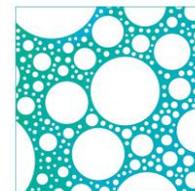


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ACIS Newsletter – Issue 20, February 2020

Welcome

Dear members,

Welcome to our 20th issue of ACIS News! We produce a quarterly newsletter - sent around in February, May, August, and December - to keep ACIS members informed of our initiatives and for members to directly communicate with our Society. We publish job announcements, meetings of interests to our society, career development opportunities and any exciting research that you would like to share with us. To keep you up to date with the on-goings in our colloids society, please send your suggestions and items for the next newsletter to Christine.Browne@monash.edu.

News

Our new board members

We would like to welcome and introduce our new board members Prof. Erica Wanless (University of Newcastle) and Dr Deborah Wakeham (ANSTO).

Prof. Erica Wanless

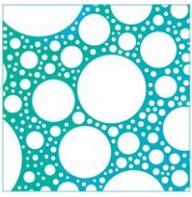


I completed my PhD in surface science at the Australian National University (1995) working with both the surface forces apparatus and the first atomic force microscope in Australia. I then completed a postdoctoral fellowship at the University of Otago using soft contact AFM to image adsorbed surfactant aggregates. I joined the University of Newcastle in December 1996 and am now a Professor of Colloid & Interface Chemistry. My research focuses on both polymers and colloidal particles at interfaces using a variety of physical chemistry surface techniques for characterisation. I have a long history of service to our Colloid community including as a past chair of the RACI Colloids Division. I am currently on the Editorial Board of *Advances in Colloid and Interface Science*, and the Advisory Board of the *Journal of Colloid and Interface Science*. I was elected to the ACIS Board in 2020.

Dr Deborah Wakeham

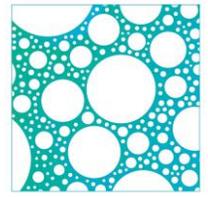
I am an instrument scientist on the Quokka small angle neutron scattering instrument at the Australian Centre for Neutron Scattering (ACNS) at ANSTO. I completed my PhD at the University of Newcastle (2012) examining ionic liquid and surfactant structure at the air-liquid and solid-liquid interface using x-ray and neutron reflectivity, and atomic force microscopy. I then spent 5 ½ years at KTH - Royal Institute of Technology in Stockholm, Sweden collaborating with L’Oreal Paris, developing novel AFM techniques to evaluate adhesive and tribological interactions between irregular particles and surfaces such as hair, skin and pollution, and products to predictably control those interactions. I am also a member of the Australian Cosmetic Society. I am interested in academia, industry and research facilities such as ANSTO working together.





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Have you heard? ACIS membership is changing.....

In line with some changes we made to membership at the recent AGM in January 2020, ACIS is moving to 1st March membership renewal date. See below to see why you should be a member of ACIS and what the change means for current members.

Why be a member of ACIS?

The Australasian Colloid and Interface Society (ACIS) is the premier organisation to promote colloid and interface science in Australasia. Contributing to the strength of ACIS is its community of members. As an identifiable organisation, ACIS can be called upon to provide expert commentary about relevant scientific matters and can act as an advocate.

Engaging as a member of a scientific society has individual benefits too:

- reduced conference registration rates
- eligibility for travel awards and prizes
- networking with international science leaders
- access to member only events and information
- influencing the future direction of colloid and interface science
- opportunity to take leadership roles and expand your professional skills

Enrich your scientific career and become an ACIS member today. Why not encourage a colleague to join too?

How does the change in membership affect me?

If you are a current member - your membership period will be automatically extended and will be due on **1st March 2021**.

If your membership is currently lapsed, we encourage you to re-join ACIS. When you re-join, your renewal date will be **1st March 2021**.

If you are a new member who participated in the 2020 Student Conference (Churchill), your membership renewal date will be **1st March 2021**.

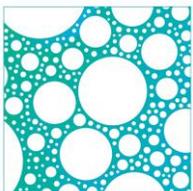
We are also extending the grace period to 12 months before your membership moves to a lapsed status if you have not renewed.

