

FLEET News August 2018

Congratulations are due to FLEET CI Kourosh Kalantar-Zadeh who was named an Australian Research Council Laureate Fellow this month, and to Centre Advisory Committee member Cathy Foley who will become the new CSIRO Chief Scientist next month. See more on these accomplishments below.

Read on for research results, including DNA-inspired materials at Monash, exciton-polariton condensates at ANU and hole spin at UNSW. Also another member profile: meet FLEET alum Harley Scammell (whose outstanding PhD was recognised recently by UNSW).



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 international 2D materials conference

Registration is open for the 4th International Conference on Two-Dimensional Materials and Technologies! Visit the website for information on how to register, accommodation options and prices. There are limited number of discounted tickets for ANN members from interstate so be quick to secure them. We are still accepting abstracts for poster presentations.



- FLEET.org.au/ICON2Dmat
- Melbourne, Victoria
- 10-13 December 2018
- Early bird registration closes Friday 5 October

Congratulations Prof Kourosh Kalantar-Zadeh

Congratulations to FLEET's Prof Kourosh Kalantar-Zadeh — named an Australian Research Council Laureate Fellow this month. This month Kourosh has also started in his new position as Professor in UNSW's Department of Chemistry, Engineering. He remains a Honorary Professor at RMIT.

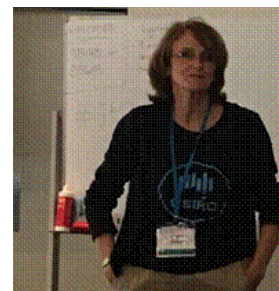
Read about Kourosh's significant influences in 2D compounds, liquid metals, and electronic devices [online](#).



Congratulations Dr Cathy Foley

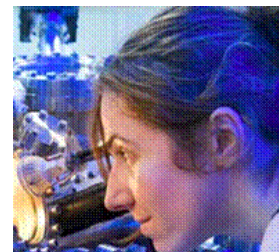
Congratulations to FLEET advisor Dr Cathy Foley (pictured at the recent Island Physics workshop), who will take over the reins as CSIRO Chief Scientist in September.

[Read more online.](#)



Atomic-scale material engineering inspired by nature (in Nature)

New materials inspired by nature could be key to future electronics. Inspired by self-assembling bio-systems such as DNA, an international group of researchers including FLEET physicists has created a new, carbon-based, self-assembled nanomaterial, which could be key to new photovoltaic and catalysis technologies. [Read more online.](#)



Member profile: meet Harley Scammell

FLEET's Harley Scammell's outstanding PhD has been recognised by UNSW, and will be published by Springer in hardcover and ebook. [Read more about Harley's passion for discovering new quantum states online.](#)



Twisting exciton-polariton condensates

Outstanding problem in exciton-polariton physics resolved using exceptional points at ANU, opening exciting future research directions in the field.

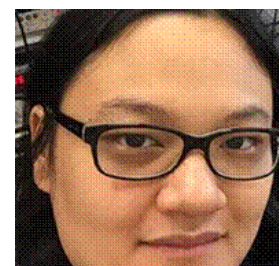
[Read more online.](#)



Adding new spin to the hole story

The control of hole spin could be key to future quantum spin-based devices, as well as topological materials studied at FLEET. In a new study FLEET researchers at UNSW have demonstrated an entirely new mechanism for electrically controlling holes' spin in a quantum well.

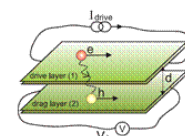
[Read more online.](#)



We profiled Elizabeth Marcellina, whose love of maths brought her to the study of quantum and condensed-matter physics, [last month's newsletter.](#)

News from around the Centre

Exciton puzzle unlocked at UNSW explaining previous mystifying experimental results in coupled charged particles. [Read more.](#)



Science fiction becomes science fact at University of Wollongong creating a "heartbeat" effect in liquid gallium, causing the metal to pulse rhythmically.

[Read more.](#)

More news:

- Flux capacitor' breaks time-reversal symmetry
- Fresh minds bring FLEET science to the classroom
- Trapping excitons at ANU
- More news

Events coming up in September

Today Tying Electrons into Knots: The New Science of Topological Materials Michael Fuhrer, Monash University at 6.30 tonight

1 September The FLEET UNSW crew will be representing at UNSW open day, including a showcase of the new UNSW, superconducting Mobius track

3–5 September Excitonic insulator: New perspectives in long-range interacting systems, Lausanne, Switzerland

18 September Graphene as a playground for molecules: from physisorption to catalysis research seminar at Monash – see the link to watch live on Zoom.

4-5 October 26th International Conference on Advanced Nanotechnology, Moscow

8 October Graphene 2018 conference, Melbourne

Prizes and opportunities

The Graphene+ Startup competition rewards business ideas and innovations with cash prizes.



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 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



Superstars of STEM applications are open now. Women with a passion for science outreach are encouraged to apply for an opportunity to become a visible, public role model and help change the public stereotype of scientists. Applications close 23 September.



Science meets Business in Brisbane 11 Oct will provide a chance to mix with science and industry leaders.

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

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.