 2017. The abstract template is available on the website. All accepted abstracts will be placed in Russian Science Citation Index and will be available on www.elibrary.ru

In 2017 selected papers will be published in a special issue of "Applied Magnetic Resonance" with the standard reviewing process (the journal is indexed by Web of Science and Scopus). The journal site: http://www.springer.com/materials/journal/723. Articles prepared in accordance with the requirements of the journal should be sent to the e-mail address: spinus@nmr.phys.spbu .ru (please put the subject "Spinus-2017 AMR-paper"). Deadline for the manuscript submission: April, 30, 2017.

Organizing Committee

Chairman	Dr. Sci. Denis Markelov
Vice-chairman	Alexander Ievlev
Committee members	Dr. Andrey Egorov
	Dr. Andrey Komolkin
	Pavel Kupriyanov
	Sevastyan Rabdano
	Dr. KonstantinTutukin
	Timofey Popov

Scientific adviser of the School-Conference "Spinus"
Professor Vladimir Chizhik

Advisory Board

E.B. Aleksandrov	Acad., Prof., St. Petersburg, Russia
V. Balevicius	Prof., Vilnius, Lithuania
Yu. Bunkov	Prof., Grenoble, France
V.I. Chizhik	Prof., St. Petersburg, Russia
D. Fruchart	Prof., Grenoble, France
D. Michel	Prof., Leipzig, Germany
E. Lahderanta	Prof., Lappeentanta, Finland
V.I. Minkin	Acad., Prof., Rostov-on-Don, Russia
N.R. Skrynnikov	Prof., St. Petersburg, Russia, USA
M.S. Tagirov	Prof., Kazan, Russia
S. Vasiliev	Prof., Turku, Finland

Contacts

Dr. Denis Markelov, Alexander Ievlev
1, Ulyanovskaya st., Peterhof, 198504, Saint Petersburg, Russia
Dept. Nuclear-Physics Research Methods
St. Petersburg State University

Tel.: 89811226846,
Fax: (812) 428-72-40
e-mail :spinus@nmr.phys.spbu.ru
URL: http://nmr.phys.spbu.ru/spinus
Facebook: https://www.facebook.com/groups/SPINUS/
Vkontakte: https://vk.com/spinus_iys

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.

Executive Officers 2016 - 2019

President	Bernhard Blümich
Vice Presidents	Janez Dolinšek Anja Böckmann
Secretary General	Gunnar Jeschke
Executive Secretary	Matthias Ernst
EF-EPR Representative	Sabine van Doorslaer
SRMR Representative	Michael Johns
MRPM Representative	Yi-Qiao Song
MR-FOOD Representative:	John van Duynhoven
Hyperpolarisation Representative:	Geoffrey Bodenhausen
EUROMAR Representative	Lucio Frydman
EUROMAR Treasurer	Christine Redfield
Past President	Beat Meier
Honorary Member	Hans Wolfgang Spiess
Honorary Member	Stefan Jurga

Executive Officers 2016 - 2019

B. BLÜMICH
Macromolecular 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
J. DOLINŠEK
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
A. BÖCKMANN
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
G. JESCHKE
Laboratorium für Physikalische Chemie, ETH Zürich, CH-8093 ZURICH, Switzerland
Tel. +41 44 632 5702, Fax +41 44 633 1448, e-mail: Gunnar.Jeschke@phys.chem.ethz.ch
M. ERNST
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
S. VAN DOORSLAER
University of Antwerp, Departmet of Physics, Campus Drie Eiken, Universiteitsplein 1, 2610 Wilrjik, Belgium, e-mail: sabine.vandoorslaer@uantwerpen.be
M. JOHNS
School of Mechanical and Chemical Engineering, The University of West Australia, CRAWLEY, WA 6009, Australia, Tel. +61 8 6488 5664, e-mail: michael.johns@uwa.edu.au
Y.Q. SONG
Schlumberger-Doll Research, 1 Hampshire Street, Cambridge, MA 02139-1578 USA
Phone: +1 617 768 2333, Email: ysong@slb.com
J. VAN DUYNHOVEN
Unilever N.V., 100 Victoria Embankment, London EC4Y 0DY, United Kingdom, e-mail: john-van.duynhoven@unilever.com
G. BODENHAUSEN
EPFL, Institut des sciences et ingénierie chimiques, BCH 1529 (Batochime), 1015 Lausanne, CH, Tel. +41 21 693 94 31, e-mail: geoffrey.bodenhausen@epfl.ch
L. FRYDMAN
Weizmann Institute of Science, Department of Chemical Physics, 76100 Rehovot, Israel,
Tel: +972 8 934 4903, Fax: +972 8 934 4123, mail: lucio.frydman@weizmann.ac.il
C. REDFIELD
Department of Biochemistry, University of Oxford, South Parks Road OX1 3QU, United Kingdom, Tel. +44 (0)1865 613200, mail: christina.redfield@bioch.ox.ac.uk
B.H. MEIER
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
H.W. SPIESS
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
ST. JURGA
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