Your opinions and ideas are needed

As the ACIS2021 meeting will be in conjunction with IACIS, the Board is considering supporting a meeting in February 2021 to align with our AGM. The Board would like to know if any members have any ideas for such a meeting running under the auspices of ACIS, keeping in mind that it would need to:

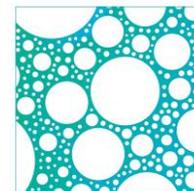
- (i) be of broad scientific applicability for all members
- (ii) be able to be run on a cost neutral basis and
- (iii) be mindful of and compliant with the ACIS Code of Conduct.

Please contact a Board member to discuss by end of June.



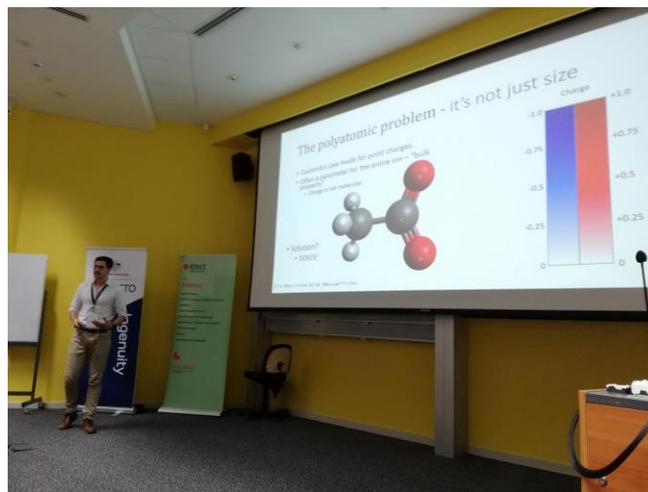
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Australian Colloid and Surface Science Student Conference

The 32nd Australian Colloid and Surface Science Student Conference was held from the 28th til the 31st of January, 2020 at Federation University, Churchill in Gippsland, Victoria. The event was attended by 117 delegates from over 21 domestic and international institutions with a gender ratio of 62:38% male:female. For the first time this conference included an ECR session which highlighted the work of our junior researchers which was very successful.



The conference organisers from RMIT University - Gary Bryant, Tamar Greaves, Charlotte Conn, Russell Crawford, James Chapman, and Aaron Elbourne - would like to thank all who attended and contributed. It was a fantastic event, both for scientific presentations and social events. The high caliber of Australian and international science presented at the conference was inspiring to all that attended.

The conference was headlined by two fantastic plenary speakers, Prof. Michael Dickey (North Carolina State University, USA) and Dr. Carla Meledandri (University of Otago, New Zealand).



Congratulations are extended to our student poster and oral presentation winners:

Student Talk Awards

Healy Hunter Medal - Calum Butler, Monash University

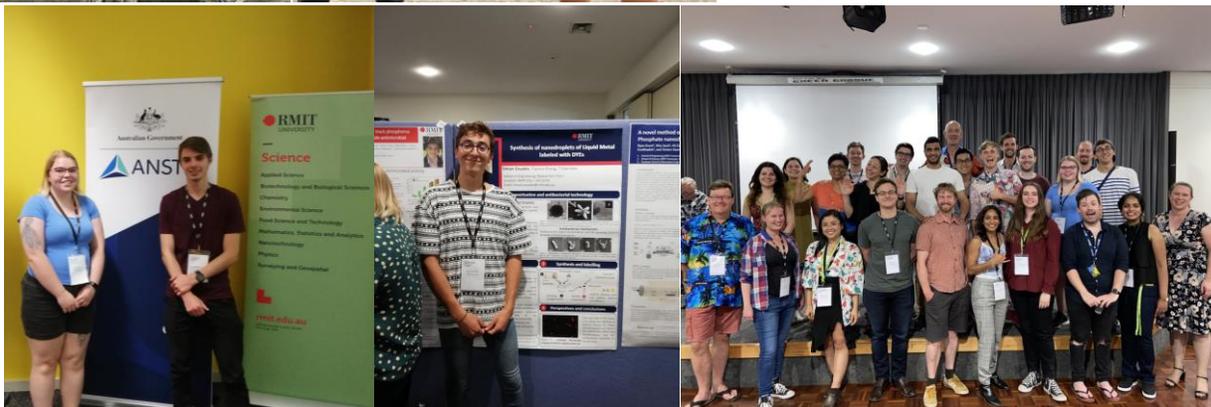
ACIS/ECIS Award - Maryam Hosseini, University of New South Wales

