

Magnetic Moments in Central Europe 2022

1–4 June 2022, Primošten, Croatia

<https://mmce2022.hkd.hr/>

by Predrag Novak

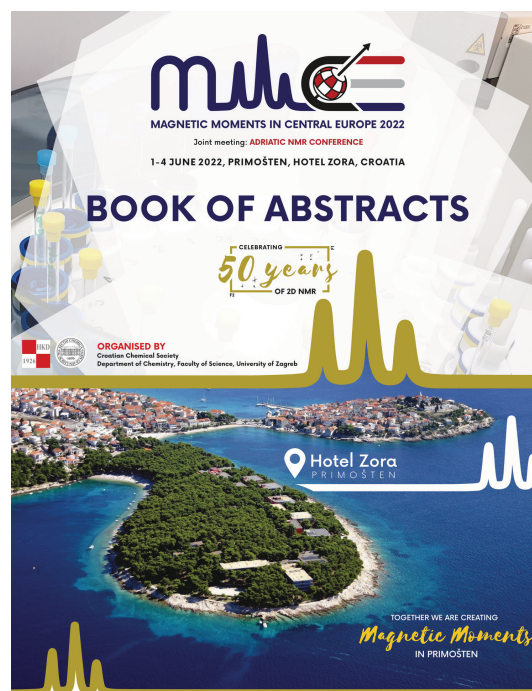
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THE EIGHTH international conference Magnetic Moments in Central Europe (MMCE) took place from 1 to 4 June 2022 at the Congress centre of the hotel Zora in Primošten, Croatia. The Conference was organized by Croatian Chemical Society and Department of Chemistry, Faculty of Science, University of Zagreb. It was held jointly with the Adriatic NMR Conference^[1] celebrating 50 years of two-dimensional NMR, firstly proposed by Jean Jeener at the Ampere International Summer School in Baško Polje in 1971.^[2,3]

Here are some reminiscences sent to the organizer from professor Jeener about that school:

„At that time I was mainly interested in the thermodynamics and statistical mechanics of nuclear spin systems in solids. Our experiments were performed using rf pulses (or pairs of phase-shifted pulses) and simultaneous observation of the X and Y rotating frame components of the spin response. I dreamed that a similar technique might be useful in high resolution NMR in liquids, and this led me to the theoretical idea of 2D Fourier transform spectroscopy. However, I did not have the proper instrumentation to perform even a proof-of-principle experiment. After the Baško Polje School, it became clear that a number of research groups immediately undertook to transform the 2D idea into an efficient tool in high resolution NMR, keeping me informed of their progress. Under these conditions, I mainly pursued my investigations on solid NMR.“

“During the free times of the school, my 4-meter-long sailboat was intensively used in front of the hotel, and this contributed to the creation of personal relations between participants and myself, in addition to informal discussions about NMR and physics in general. I hope that the MMCE



We are happy to welcome you on MMCE 2022 to celebrate 50 years of 2D NMR
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Figure 1. MMCE 2022 Book of Abstracts.

meeting will also be the occasion for new friendship in addition to the essential scientific discussions”.

MMCE was conceived in 2007 with the vision of providing a unique knowledge-sharing event for NMR scientists and students in Central Europe and beyond. The Conference’s aims have been to address all types of



Figure 2. Participants of the MMCE 2022.

theoretical and applied NMR spectroscopy - from the fundamental theory and small-molecule structure determination in solution and solid state, new pulse sequences, software and hardware development, mixture analysis, metabolomics, benchtop NMR etc., to biological systems.

MMCE 2022 conference gathered about 150 participants from Europe (Slovenia, Austria, Germany, Italy, Romania, Hungary, Bulgaria, Poland, Czech Republic, Spain, France), USA, Australia, and UK, thus being the largest one so far. A number of young researchers, diploma, PhD and postdoctoral students took part at the Conference which was organized through tutorial, historical, invited and section lectures as well as poster presentations.



Figure 3. Geoffrey Bodenhausen's reminiscence of early days of two-dimensional Fourier transform NMR

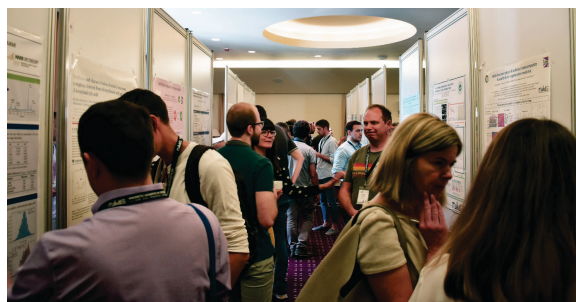


Figure 4. Poster session

It started with a pre-conference lecture given by Frances Separovic (*NMR Structural Studies of Antimicrobial Peptides in Model Membranes and Live Bacteria*), followed by two historical talks given by Geoffrey Bodenhausen (*Early Days of Two-dimensional Fourier Transform NMR*) and Norbert Müller (*Some Memories About NMR at ETH Zurich in the mid-1980s*) who both worked with Richard Ernst, a Nobel Prize Laureate. Tutorial talks provided by Gareth Morris (*Pure Shift NMR Methods*) and Klaus Zangger (*Selective Excitation*) shared a distilled wisdom on topics that were captivating and instructive to both students and senior NMR scientists.

The best posters were: *Long-range C-F couplings in conformational analysis of disaccharides* presented by Ema Chaloupecká; *Understanding the attraction between hydrophobic cavities and benzene derivatives* presented by Tea Babić; *^{19}F -centered NMR spectroscopy for the analysis of complex mixtures* presented by Nicholle G. A. Bell, and *DNA construct optimization for the NMR structural studies of the 8-17 dnzyme* presented by Julia Wieruszewska and Aleksandra Pawłowicz.



Figure 5. Best poster awards.



Figure 6. Social gathering.

Members of the International organizing committee of MMCE were: Janez Plavec, Robert Konrat, Wiktor Koźmiński, Michal Kalinak, Jan Sykora, Predrag Novak, Csaba Szantay, John Breslin, Manuel Perez, Thomas Zellhoffer, Tibor Liptaj (emeritus member), and Jan Schraml (emeritus member).

Members of the Local organizing committee of MMCE were: Predrag Novak – chair, Andrea Usenik, Vladislav Tomišić, Nikola Bregović, Jelena Parlov Vuković, Danijel Namjesnik, Ivana Mikulandra, Goran Landek, Dražen Vikić-Topić, and Vilko Smrečki.

We are grateful to all sponsors, exhibitors and supporters for financing this event: Bruker, Jeol, RS²D, Selvita, INA, AlphaChrom, Xellia, Aparatura, Jasika, Rototec-Spintec, Eurofins, Ansar Analitika, Mettler, Spin-Doc, Messer, LKB, Primalab, Accumular, ACD-Labs, Armar Isotopes, and Ru-Ve.

I would also like to thank all participants who attended the conference to celebrate 50 years of 2D NMR and to share magnetic moments in the charming city of Primošten on the unique Adriatic coast. I strongly believe that MMCE 2022 served as a forum for an extensive networking opportunity fostering exchange of knowledge and experience among students and scientists.

We will continue organizing Adriatic NMR Conference in 2023 from June 1 to 4 in Mali Stone at the peninsula of Pelješac.

You are all invited to join us!

Predrag Novak

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