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d'informations mutuelles

**AMPERE**



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## Editorial

Dear AMPERE colleagues,

In the current political turmoil in Europe it may be easy to forget that the situation was much more difficult during the Cold War. At that time Groupement AMPERE was bridging the divide between East and West and I believe that as scientists we could still set a good example to our bickering politicians nowadays. To remind you of the more difficult past and the achievements that were possible nevertheless, this issue contains the account on the first fully home-built high resolution NMR spectrometer of Vilnius University in 1965, by Prof. Liudvikas Kimtys (p.2).

If you want to contribute a historical piece of your own, please contact us at [contact@ampere-society.org](mailto:contact@ampere-society.org)

Turning to the future, education of the young generation in our field becomes ever more important with increasing complexity of our research. The newly established subdivision 'Biological Solid-State NMR' organizes the 6<sup>th</sup> international training school on solid-state NMR, at the Universitat de les Illes Balears in Palma de Mallorca, from October 9-14, 2016 (p.5). You find more information on: <http://ampereschool2016.org/>

Please note that at EUROMAR 2016, the AMPERE Committee and the General Assembly will vote on revised statutes of Groupement AMPERE. The draft was already published in Bulletin No. 258/259 (Spring/Summer 2015). If you don't have the issue at hand, you can find it on our homepage [ampere-society.org](http://ampere-society.org).

AMPERE also offers the possibility to announce open positions online. For this, please send an e-mail with the information including to [job@ampere-society.org](mailto:job@ampere-society.org). If you want to have your favourite conference listed, please send information on date, location, and homepage to [contact@ampere-society.org](mailto:contact@ampere-society.org).



Gunnar Jeschke  
Secretary General of Groupement AMPERE

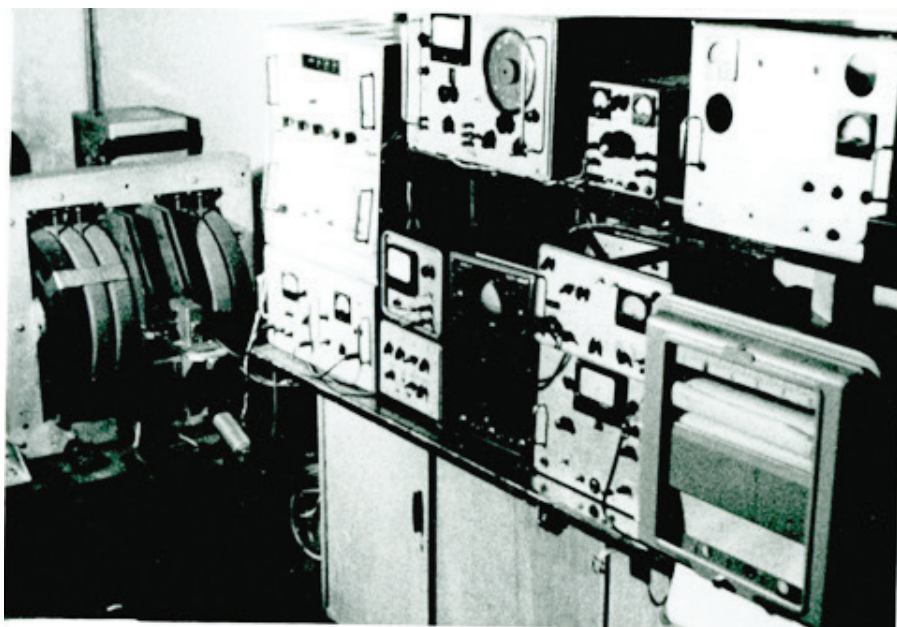
## **NMR spectrometry in Lithuania: a brief historical overview**

**Liudvikas Kimtys**

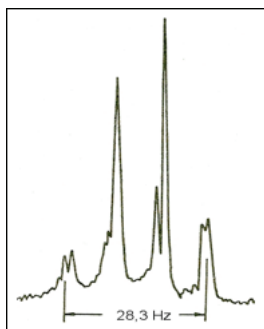
Faculty of Physics, Vilnius University, Lithuania

The idea to use NMR spectrometry in molecular studies in Lithuania (1940-1990 - republic of the former Soviet Union) was first put forward in 1959 at Vilnius University by the Head of Department of General Physics and Spectroscopy Dr. Henrikas Jonaitis, who really was a pioneer in experimental molecular spectroscopy here. The NMR project gained momentum in 1961 when physicist Giedrius A. Misiūnas (highly gifted in radio electronics) was invited from Šiauliai Pedagogical Institute (now University) to lead the creation of the spectrometer. He managed to attract enthusiastic students (I. Požėla and L. Kimtys) for the hardware manufacturing jobs. Within a few years the idea had been implemented and the spectrometer became operative in 1965. It was the first high-resolution 23 MHz CW  $^1\text{H}$  NMR spectrometer in Lithuania. Globally, it was not an outstanding achievement, but at that time most research institutes (Prague, Leipzig, Warsaw, Krakow, Moscow, Kazan, Leningrad, etc.) still used home-built low frequency instruments.