S. ASHBROOK
School of Chemistry, University of St. Andrews, North Haugh, ST. ANDREWS, KY16 9ST, United-Kingdom
J. BANYS
Vilnius University, Department of Radiophysics, Saulétekio 9 2040 VILNIUS, Lithuania
R. BOELENS
Bijvoet Center for Biomolecular Research, Utrecht University, Padualaan 8, NL-3584 CH UTRECHT, The Netherlands
V. CHIZHIK
University of St. Petersburg, Quantum Magnet.Phen.,Fac.of Physics, RU-198504 ST. PETERSBURG, Russia
J. DOLINŠEK
Institute Jozef Stefan, Jamova 39, SI - 1000 LJUBLJANA, Slovenia
I. FELLI
Department of Chemistry and Center for Magnetic Resonance (CERM), University of Florence Via L. Sacconi 6 50019 SESTO FIORENTINO, (FI), Italy
P. GIRAUDEAU
Université de Nantes, Faculté des Sciences et Techniques, 2 rue de la Houssinière, 44322 NANTES Cedex 03, France
D. GOLDFARB
Chemical Physics Department, Weizmann Institute of Science, 76100 REHOVOT, Israel
W. KOZMINSKI
Biological and Chemical Research Center, University of Warsaw, Krakowskie Przedmieście 26/28, 00-927 WARSAW, Poland
M. PONS
Institute for Research in Biomedicine, University of Barcelona, Josep Samitier 1-5, 80828 BARCELONA, Spain
V.V. TELKKI
Department of Physics, University of Oulu, P.O. Box 3000, 90014 OULU, Finland
C. THIELE
Technische Universität Darmstadt, Alarich-Weiss-Strasse 16, 64287 DARMSTADT, Germany
J. SPEVACEK
Inst. of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, 162 - 06 PRAGUE 6, Czechia
S. VAN DOORSLAER
SIBAC Laboratory, University of Antwerp, Universiteitsplein 1, B-2610 WILRIJK, Belgium

Emeritus members

L. KIMTYS
Department of Physics, Vilnius University, Universiteto Str. 3, VILNIUS 2734, Lithuania
F. 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

R.R. ERNST
Laboratorium für Physikalische Chemie, ETH Zürich, CH-8093 ZURICH, Switzerland
J. JEENER
Université Libre - Plaine, CP 223, Bld. du Triomphe, B - 1050 BRUXELLES, Belgium
P. MANSFIELD
University of Nottingham, Magnetic Resonance Centre, NOTTINGHAM NG7 2RD, U.K.
K.A. MÜLLER
IBM Zurich Research Laboratory, Säumerstrasse 4, CH - 8803 RÜSCHLIKON, Switzerland
K. WUETHRICH
Inst. f. Molekularbiologie u. Biophysik, ETH Zürich, CH-8093 ZURICH, Switzerland

Guest members

A. PINES
Dept. of Chemistry, University of California, BERKELEY CA 94720, USA, Delegate of ISMAR
J.A. NORRIS
Dept. of Chemistry, University of Chicago, South Ellis Ave. CHICAGO IL 6037-1403, USA
Delegate of the International EPR Society
K.A. McLAUCHLAN
Physical Chemistry Laboratory, Oxford University, South Parks Road, OXFORD OX1 3QZ, UK
Delegate of the International EPR Society
D. AILION
Dept. of Physics, Univ. of UTAH, 304 J. Fletcher Building, SALT-LAKE-CITY 84112, Utah, USA
J. BJORKSTAM
Electrical Engineergin (FT-10), University of Washington, 98195 SEATTLE WA, USA
S.H. CHOH
Department of Physics, Korea University, SEOUL 136-701, Republic of Korea
D. FIAT
University of Illinois, Dept. of Physiology and Biophysics, POB 6998, CHICAGO IL 60680, USA
E. FUKUSHIMA
ABQMR, 2301 Yale Blvd., SE, Suite C2, ALBUQUERQUE, NM 87106, USA
O. JARDETSKY
Stanford University, Magnetic Resonance Lab., STANFORD, CA 94305-5055, USA
C.P. SLICHTER
Dept. of Physics, University of Illinois, 1110 W. Green Street, URBANA IL 61801, USA

Future conferences

Ampere Events 2017

14 International Youth School-Conference „Magnetic resonance and its applications - Spinus-2017“	Saint Petersburg (Russia)	April 24-29 2017
Ampere NMR School 2017	Zakopane (Poland)	June 25 to July 1 2017
Euromar 2017	Warsaw (Poland)	July 2-6 2017
ICMRM	Halifax (Nova Scotia)	August 13-17 2017
10th Alpine Conference on Solid-State NMR	Chamonix Mont Blanc (France)	September 10-14 2017

Other Events 2017

58th Experimental Nuclear Magnetic Resonance Conference	Asilomar, Pacific Grove (USA)	March 26-31 2017
Spanish Biophysical Society	Sevilla (Spain)	June 6-8 2017
20th ISMAR conference	Québec City (Canada)	July 23-28 2017
SciX2017	Reno (USA)	October 8-13 2017
FoodMR	Brittany (France)	

Ampere Events 2018

Euromar 2018	Nantes (France)	July 1-5 2018

Other Events 2018

SciX2018	Atlanta (USA)	October 21-26 2018

Ampere Events 2019

ISMAR / Euromar 2019	Berlin (Germany)	August 25-30 2019