

MICROSCOPY NEWS

JULY 2009

FROM THE DIRECTOR

John Terlet is currently away and coming to the end of seven weeks of well deserved long service leave. We are only a little jealous!

The first half of this year has flown past for all of us but not without a number of significant highlights. In February the tenth Biennial Symposium of the Australian Microbeam Analysis Society (AMAS X) was hosted here at the University of Adelaide. The AMAS X symposium was a great success, with 160 people involved in workshops associated with the three day Symposium. The next AMAS Symposium will be held at the Australian National University in 2011.

In the first week of June four of our senior staff attended the Australian Microscopy Microanalysis Research Facility (AMMRF) National Workshop held in Fremantle, Perth. The workshop, attended by staff from all major national nodes of the AMMRF, focused on the necessary training required by users, in meeting their research needs. As the aim of Adelaide Microscopy is always to train users, providing hands on experience with microscopy, this workshop was extremely useful. Whilst the demands of our researchers, students and users are very diverse, the forms of training we provide are critical for the users' experience and also to critical to ensure the data produced from the work is of the highest quality.

Once again Adelaide Microscopy, in conjunction with Olympus Australia, hosted another successful Light Microscopy training course. On June 15th, for the first time in the new refurbished Ray Last Laboratories. See the report from Lyn Waterhouse in this newsletter.



Prof. Richard Russell Opening the AMASX Symposium

Adelaide Microscopy are supporting a visit in August of the **NCRIS Characterization Council**, who will be in Adelaide on **Thursday August 6th** for the Characterization Council Roadshow. This will be a unique opportunity for the research community of South Australia to speak with and hear presentations from Australia's major research facilities, including The Australian Synchrotron, Australian Microscopy & Microanalysis Research Facility, National Imaging Facility and the National Deuterium Facility. The NCRIS Characterization Council Roadshow will be held in the Eclipse room at the University of Adelaide's Union Building, adjacent the University of Adelaide Cloisters.

We are looking forward to a busy yet exciting second half to 2009.

Angus Netting

Acting Director, Adelaide Microscopy

TAP FUNDING THROUGH AMMRF



Funding is available under the Travel and Access Program (TAP) for short-duration secondments to core nodes within the Australian Microscopy & Microanalysis Research Facility (AMMRF). The aim of this program is to provide access for researchers to state-of-the-art instrumentation and expertise for nanostructural analysis. There are three components to the TAP grants:

- * A contribution towards airfare between the home city of the user and the city of the laboratory where the work will be conducted.
- * A contribution towards accommodation-costs.
- * A contribution to the costs of the instrument access.

For more information follow the AMMRF link from Adelaide Microscopy's web site or contact John Terlet on 8303 5855.

NEW SOLUTION ICP-MS FACILITY FOR ADELAIDE MICROSCOPY

BEN WADE

In early 2009 Adelaide Microscopy accepted delivery of a new Agilent 7500cx ICP-MS to take place alongside the existing Agilent 7500cs ICP-MS attached to the New Wave UP-213 laser ablation unit. The addition of the new ICP-MS has allowed Adelaide Microscopy to dedicate the Agilent 7500cs to elemental analysis of solutions.

The Agilent 7500cs has the potential to analyse at trace levels across nearly the entire mass range, from ppm down to ppt concentrations on a large range of dissolved mediums including (but not limited to!);

- rock and minerals
- pharmaceutical drugs
- plant material
- fresh and saline water samples
- soil and leachates
- metals
- proteins
- teeth and bones
- ceramics

In order to obtain accurate information on low concentration solutions, one hurdle that solution quadrupole ICP-MS analysis must overcome is the effect of polyatomic and isobaric interferences. The Agilent 7500cs is ideally suited for this, being equipped with an Octopole Reaction System (ORS). The ORS allows the user to bleed either Helium or Hydrogen gas into the path of the ions in order to remove interfering signals.

In addition to this, Adelaide Microscopy is currently only one of three institutions in Australia that uses the recently released Agilent Mass Hunter software on their solution ICP-MS controlling computer. Mass Hunter greatly improves the ease of use of the instrument and allows more flexible processing of the data both during and post run.

The standard AM instrument hourly fee rate (+\$15/hr for ICP gases and batch fee) will apply to the solution ICP-MS. Please contact either myself (benjamin.wade@adelaide.edu.au) or Angus Netting (angus.netting@adelaide.edu.au) for information on sample preparation, fees, and access to the instrumentation.