Our spectrometer was quite efficiently used until 1975 for investigating intermolecular interactions and molecular associations. All measurements for the first PhD NMR dissertations in Lithuania were performed on this spectrometer: L. Kimtys (1971), G.A. Misiūnas (1972), P. Mikulskis (1974). Spectrometric data was highly helpful for the researchers of organic chemistry of the Faculty of Chemistry (V. Daukšas, P. Vainilavičius, G. Dienys, R. Martinkus et al.) as well.



Part of the 23 MHz CW NMR spectrometer built at Vilnius University in 1965: the signal registration system and electromagnet (the total weight of it - ca. 1200 kg, 28,000 strands of 1.8 mm copper wire, weight - 380 kg.). All blocks of the spectrometer were located in the 16 m<sup>2</sup> room.



The splitting of  $-CH_2-$  line of ethanol (due to the first and second order  $^1H$ - $^1H$  spin-spin coupling) that was achieved in 1965 indicated sufficiently high resolution of the 23 MHz NMR spectrometer.

The first industrially manufactured CW spectrometers were purchased in Lithuania (Vilnius University, Institute of Biochemistry and Kaunas Polytechnic Institute (now Kaunas University of Technology) only in 1973. Unfortunately, those were only of a medium instrumental level for that time. They were produced by the Czechoslovak company „Tesla“ and were suitable only for  $^1\text{H}$  and  $^{19}\text{F}$  NMR measurements at 80 MHz. In 1989 the University bought a 80 MHz pulse Fourier spectrometer of the same brand, which has already been suitable for  $^{13}\text{C}$  measurements as well. A used, but still well functioning 300 MHz  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectrometer was donated by the USA in 2003 and efficiently used at the Faculty of Chemistry until 2012.

Despite the poor local experimental NMR facilities some scientists of Vilnius University managed to carry out numerous valuable investigations by cooperating with “rich” experimental laboratories in Norway, Sweden, Germany, Poland, etc. The University researchers published over 300 scientific publications and presented more than 70 reports at specialized conferences, also published the first Lithuanian text books (“Radiospectroscopy”- 1985, “Magnetic resonance spectrometry” - 2000). Professors L. Kimtys (1993) and V. Balevičius (2013) have won the Lithuanian National Science Prizes.

Thanks to the significant EU financial support, the real breakthrough for Lithuanian NMR spectrometry was achieved in 2012, when modern NMR devices were installed: two 400 MHz instruments at Vilnius University and a 700 MHz instrument at Kaunas University of Technology (all from Bruker). One 400 MHz spectrometer has the flexible facilities for investigations in a wide temperature range of liquid as well as solid samples. Together with the modern NMR spectrometers, a state of the art pulsed EPR spectrometer (Bruker E-580) was installed as well. The new instrumentation inspired new enthusiasm in the development of magnetic resonance spectrometry research at Vilnius University, attracting gifted undergraduate, graduate and PhD students.

# Ampere Biological Solid-State NMR School

**Universitat de les Illes Balears**

**October 9-14 2016**



Following the successful tradition of earlier meetings in Germany (2006, 2014), Denmark (2008), the Netherlands (2010) and Czech Republic (2012), the 6<sup>th</sup> international training school on solid-state NMR will be organized this year at the Universitat de les Illes Balears in Palma de Mallorca, Spain, from October 9-14, 2016.

The Ampere Biological Solid-State NMR School is a course intended for Ph.D. students and postdoctoral scientists with research interests and initial expertise in solid-state NMR spectroscopy.

The school will start on Sunday with a social gathering and dinner. School hours will be 9h30–18h00 all days except Wednesday afternoon, which will be free. Poster sessions are planned on Tuesday and Thursday night. We intend to reserve ample time for social gathering and scientific interactions in order to allow for close contacts between the school attendees and the speakers.

In order to attend the school you need to be a member of the Groupement Ampere. If you already are a member, the course registration fee is 30 Euro. If you are not, the course registration fee is 60 Euro and includes the Ampere membership for the year 2017.

For a detailed program and further information regarding the upcoming registration see:

<http://ampereschool2016.org>

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## Future conferences

### Ampere events 2016

Food MR	Karlsruhe (Germany)	June 7-10 2016
Ampere NMR School	Zakopane (Poland)	June 12-18 2016
Euromar 2016	Aarhus (Denmark)	July 3-7 2016
MRPM13	Bologna (Italy)	September 4-8 2016
Ampere Biological Solid-State NMR School	Palma de Mallorca (Spain)	October 9-14 2016

### 2017

Euromar 2017	Warwaw (Poland)	July 2-6 2017
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### Other events 2016

49 <sup>th</sup> Annual International Meeting of the ESR Spectroscopy Group	Colchester (England)	April 3-7 2016
57 <sup>th</sup> ENC	Pittsburgh (USA)	April 10-15 2016
Interpore Conference	Cincinnati (USA)	Mai 9-11 2016
ICMRBS 2016	Kyoto (Japan)	August 21-26 2016
APES 2016	Irkutsk (Russia)	August 28 - Sept. 2, 2016

### 2017

20 <sup>th</sup> ISMAR conference	Québec City (Canada)	July 23-28 2017
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