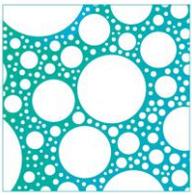
Student Poster Awards

Zoe Shaw - RMIT University

Shahinur Acter - Monash University

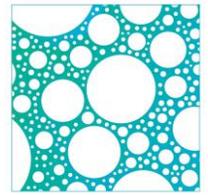
Jonathan Mantzouridis – UNSW





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Questions for the Bushfire Appeal

At the 32nd Australian Colloid and Surface Science Student Conference questions were turned into donations for the Bushfire Appeal. For every legitimate question asked by a student, most staff committed to donating to the bushfire relief. The total donation was just over \$1000.

Congratulations to the students for asking great questions and thanks to all the staff who contributed the cause.

2020 ACIS ECR Lectureship Awardee – Dr Khay Fong

Dr Khay Fong from University of Newcastle was announced as the 2020 ACIS ECR Lecturer. When assembling your seminar programs please consider contacting her for a visit as part of her lecture circuit.

Her webpage and contact details can be found [here](#).



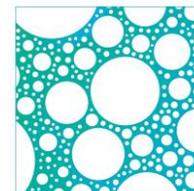
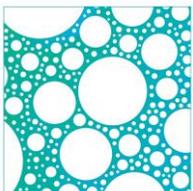
Congratulations for LIEF success

A team including many members of ACIS was delighted to learn they had received funding from the ARC (LIEF LE200100221) to pursue the setup of Australian Rheo-Scattering Facilities at the Lucas Heights and Clayton campuses of ANSTO. The proposal was motivated by the importance of studying complex fluid material structure during flow and deformation. Such capabilities could increase study of numerous industrial materials and processes as well as allowing experimentalists to expose soft and deformable materials to more extreme flow conditions than normally accessed. The team will use the funds to purchase a new shear rheometer for each site, allowing enhancement of existing controlled flow facilities on the beamlines, but will also allow more complex flows to be probed. For example, custom-built extensional rheometers will also be installed at each site, allowing measurements of structure during rapid stretching deformations, as seen in industrial filling and polymer film production, for example. A 3D printer allowing production of custom-drawn microfluidic devices will also be purchased and located at UNSW, enabling the mimicry of hard-to-reproduce process-relevant flows with elements of both shear and extensional characteristics. The addition of these new research tools will enhance the already-excellent ANSTO capability for structural studies, and will enable a broad range of new experiments for Australian and international researchers.

The Team:

A/Prof Patrick Spicer, UNSW
A/Prof Chiara Neto, The University of Sydney
Dr Christopher Garvey, ANSTO
Prof Gregory Warr, The University of Sydney
Dr Anna Sokolova, ANSTO
A/Prof Tamar Greaves, RMIT University

Prof Martina Stenzel, UNSW
Dr Jitendra Mata, ANSTO Partner Investigator
Dr Stuart Prescott, UNSW
Dr Andrew Nelson, ANSTO
Dr Stephen Mudie, ANSTO