Agilent 7500cs instrument set up for solution mode at Adelaide Microscopy



Sample introduction end of the 7500cs

LASER ABLATION AND ICPMS USERS MEETING



South Australian ICPMS users with Fred Fryer and Chris Tye from Agilent

In May Angus Netting attended the first ever meeting of Laser Ablation specialists with New Wave Research Company. The meeting was held at the University of Tasmania and was immediately followed by the 10th Annual meeting of the Australian Agilent ICPMS users held at CODES, University of Tasmania. These meetings are highly valuable for practitioners of microanalysis to share their work, and keep updated with the most recent advances in ICPMS and Laser Ablation.

Dr Ben Wade of Adelaide Microscopy submitted a paper titled

INTRODUCTORY LIGHT MICROSCOPY WORKSHOP

LYN WATERHOUSE

In June, Adelaide Microscopy and Olympus Australia ran an Introductory Light Microscopy Workshop. Staff from the University of Adelaide, the University of South Australia and the IMVS attended. Peter Hunt of Olympus Australia presented the workshop, and gave the participants the invaluable benefit of his very extensive experience in this field.

We would like to thank Wesley Fisk, Manager of the Ray Last Anatomy Laboratory, and staff for the use of a seminar room in the new Bioskills Laboratory as a venue. Also, the use of the Laboratory's teaching microscopes, one for each two participants, added a very useful hands-on dimension to the workshop, allowing them to practice various techniques while watching Peter's demonstration.

Subjects covered included microscopy basics, lens design, illumination and specimen contrast, and fluorescence. We hope that everyone enjoyed the workshop and gained a good basic understanding of this complex technique.



YOUR DATA

We strongly recommend you copy your data as soon as your session at Adelaide Microscopy is completed. This can be done on the Analysis computers located in the computer suit just inside the entrance to AM (Room NB13). You can save this data to a USB memory stick, removable hard disk, CD or DVD.

DATA BACKUP

Data for all instruments is backed up once a week and permanently backed up once a month. It is then removed from all AM computers.

LOST YOUR DATA? NEED TO RETRIEVE OLD DATA?

Please contact ken.neubauer@adelaide.edu.au

If more than a month has elapsed since your data was saved, retrieving old data may take up to 10 working days.

REMOTE ACCESS TO FILES

Please see an AM staff member for information about remote access and FTP access to your files.

RATES

We have just completed an entire review of our charges. From July 1st 2009 the instrument hire rates at Adelaide Microscopy will remain the same for 2009 but due to significant rises in the costs of scientific supplies the charges for processing of samples will increase. This increase applies to processing of samples and additional technical assistance but applies only to new projects.

This is the first rise in charges for processing since 2007 and charges for instrument hire set in 2005 remain unchanged.

The complete list of all the Adelaide Microscopy rates can be found at the following link from our website: <http://www.adelaide.edu.au/microscopy/services/fees/>

We would like to remind users that hours booked on Calcium, the online booking system are charged to the user that made the booking. Please make sure the hours booked are correct, if they the booking times need to be changed after the booking date please notify an AM staff member.

Adelaide Microscopy

CENTRE STAFF

microscopy@adelaide.edu.au

Mr John Terlet, Director
Email: john.terlet@adelaide.edu.au

Ms Ruth Williams, Electron Microscopist
Email: ruthellen.williams@adelaide.edu.au

Dr Ben Wade, Microscopist
Email: benjamin.wade@adelaide.edu.au

Mr Angus Netting, Deputy Director
Email: angus.netting@adelaide.edu.au

Mr Ken Neubauer, Laboratory Assistant
Email: ken.neubauer@adelaide.edu.au

Ms Linda Matto, Administrator/Finance Officer
Email: linda.matto@adelaide.edu.au

Ms Lyn Waterhouse, Senior Microscopist
Email: lyn.waterhouse@adelaide.edu.au

Mr Leonard Green, Dual Beam Engineer
Email: len.green@adelaide.edu.au

Ms Eliza Glastonbury, Administrative Assistant
Email: eliza.glastonbury@adelaide.edu.au

Call in for a discussion with our experienced team regarding any ideas you have about microscopy.