

ANZMAG NEWS: NOVEMBER 2022

By Prof. Oliver A.H. Jones (RMIT University - oliver.jones@rmit.edu.au)

Hi all, Welcome to the September – November 2022 edition of ANZMAG News.

ANZMAG CONFERENCE

The **13th Conference of the Australia & New Zealand Society for Magnetic Resonance** will take place in Marysville, Victoria from 4 to 8 December 2022. A few points

- Today (25th Nov) is the last day to register <https://www.anzmagconference.org.au/>
- Day registrations are available
- Last day for poster submission is this Sunday 27th Nov
- There have been very few applications for travel bursaries - even from eligible people who have already registered. Make sure you apply if eligible.
- Plenaries talks will be given by
 - Lindy Rae, Gillian Goward, Hari Arthanari, David Craik, David Wishart, Rasmus -- - Linser, Mei Hong, Julien Orts

A big THANK YOU to ANZMAG2022 sponsors: Novachem, Bruker, Magritek, Jeol, Siemens, CFBD, NMR Service, AXT and Supagas.

Bruker will be running a user meeting which you can find out about at <https://www.bruker.com/en/news-and-events/events/anzmag.html>

Follow @ANZMAG on twitter and use the hashtag #ANZMAG2022 I will be speaking on Tuesday but have a clash with R&D topics conference (on at the same time).

DP GRANTS

The **ARC Discovery grants** were announced yesterday. To the ARC's credit they got the program done in just over 6 months. Sadly, the data also shows the smallest number of funded projects and total funding is the lowest in 8 years (at least). Even compared to 2018 of (\$226m), this year's funding of \$221m is lower by 10% in real terms. The number of grants submitted (2588) was also lowest number submitted since at least 2016 but the success rate, at 18.5%, was low*.

There was some success for magnetic resonance. Professor Michael Johns' project on monitoring desalination membrane fouling using sodium magnetic resonance was funded as was his project with Neil Robinson on liquid hydrogen. Prof Feng Liu's project to develop novel magnetic resonance imaging methods and Professor Thomas Huber new tools to confirm 3D structure predictions of proteins.

The full list is at <https://rms.arc.gov.au/RMS/Report/Download/Report/a3f6be6e-33f7-4fb5-98a6-7526aaa184cf/243>

*Details from https://twitter.com/ARC_Tracker

Congratulations to those who were successful and commiserations to those who lost out.

PAPER OF THE MONTH - NOVEMBER

Paper of the month is entitled “**Nuclear magnetic resonance diffraction with sub-angstrom precision**” by Haas et al. The paper explores the feasibility of Nuclear Magnetic Resonance diffraction (NMRd) to investigate the lattice structure of crystalline solids on an atomic scale, a feat that had only been possible for larger-scale imaging applications MRI. The authors demonstrate the ability to encode and detect angstrom-scale modulation of approximately 2 million ^{31}P spins in an indium-phosphide (InP) nanowire with sub-angstrom precision. They also have some very nice images. You can read about the work at <https://www.pnas.org/doi/full/10.1073/pnas.2209213119> if interested.

Bruker Virtual NMR Users Meeting 2022

The **Bruker NMR Users Meeting** is an annual gathering of our NMR community and a chance to listen, learn, and share knowledge and ideas. This year, it will be live online on December 6th, 2022. See <https://www.bruker.com/en/news-and-events/events/bruker-virtual-nmr-users-meeting.html> for details.

Vale Professor Sever Sternhell AO FAA (30/05/1930 to 18/11/2022)

ANZMAG is sad to report the passing of Professor Sever (Sev) Sternhell AO FAA at the age of 92. Sev was born in Lvov, Poland, now Lviv, Ukraine, (coincidentally where my maternal grandparents are from) which became a Jewish ghetto under Nazi occupation during his childhood. He arrived in Sydney in February 1947 and began his career as a research chemist in private industry with Monsanto in 1953. Two years later he was appointed a senior research officer at CSIRO and remained in that position until 1964. He was a senior lecturer in the Department of Organic Chemistry at the University of Sydney, from 1964 until 1967. He spent a further ten years as a reader in organic chemistry there before being appointed Professor of Organic Chemistry. His name is closely associated with NMR, and he was the prime mover for the introduction of this technique into Australia. He was in charge of the first NMR spectrometer in Australia and he used it extensively; his monograph on this subject (with L. M. Jackman, a fellow Australian) had world-wide success as a textbook for the application of this method; he published numerous research papers exploring various aspects of NMR and developing new applications; and he was the initiator of the National NMR Centre in Canberra. Our thoughts are with Sev's family, his friends and colleagues.

STORIES FROM THE WEB

- <https://www.technologynetworks.com/cell-science/news/innovative-method-to-observe-cell-transport-developed-366950>
This story is on the use of EPR to observe cell transport
- <https://www.futurity.org/gadolinium-mri-contrast-agent-2833492-2/An>
This is an interesting article on work investigating how gadolinium-based contrast agents work on a molecular level.
- <https://www.chemistryworld.com/research/controversy-surrounds-corrected-chemical-structures/4016494.article>
Possibly a slightly provocative article about using computational NMR prediction to correct misassigned chemical structures.