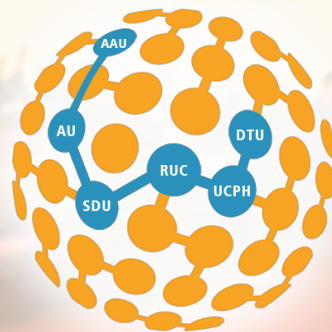


# Newsletter

## DANNMR



2024 - 2

### Exciting News: Meeting on vision for Danish NMR in October!

#### DANNMR invites all danish NMR scientists to discuss the vision for Danish NMR

The Danish NMR community has a strong tradition for collaborating and coordinating instrument centers and national activities. The field of NMR spectroscopy is evolving at a dizzying pace, high field instruments are being installed in our neighboring countries and alternative structural techniques are emerging. This calls for a discussion of how this affects Danish NMR and how to position Danish NMR to benefit from these developments. Therefore, DANNMR invites Danish NMR scientists to discuss the challenges and opportunities for Danish NMR at a member meeting at Syddansk Universitet 23 October 2024. International representatives of the community will be invited to give their perspectives on trends in NMR spectroscopy.

**Mark your calendars and register here:** <https://forms.office.com/e/XjTPe7XPFS>

### Instruments

#### Free access to The Danish Center for Ultrahigh field NMR spectroscopy

The NMR Laboratory Manager **Dennis Wilkens Juhl** (AU) informs:

The Novo Nordisk foundation grant that allowed the upgrade of the 950 MHz console also provides funding allowing free access to the facilities at The Danish Center for Ultrahigh field NMR spectroscopy. We therefore encourage all potential users to apply for free access at our facility using the application form at [nmr.au.dk](http://nmr.au.dk).

The free access is covering spectrometer expenses; travel to and from the center, and accommodation in Aarhus and all applications will be evaluated by the local facility management before any access can be granted.

**For the remaining of 2024, we have about 2 weeks of free spectrometer time left.**



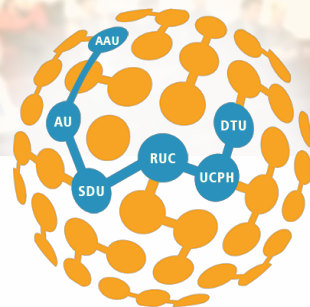
Photo by: Dennis Wilkens Juhl

### Bruker probe maintenance

Many groups are experiencing challenges getting service technicians from Bruker for maintenance of their probes. Some users have had good experiences with the company P&L Scientific based in Stockholm. If you are having difficulties getting your probes serviced, you could try them out.

**Service technician Pavel Yushmanov, e-mail: [pavel@plscientific.se](mailto:pavel@plscientific.se)**

**P&L Scientific homepage: <https://www.plscientific.se/?NMR-services/NMR-probes>**



## Announcements: coming meetings

### FGMR meeting: Annual Discussion Meeting and Joint Conference of the German, Danish, Polish, and Swedish Magnetic Resonance Communities

Join the 45th FGMR Annual Discussion Meeting and Joint Conference of the German, Danish, Polish, and Swedish Magnetic Resonance Communities, which will be held under the auspices of the Division of Magnetic Resonance (FGMR) of the German Chemical Society (GDCh) together with the three partner countries Denmark, Poland, and Sweden in the beautiful Hanseatic City of Rostock.

The program will cover all topics where resonances of electron and/or nuclear spins are detected, including classical solution and solid-state NMR/EPR as well as all types of other related topics like hyperpolarization, dynamics & diffusion, imaging, instrumentation, exotica, legal affairs, and much more. Besides 11 plenary presentations as well as 30 invited talks over 3 parallel sessions, we will additionally select 30 of the contributed abstracts as promoted talks.

Niels Christian Nielsen (AU) is representing Denmark in the steering Committee.

Register here: <https://www.fgmr2024.uni-rostock.de/>

“ We aim to provide a comfortable atmosphere of intense knowledge exchange, supporting you to find effective scientific solutions and jumpstarting novel developments within the magnetic resonance community all over the world.



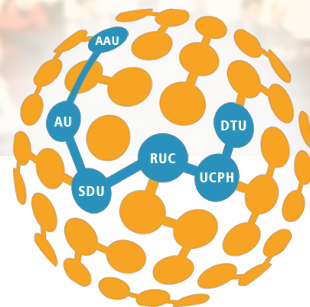
## DANNMR Annual Meeting

### Prof. Reinhard Wimmer (AAU) invites you all to the next DANNMR Annual Meeting 2025

The 2025 edition of the Danish NMR Meeting will be held on January 30th-31st, 2025 at the Comwell Rebild Hotel, located at the gates of the Rebild Bakker National Park just south of Aalborg. We are looking forward to hosting the Danish NMR community & friends for two days of nuclear and social interactions. Details will be provided at <https://danish-nmr-meeting.dk>.

“ The DANNMR Annual Meeting is a great example of the close collaboration within the Danish NMR community. With around a hundred participants this 2024, from all the six Danish universities and a dozen different companies, it illustrates how well functioning the collaboration is.





## New NMR stories

### From the Australian Courts to Danish Laboratories: Calmodulin and Infant Cardiac Arrests

In 2023, an Australian woman was released from prison, where she had spent the previous 20 years, wrongfully convicted of having killed her four infants. Scientists discovered that all four children carried mutations in vital genes. Two of the children carried a mutation in one of the calmodulin genes and in vitro experiments showed that this mutation severely impacts the function of calmodulin and that the mutation could have caused cardiac arrest in those two infants.

A mechanistic explanation of the effect of the mutation on the protein structure and dynamics was given in a recent article by a group of researchers around Reinhard Wimmer from Aalborg University and Hideo Iwai from Helsinki University. The mutated amino acid acts as a C-capping residue and the mutation thus changes structure and stability of the preceding helix. Whereas a salt bridge can stabilize the variant protein in the absence of calcium, leading to a marked rigidification of the molecule, the same is not happening in the calcium-bound form, leading to a destabilization of the protein fold. As a result, calcium binding is impaired for this variant. In addition, replacing a small amino acid with a bulky one, leads to sterical hindrance when the mutated calmodulin interacts with the ion channels that regulate the heartbeat. The work made use of segmental labelling with split inteins, only labelling the mutated domain of calmodulin.

Cell Calcium 117, 102831 (2024),  
[10.1016/j.ceca.2023.102831](https://doi.org/10.1016/j.ceca.2023.102831)