Collaborative research abroad at URD ABI- AgroParisTech

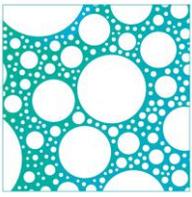
As part of the collaboration between AgroParisTech and BioPRIA, Monash University, I was given the opportunity to do a four-month internship at URD-ABI (Agro Biotechnologies Industrielles) AgroParisTech last year. URD-ABI, located in CEBB (European Center of Biotechnology and Bioeconomy) in Pomacle, France, specialises in the sustainable production of high value-added bio-based chemicals from agro-resources and industrial by-products. This internship allowed me to experience the institute's world-class facilities and learn about the fundamentals of green chemistry, downstream processing, analytical chemistry, and biotechnology. My PhD research project at BioPRIA focuses on exploring novel and green chemical methods to modify nanocellulose with valuable properties. In particular, our collaborative research with AgroParisTech involves exploring novel chemo-enzymatic routes to graft bio-based phenolic compounds on nanocellulose and impart their anti-UV and anti-microbial properties. So far, we have successfully grafted two anti-UV phenolic esters on cellulose nanocrystals using two different chemo-enzymatic routes. We hope to create gels with the properties imparted by these grafted bio-based compounds.



My internship in France has been a memorable and wonderful experience. CEBB is located in an isolated industrial area and therefore, no public transportation is available. Every day I had to ask someone to give me a lift from home to work (and vice versa) and because of that, I've made a lot of friends in the building! Also, since it was my first time in Europe, I maximised my stay and travelled a lot in different countries like France, Spain, Netherlands, Belgium, Luxembourg, UK and Italy. Too bad I didn't learn how to speak French but I did learn how to tell people that I don't speak the language!

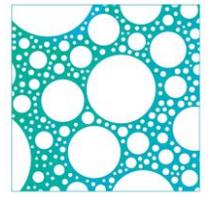
I am forever grateful to my supervisors in Monash University, Professor Gil Garnier and Professor George Simon, and to my supervisors in URD ABI-AgroParistech, Professor Florent Allais and Dr. Louis Mouterde, for giving me this wonderful opportunity. Indeed, this internship allowed me to hone my technical skills and to connect with experts around the world.

David Mendoza, 2nd year PhD Candidate, BioPRIA, Department of Chemical Engineering, Monash University



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Mail in service for Quokka at ANSTO

The Australian Centre for Neutron Scattering at ANSTO now have a mail in service available on the Quokka small angle neutron scattering instrument. This is a trial over the next six months to see if it is successful.

This is suitable for:

- Feasibility testing of a potential SANS experiment before submitting a full proposal
- One off measurements to contribute to a publication
- A small number of measurements to complete a data set

Details for the service are available on our website:

<https://www.ansto.gov.au/research/user-office/instruments/neutron-scattering-instruments/quokka/services>

Mail-in proposals can be submitted at any time throughout the year. If you are interested you can submit a proposal in the ACNS Customer portal (select the round 'Quokka Mail-in Service'):

<https://neutron.ansto.gov.au/Bragg/proposal/index.jsp>

If you have any questions about the mail in service please contact Dr Deborah Wakeham (Quokka Instrument Scientist) at deborah.wakeham@ansto.gov.au

Conferences, Workshops and Opportunities

IACIS 2021

The **call for themes** will be happening shortly. An email will be sent to the members, so have a brainstorm and keep an eye out for the email.

Nominations for IACIS lectures

An email has been sent about the nominations for the IACIS lectures.

Nominations are currently being called for:

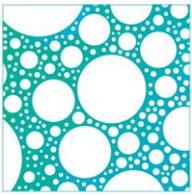
- AE Alexander Lecture
- ACIS Public Lecture

These nominations are due by Friday, March 6th 2020 and are to be sent to acis.enquiries@gmail.com

Suggestions are also being taken for **Plenary Lectures** and are welcome until the plenary lecture slots are finalised. Suggestions can be sent to gregory.warr@sydney.edu.au.

