ANZMAG NEWS – June/July 2025

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Dear all, Welcome to the double issue of ANZMAG News for June and July 2025. I hope you enjoy the newsletter. Don't forget to send in anything you would like to see in ANZMAG news.

NEWS

- Congratulations to Emeritus Professor Leonard Lindoy AO and Emeritus Professor John Carver OAM, and Dr. Deidre Tronson OAM on their well-deserved recognition in The King's Birthday 2025 Honours List for their outstanding contributions to the chemical sciences and education. NB: Anyone can nominate any Australian for an award in the Order of Australia. If you know someone worthy, head over to https://www.gg.gov.au/australian-honours-and-awardsorder-australia/nominate-someone-order-australia
- The Magnetic Resonance community mourns the passing of Dr. Edwin (Ted) D. Becker, former Secretary General of ISMAR and ISMAR Fellow. An obituary by Ad Bax and Rob Tycko can be found at the ISMAR website https://ismar.org/2025/08/06/edwin-d-becker-1930-2025/

CONFERENCES

- The 14th biennial conference of the Australia and New Zealand Society for Magnetic Resonance to be held on Sunday, 30th November to Thursday, 4th of December 2025 at Tangalooma Resort, Moreton Island, Queensland, Australia. See https://anzmag.com.au/conferences-and-events/conferences-2 for details.
- Early bird registration is still available for Pacifichem in Honolulu, Hawaii, on December 15-20, 2025. See https://pacifichem.org

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JOBS AND FELLOWSHIPS

- A/Prof Greg Pirens kindly let me know that the University of Queensland have a Principal Technician, NMR Spectroscopy position available. It is being advertised as a professional HEW7 position. See https://uq.wd3.myworkdayjobs.com/uqcareers/job/St-Lucia-Campus/Principal-Technician--NMR-Spectroscopy_R-53268 Any questions about the post can be sent to A/Prof Greg Pierens on g.pierens@uq.edu.au. Closing date is **13th August**.
- UQ are also advertising not one but two Lecturer/Senior Lecturer roles in Bioengineering. See https://www.nature.com/naturecareers/job/12842090/lecturer-senior-lecturer-teaching-and-research-in-bioengineering/ Closing date is **31st August**

GRANTS AND AWARDS

- The Shaping Australia Awards, proudly presented by Universities Australia, shine a spotlight on the impactful contributions universities make each day – shaping our nation's future through teaching, research and community service. Entries close 5 pm, **5 September 2025**. See https://www.shapingaustraliaawards.com.au/about for all the details.
- The Institution of Chemical Engineers has a call out for its awards. See https://www.icheme.org/sustainable-world/medals-and-prizes/. I think the deadlines vary between awards, but most seem to have a deadline of **31st October**.

MAGMET Online NMR Processing

MAGMET is a web system from David Wishart's lab that automatically identifies and quantifies metabolites using 1D ^{1}H NMR spectra of serum. The NMR spectra must be collected in a standardised fashion (details on the website) for MAGMET to perform optimally. The system first performs all spectral processing steps, including Fourier transformation, phasing, solvent filtering, chemical shift referencing, baseline correction and reference line shape convolution automatically. It then deconvolutes the resulting NMR spectrum using a reference spectral library, which here contains the signatures of more than 60 metabolites. This deconvolution process determines both the identity and quantity of the compounds in the biofluid mixture. Extensive testing shows that MAGMET meets or exceeds the performance of highly trained human experts. You can see the site at http://magmet.ca/users/login There is also a video on how to use the system at https://www.youtube.com/watch?v=XcEUTb6a9xI

PAPER OF THE MONTH

This month's paper of the month is on the subject of signal processing. It is entitled "Robust Denoising of Laplace NMR and Multidimensional NMR Spectroscopy Using Chemometrics" and is by Zhan et al. Most readers are probably (hopefully) familiar with conventional Fourier transform NMR. There is also Laplace NMR, which is used to give insight into molecular motion and spin interactions by analysing relaxation and diffusion behaviours. The accuracy of Laplace NMR is often compromised by significant noise and unwanted modulation artifacts. In this paper, the authors have created a method using principal component analysis (PCA) to effectively suppress both experimental noise and unrelated modulation interference in solution-state NMR. This approach requires no prior system knowledge or complex setup and apparently can be executed within seconds on a standard desktop computer. It enhances the signal-to-noise ratio (SNR) by up to an order of magnitude, substantially reducing acquisition time. The robustness of the method was demonstrated across various Laplace NMR applications, including relaxometry and diffusometry experiments, pure shift Laplace NMR, and high-dimensional data sets, as well as conventional multidimensional NMR data. You can find the paper online in the Journal of Analytical Chemistry at https://pubs.acs.org/doi/full/10.1021/acs.analchem.5c03030 if you would like to read it.

STORIES FROM THE WEB

- https://www.bruker.com/en/resources/library/application-notes-mr/epr-101.html - EPR 101 from Bruker. Includes the EPR spectrum of toothpaste and tea.
- https://www.nih.gov/news-events/scientists-develop-high-performance-mri-scanner-effort-define-microscopic-brain-structures - a new, ultra-high-resolution brain imaging system that can reconstruct microscopic brain structures has been developed.
- https://www.pharmtech.com/view/fda-adopts-intact-nmr-to-advance-nanoemulsion-drug-quality-assessment - The USA FDA seems to be using NMR for nano-emulsion drug quality assessment