

ANZMAG NEWS - SEPTEMBER 2015

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Dear all,

Welcome to ANZMAG news September 2015. I hope you enjoy the latest newsletter but as usual please feel free to send suggestions, comments etc. So far I have had very few comments, which I am hoping means everybody is happy with the newsletter but if not, please speak up.

JOBS GRANTS AND FELLOWSHIPS

Macquarie University is currently looking for a full time **Senior Scientific Officer in NMR** to coordinate the operations of their Nuclear Magnetic Resonance facilities and provide expert technical advice. Full details can be found at <http://jobs.mq.edu.au/mob/cw/en/job/496142/senior-scientific-officer-nmr>

There is still (just) time to apply for the **VESKI 2015 Innovation Fellowships**. Successful individuals may receive up to AUD \$50,000 per annum for a maximum of three years to undertake their research in Victoria. Full details at <http://www.veski.org.au/fellowships?q=vif> - good luck if you apply.

If you can think of a way to use magnetic resonance for sports testing (EPR for cobalt in horses perhaps) then the partnership for clean competition grants may be of interest see <http://www.cleancompetition.org/>

Google have a new call out for **research awards**. I like these as I think it would be really cool to have a grant from Google http://research.google.com/university/relations/research_awards.html for details.

BAYESIL AUTOMATED NMR SOFTWARE

Bayesil is a web system that automatically identifies and quantifies metabolites using 1D proton NMR spectra of ultra-filtered plasma, serum or cerebrospinal fluid. It is not quite as easy as it sounds as the NMR spectra must be collected in a standardised fashion and the data presented to the system in a set way. However, if you do get the data in the right format then Bayesil will perform all spectral processing steps, including Fourier transformation, phasing, solvent filtering, chemical shift referencing, baseline correction and reference line shape convolution. It then deconvolutes the NMR spectrum using a reference spectral library of 60 compounds. It apparently does this as well as a human expert. You can read more and try the software at <http://bayesil.ca/>

UPCOMING CONFERENCES

The Australian & New Zealand Metabolomics Conference (**ANZMET 2016**) will be held from 30th March - 1st April 2016 (save the date) at the La Trobe Institute for molecular Science in Melbourne Victoria. ANZMET is supported by the Australia and New Zealand Metabolomics Network (ANZMN) in conjunction with the Metabolomics Society and Metabolomics Australia (MA) Early-bird registration will open at <http://www.anzmet.org> soon. NMR will be a feature of the conference.

The next **ANZMAG conference** will be held from the 29th November to the 3rd December 2015. It will take place in the Copthorne Hotel and Resort near Paihia in the Bay of Islands. See <http://anzmag2015.co.nz/> for more. **NB: Today (14/9/15) is the final date for abstract submission.**

PUBLICATIONS CORNER

This month (after covering NMR and MRI) I am looking at some introductory EPR textbooks.

'*Electron Spin Resonance: Elementary Theory and Practical Applications*' by John A. Weil and James R. Bolton (2nd Edition) is aimed at those with a strong interest in electron spin resonance but not much mathematical training. It is an excellent introduction to EPR for those keen to know more. See <http://au.wiley.com/WileyCDA/WileyTitle/productCd-047175496X.html> for more details.

'*Electron Spin Resonance: Analysis and Interpretation*' by Philip Rieger is published by the Royal Society of Chemistry. It describes the extraction of useful information from ESR spectra for a range of paramagnetic organic, inorganic and organometallic molecules and lays the groundwork for understanding more sophisticated experiments. More details can be seen at <http://pubs.rsc.org/en/Content/eBook/978-0-85404-355-2-!divbookcontent>

'*Electron Paramagnetic Resonance Theory*' by E. Duin can be found online at http://www.auburn.edu/~duinedu/epr/1_theory.pdf and aims to provide the reader with a basic understanding needed to be able to get useful information using EPR spectroscopy.

NB: See also the ANZMAG lectures on EPR spectroscopy by Prof Daniella Goldfarb all available for free at <https://www.youtube.com/playlist?list=PLE20foNk9J6JKdDQrDISI987F3eQdTUqH>

ONLINE MAGNETIC RESONANCE COMMUNITIES

Agilent Spinsights at <https://spinsights.chem.agilent.com/> is a really great resource full of discussion on MR technology, development, history and business. Check out the latest details on CRAFT.

BioNMR has been a NMR aggregator and online community since 2003 and has a lot of helpful information. Please see <http://www.bionmr.com/> for more details.

Bruker's magnetic resonance blog, The Resonance at <http://www.theresonance.com/tag/bruker/> is another good source of hints and tips for MR.

STORIES FROM THE WEB

This month there is an interesting report showing how researchers have developed a method that uses EPR to measure oxygen saturation deep within the cerebrum (of rabbits). You can see more at <http://www.medgadget.com/2015/02/electron-paramagnetic-resonance-monitors-oxygen-deep-within-brain.html> (including a link to the full paper) if you are keen.

The link at <http://www.theresonance.com/using-time-domain-nmr-to-determine-shelf-life-of-products/> takes you to a story from the resonance on the use of time-domain NMR to determine shelf life of a variety of food products. I think it's a very clever idea.

In MRI news this month positron emission tomography (PET) in combination with MRI may be more accurate in detecting liver metastases than PET with computed tomography (<http://www.healio.com/hepatology/oncology/news/online/%7B708f1cb8-3312-412d-91d6-2bde2f42c499%7D/petmri-accurate-in-detecting-liver-metastases>).

I had reports that the link to last month's story on the NMR install at the University of Melbourne did not work for everybody. Apologies for that; I've included a new link in here; please see - <http://www.bio21.unimelb.edu.au/everyday-quantum-mechanics-and-study-cell-membranes>