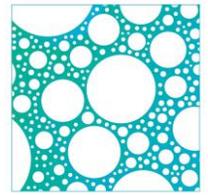
Emerging Research Awards

The other exciting piece of news is that IACIS will be launching its new Emerging Researcher Awards at IACIS2021. These are sponsored by Kao Corp, and we will make three awards from a pool of up to fifteen finalists, who will all make oral presentations at IACIS2021. The IACIS Emerging Researcher Awards are directed at researchers within 8 years of PhD completion (with allowance for career interruptions and non-traditional career paths). Details of the application and selection process will be up soon on the website, iacis2021.org



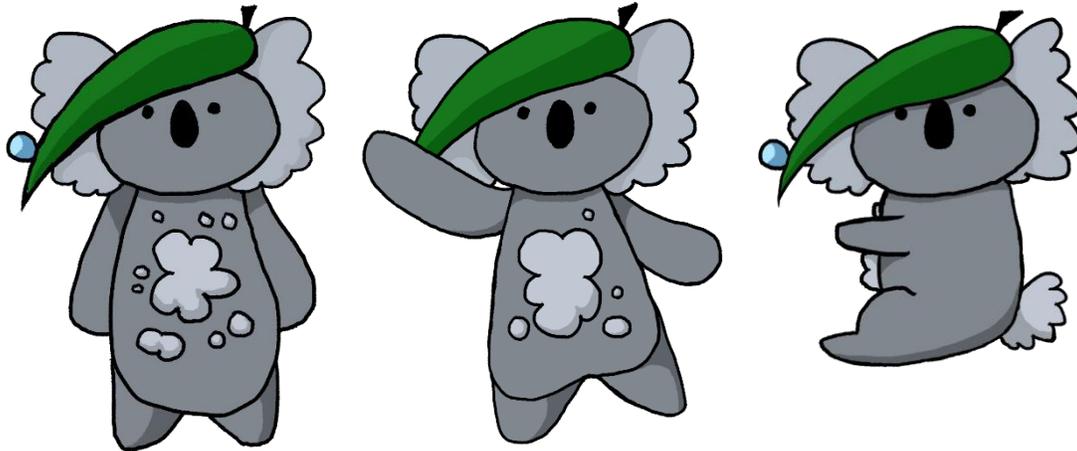
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#koalalloyd

This is Lloyd.



Lloyd is a Koala.

#koala-lloyd (say that quickly 10 times)

Lloyd's gum leaf hat keeps him cool (in every sense of the word) and somehow its superhydrophobic surface manages to keep the droplet of water from rolling off.

Lloyd has explored some places around his home in Brisbane, but he wants to visit other places where interesting colloid and interface science is happening. So, please take Lloyd with you around the world as you research your soft matter, nanomaterials and structured surfaces and take a picture with him and share it with the international colloid community!

Best picture wins a student registration to IACIS2021 (Brisbane, 20-24th June 2021).

To win:

1. You have to be a student
2. You have to be in the picture with Lloyd.
3. You have to post it on a social media platform in a public post with the tags @IACIS2021 | #IACIS2021 | #koalalloyd
4. Things to note: nothing inappropriate will be accepted. If you post, you may be re-posted. If you have other people in your picture, make sure you have their permission.



Download Lloyd from our website <https://iacis2021.org/>



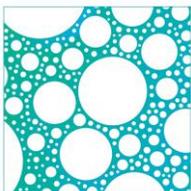
LINKEDIN



FACEBOOK

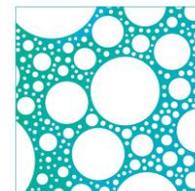


INSTAGRAM



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Proposals at the [Australian Centre for Neutron Scattering](#) and [National Deuteration Facility](#)

Deadline 16 March 2020, for beam time between July and December 2020.

ANSTO is open for proposals for the following neutron-beam instruments and facilities:

[Echidna](#) (high-resolution powder diffractometer)
[Wombat](#) (high-intensity powder diffractometer)
[Koala](#) (Laue diffractometer)
[Kowari](#) (strain scanner)
[Dingo](#) (neutron radiography/tomography/imaging)
[Platypus](#) (reflectometer)
[Spatz](#) (reflectometer)
[Quokka](#) (pinhole small-angle-neutron scattering)
[Bilby](#) (TOF small-angle-neutron scattering)
[Kookaburra](#) (ultra-small-angle neutron scattering)
[Taipan](#) (thermal-neutron 3-axis spectrometer)
[Beryllium-filter option](#) on Taipan
[Sika](#) (cold-neutron 3-axis spectrometer)

[Pelican](#) (cold-neutron time-of-flight spectrometer)
[Emu](#) (high-resolution backscattering spectrometer)

Biological and Chemical Deuteration (at the [National Deuteration Facility](#))

[Sample environment equipment](#) available for use on the neutron-beam instruments.

