



FLEET News

Are you presenting 2D materials research at ICON2DMAT in December? The deadline for abstract submission is 3 August. Details below.

Read on for events and research news from around the Centre, including liquid-metal manipulation at Wollongong, and exciton puzzles explained at UNSW.

We also include the first of a series of FLEET member profiles: meet Elizabeth Marcellina.

Regards,

Michael Fuhrer

Director

ARC Centre of Excellence in Future Low-Energy Electronics Technologies

Catch up on previous editions of FLEET News

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- Present at ICON-2Dmat materials conference
- Research: Exciton puzzle unlocked (UNSW)
- Research: Science fiction becomes science fact (UOW)
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Present at international 2D materials conference

Submit your abstract by 3 August to present your work at ICON-2DMat. See confirmed speakers and program overview [here](#).

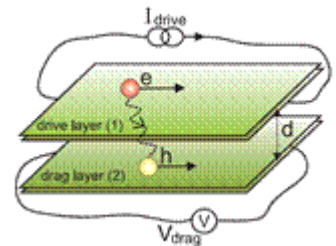
The conference will cover graphene, transition metal dichalcogenides, black phosphorus, topological insulators, perovskites, MX3 and other new forms of 2D materials, as well as developing applications in electronics, photonics, optoelectronics, catalysis, bio-medical, environmental and energy.

- FLEET.org.au/ICON2Dmat
- Melbourne, Victoria
- 10-13 December 2018



Exciton puzzle unlocked

A collaboration involving UNSW CI Alex Hamilton and FLEET partner David Neilson explains previous mystifying experimental results, where coupled charged particles sometimes moved in exactly the opposite direction to that predicted: a step in understanding exciton transport in ultra-low energy exciton-superfluid transistors. [Read more](#).



Science fiction becomes science fact

"I don't want to create a Terminator robot, don't worry," says FLEET CI Xiaolin Wang. Xiaolin and his University of Wollongong research team created a "heartbeat" effect in liquid gallium, causing the metal to pulse rhythmically in a manner similar to a beating heart. [Read more.](#)



Member profile: meet Dr Elizabeth Marcellina

A love of maths brought Elizabeth Marcellina to the study of quantum and condensed-matter physics, where her recently completed PhD research studied possible routes to faster, more efficient electronics, by harnessing particle spin. We asked Elizabeth a few questions about her research and her PhD, [Read more online.](#)

News from around the Centre

Launching future electronics A crowd of around 150 enjoyed FLEET's official opening at Monash University last month, in an event that included talks on ICT energy use, FLEET science, and making an impact beyond the science. [Read talks online.](#)



<<'Flux capacitor' FLEET/EQUS collaboration develops 'flux capacitor' device to break time-reversal symmetry, which would be important in ultra-low energy electronics where the 'arrow of time' would not necessarily behave as desired. [Read more.](#)

Fresh minds bring FLEET science to the classroom Hands-on learning methods for schools developed in collaboration with Monash University Science, demonstrating FLEET-relevant science themes in the classroom. [Read more.](#)



<<Trapping excitons at ANU Exciton-polaritons trapped in high-quality microcavities enabling strong light-matter coupling regime. [Read more.](#)

More news:

- vdW material properties improved at reduced thickness
- Tin-oxide growth and better 2D materials deposition
- Quantum-gas microscope bridges micro- and macro worlds
- Interactions within quantum batteries key to their charge advantage
- Older news

Events in August

Monday 1 August FLEET AI Shaffique Adam will discuss strongly-interacting Dirac fermions in graphene and other 2D materials at Monash. All are welcome.

6–9 August [Island Physics](#) will see a number of FLEET members and affiliates presenting quantum technologies

8 August FLEET collaborator [Atsushi Fujimori](#) will discuss soft x-rays spectroscopic methods, including ARPES, at Monash. All are welcome.

10 August FLEET sponsoring the AIP's student careers night at the Rendezvous Hotel, Victoria.

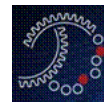
11–19 August FLEET is sponsoring Science Nation's Great Debate during Science Week: Melbourne 11 August, Brisbane 16 August, Adelaide 18 August, Sydney 19 August (including FLEET-UNSW's Samuel Bladwell!).

13–16 August Vacuum and Surface Science Conference, Sydney (FLEET sponsoring)

21 August FLEET is sponsoring Girls in Physics breakfast at Monash University

Prizes and opportunities


Australian Nanotechnology Network (ANN) funding for members to travel to Australian National Fabrication Facility nodes. Open for postgraduate nanotech students and ECRs currently studying/working in Australia who are members of ANN



MC^N The Melbourne Centre of Nanofabrication and ANFF Victoria are seeking Masters or PhD interns to be partnered with industry clients to work on 2-6 month internship projects.

Australian Institute of Physics Women in physics lecturer applications are due **1 August**, seeking a woman working in Australia who has made a significant contribution in physics research to speak in each state and the ACT in 2019.



 **MAGIC2018** provides mentoring and skills development for early-career women/diverse gender researchers in maths and physical science, with a five-day workshop at ANU in October-November. Applications close 6 August.

Most people who nominate for a prize say they did it after encouragement from peers and supervisors. Consider whether your own work could be nominated too!

Building resources for women in science

We need more women at the public face of science. **500 Women Scientists** is a database of female scientists accessible for media, conferences, policy makers etc. In Victoria you'll find a similar resource at [Here she is](#). Let us know any others.

Help spread the news

If you're on [Facebook](#), [Twitter](#) or [LinkedIn](#), we would love it if you followed our accounts and shared our posts, particularly with other colleagues in the field.

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- [See past editions](#)

Participating organisations

FLEET's participating nodes are: the Australian National University, Monash University, RMIT University, Swinburne University of Technology, the University of New South Wales, the University of Queensland and the University of Wollongong.



FLEET is: The Australian Research Council Centre of Excellence in Future Low-Energy Electronics Technologies.