[Small-angle X-ray scattering](#) and [X-ray reflectometry](#) (in conjunction with [Quokka](#), [Bilby](#), [Platypus](#) or [Spatz](#))

[Physical Properties Measurement System](#) (only in collaborative mode with ANSTO staff)

Other Important Information:

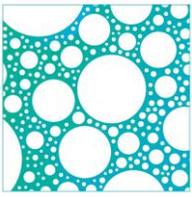
- Due to the replacement of the thermal guide TG123 primary shutter in mid-2020, the Neutron Guide Hall Instruments will be shutdown from 25th April to mid-August 2020 and there will be reduced number of beamtime days available for the user program in the 2020-2 round (see the [Instrument Schedules](#)).
- [Spatz](#) neutron reflectometer is now available for user experiments
- Following an upgrade of its detector, [Quokka](#) is now able to operate at rates exceeding 6 million counts per second compared to 50 thousand previously. Such conditions may be achieved in samples measured at high q (from 0.1 – 0.7 Å⁻¹). We are particularly seeking proposals that would be able to exploit this significant performance gain e.g. very fast (e.g. sub-second) time-resolved studies.
- Mail-in proposals can be submitted continuously for the following:
 - [Powder Diffraction on Echidna](#)
 - [Small-Angle Neutron Scattering on Quokka](#)

Proposals must be submitted using our on-line system, <http://neutron.ansto.gov.au/> **Deadline: 16 March 2020.**

- For single visit proposals for neutron and X-ray instruments, select round “2020-2 Neutron”
- For 3-year program proposals for neutron instruments and/or bio- or chemical deuteration, select “2020-2 Neutron & NDF Program”
- For National Deuteration Facility proposals, select round “2020-2 Deuteration”

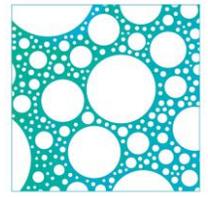
Important notes:

- Applicants should note that the proposal system will not allow a proposal to be submitted if you have outstanding experimental reports.
- Applicants should ensure that any publications resulting from beamtime at ANSTO are entered into the proposal system and linked to the related proposal(s). The peer review panels will take these into consideration when reviewing the proposals.
- Applicants should ideally discuss their proposal with the appropriate Instrument Scientist before submitting.



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Upcoming Small-Angle Scattering Workshop

The small-angle scattering groups at the Australian Centre for Neutron Scattering and the Australian Synchrotron are hosting a workshop aimed at those new to small-angle scattering. The course will cover data collection, data analysis, data modelling, and the application of scattering to a wide range of research fields.

Dates: 20-22 May 2020

Location: ANSTO, Lucas Heights

Please contact Andrew Whitten at andrew.whitten@ansto.gov.au for more information

Biofabrication 2020



Call for Abstracts

<https://www.biofabrication2020.org/call-for-abstracts/>

Location - Wollongong

<https://www.biofabrication2020.org/location/>

<https://www.visitwollongong.com.au/>

Key dates:

Abstract Submissions Close: 24 February, 5pm

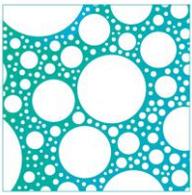
Registration Opens: 3 March

Opportunities for PhD students

There is an opportunity for a PhD student within the Processing Advanced Lignocellulosics (PALS) Hub at Monash University.

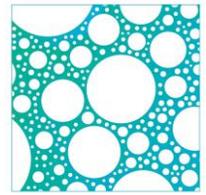
The details can be found at <http://careers.pageuppeople.com/513/cw/en/job/603786/phd-scholarship-opportunity-arc-hub-for-processing-advanced-lignocellulosic-pals>

If you are interested or have any questions, please contact Dr Joanne Tanner via joanne.tanner@monash.edu.



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Measure wettability and adhesion using the new Attension Theta Flex

New Attension Theta Flex, from Biolin Scientific, is an all-in-one fully automated contact angle meter designed to support high end imaging for even the most demanding industrial and research applications. The new modular design and all-inclusive software enable fast and simple operation while sophisticated analysis algorithms allow for reliable and repeatable results. Surface properties and interactions can be studied quickly and easily to understand the performance of a product or process. Measurements include static and dynamic contact angle, 3D surface roughness, surface free energy, surface and interfacial tension and interfacial rheology.

Theta Flex can be combined with a wide range of modules and accessories including the unique 3D Topography module. By measuring both contact angle and surface roughness of the sample in a single measurement, users can quickly distinguish the effect of roughness on contact angle and surface free energy.

The high pressure chamber module is designed for wettability research within enhanced oil recovery and enables measurements at pressures up to 400 bars and temperatures up to 200°C. The Pulsating Drop Module oscillates drop volume for interfacial rheology studies while the Picoliter Dispenser delivers picoliter-sized droplets for small sample areas and inkjet applications. For advancing and receding contact angles, a tilting cradle tilts the entire Theta Flex to provide fully automatic dynamic contact angle measurements commonly used as an indicator of surface homogeneity.



For more details about Attension Theta Flex or for a demonstration, please contact us.

ATA Scientific Pty Ltd

+61 2 9541 3500

enquiries@atascientific.com.au

www.atascientific.com.au



Smart Interfacial Analysis tools for Surfaces and Coatings

Determine contact angle, surface tension, surface free energy, wettability, adhesion, interfacial rheology and more...



Attension Theta Flex



Sessile drop
static contact angle of a liquid



Pendant drop
for surface and interfacial tension



Tilted drop
dynamic contact angle



Reverse pendant drop
for surface and interfacial tension



Advancing drop
for dynamic contact angle



Pulsating drop
for dilational interfacial rheology



Receding drop
for dynamic contact angle



3D Topography
for roughness corrected contact angle



Meniscus
static contact angle with a fiber/rod



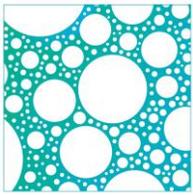
Captive bubble
static contact angle of a gas bubble



Batch sessile drop
for static contact angle in quality control

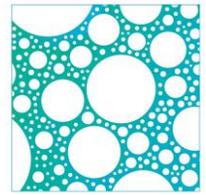
Contact us for a free demonstration today!

ATA Scientific Pty Ltd | enquiries@atascientific.com.au | www.atascientific.com.au | +61 2 9541 3500



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Activities

Join our Awards, Communications, Conferences and Events Committees

ACIS needs its members to be actively engaged. Please let us know if you would like to be involved in the committees that will run the activities of the Society: *Awards; Communications; Conferences and Events*. Or if you would like to propose other activities we should be running. **We especially invite students and early-career researchers to become involved.** Please email your interest to acis@colloid-oz.org.au.

Visiting Scientist Register

Are you planning to host a visit by an outstanding scientist in the colloid and interface field? Why not let ACIS members know about the visit? We aim to keep track of visiting scientists, to facilitate their introduction to the Australasian scientific community. Please email details of the visit to acis@colloid-oz.org.au.

ACIS Membership

Please encourage your colleagues, students and industrial partners working in the field of colloids and interface to join us. General membership is \$100 per annum. The membership year is from 1st March each year. Memberships paid after this date are valid until 28th February of the following year. More information is available on our website <http://colloid-oz.org.au/>.



Use our LinkedIn Group to tell people your news

ACIS is now present on LinkedIn. Please join our LinkedIn group and post discussion items on job ads, conference calls, and interesting facts about the wonderful world of colloid and surface science.



The Newsletter team is:

Boon Teo – boonmian.teo@monash.edu

Christine Browne – christine.browne@monash.edu

