



FLEET

ARC CENTRE OF EXCELLENCE IN
FUTURE LOW-ENERGY
ELECTRONICS TECHNOLOGIES

FLEET News: August 2019

Congratulations to our new FLEET Associate Investigators Amgad Rezk of RMIT and Priyank Kumar of UNSW! You can view their profiles at the FLEET Team page.

Read on for news about upcoming workshops, a report from our Lindau Nobel meeting attendees, FLEET's efforts to communicate complex quantum science at year 10, recognition for Centre members, as well as recent research results and other news from around FLEET.

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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Lindau 2019 recap

Three FLEET ECRs were fortunate to attend the 69th Nobel laureate meeting in Lindau, Germany, forming an impressive 30% of Australia's ten-person delegation elected and led by the Australian Academy of Science.

Read their report online.

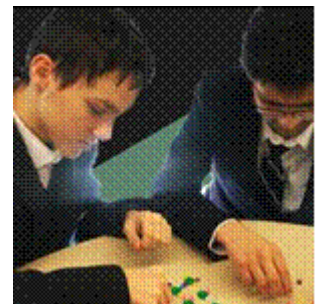


Introducing FLEET science at secondary level

FLEET is helping run a Year 10 'Future electronics' course in partnership with John Monash Science School, Victoria.

The course covers the history of semiconductors and computing, introducing students to Moore's Law, as well as harder topics: quantum science, superfluids and topological materials. Many FLEET members are pitching in with lessons.

Read more online.



ECR workshop-review

FLEET's ECR workshop saw postdocs/PhDs from across FLEET converge at UNSW for a two-day workshop. We discussed results, research across the themes, got career advice and formed collaborations. Also, ECRs learnt how to keep their supervisor happy, courtesy of FLEET CI Nagajaran Valanoor. Warning: his methods may differ from other CIs. So blame him if your ECR now wants to go surfing all the time.

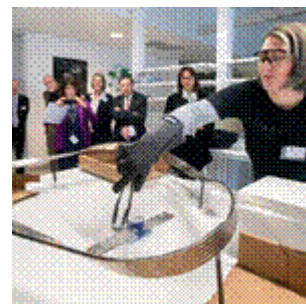
ECRs learnt the importance of being flexible in work, that networking and connections are great for job opportunities. For academic success, they discovered the role that luck plays and how slumps in research are common. The participants were enthusiastic, and the feedback has been positive. Overall, this first workshop was a great success with open conversation, sharing of ideas, laughter and sense of being part of a big team. We are looking forward to the next one.

Congratulations to Dianne

Congratulations to FLEET's outreach officer Dr Dianne Ruka, winning the Award for Exceptional Service to the Faculty of Science at Monash University.

Dianne leads the education and training missions for FLEET across all seven collaborating universities, supporting staff and students in their science-outreach.

[Read more about the award and Dianne's work online.](#)



Heart Foundation Fellow Yuerui Lu

FLEET AI Yuerui (Larry) Lu (ANU) has been named a Heart Foundation Future Leader Fellow, recognising the innovation and value of his studies of next-generation high-throughput 3D microscopy for cardiovascular imaging.

[Read more about the award and Larry's work online.](#)

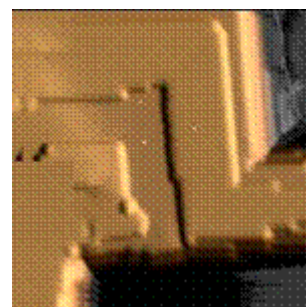


New phase: first observation of excitonic insulator

A UOW/Monash collaboration has found first evidence of a new phase of matter, predicted in the 1960s: the excitonic insulator, with its unique signatures observed in antimony Sb(110) nanoflakes.

The study provides a novel strategy to search for more excitonic insulators, potentially capable of carrying exciton superfluids.

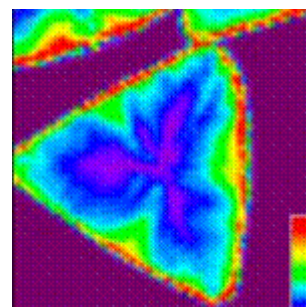
[Read more online.](#)



Lights out! Keep your S-TMDs out of the light

A new Monash study led by FLEET affiliate Jimmy Kotsakidis with Michael Fuhrer demonstrates that that widely-studied monolayer TMDs must be kept out of light to maintain electronic, and optical properties. This was not known previously, despite these materials being widely studied since the 1950s.

[Read more about the study online.](#)



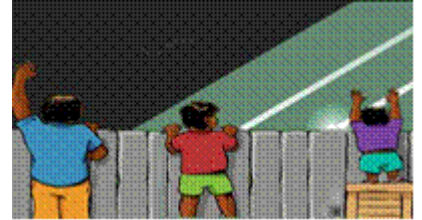
FLEET Xmas in July

FLEET members from across the Centre's three Melbourne nodes got together at Monash last month to celebrate 'Christmas in July', complete with Xmas hats, party pies, and trivia.



New Australian equity resource

Australian female physicists are encouraged to sign up to the Science Academy's new online database, which is a resourced aimed at addressing the relatively low numbers of women scientists represented in media and at conferences.



FLEET Members' Corner

The members in FLEET are keeping themselves busy. This month the operations team have tested their resilience and fundraising skills. Dianne Ruka, Tich-Lam Nguyen and Charlotte Hurry walked 35 km on the weekend and raised \$2000 for mitochondrial disease. It wasn't easy, but they completed the course around Melbourne in 7 hours, Dianne finished in 6 hours and then made a loop to find her colleagues, giving her a total of 41 km. What an amazing effort!

Earlier in the month Dianne also did the walk for Parkinson's disease, raising \$300 for that charity. Good work Dianne! If you would like to donate to either charity, please contact Dianne for details.



Spontaneous coherence in excitonic systems: ICSCSE Jan 2020

[meet the speakers](#) | [register!](#)

The 10th International Conference on Spontaneous Coherence in Excitonic Systems (ICSCSE10) will be held in Melbourne next January.

AIP Summer Meeting: December 2019

FLEET is pleased to sponsor the Australian Institute of Physics Summer meeting (RMIT University Melbourne) showcasing trends and developments in Australian physics research. Around 800 delegates, including professional scientists, academics, post-doctoral researchers and PhD students are expected to attend.

Get your abstracts in before 18 September 2019. [See more information online.](#)

Spin, topology & electron correlation workshop: November 2019

Registration is open for the Gordon Godfrey workshop at UNSW in November, to discuss spin/pseudospin and correlations in low dimensional systems and nanostructures, topological physics and materials, phase transitions, superconductivity and Bose condensation, and correlations in metal oxides.

UNSW | 25–29 November | [See more information online](#)



Events coming up

- **Advanced XRD techniques Tutorial** UNSW 12 September
- **Monash Energy Conference** 18 & 19 September
- **20th International Union of Materials Research Societies Conference** 22 - 26 September
- **World Congress on Lasers, Optics and Photonics** 23 - 25 September

SAVE THE DATE

- **Gordon Godfrey Workshop** 25-29 November, UNSW
- **AIP Summer Meeting** 3-6 December, RMIT
- **FLEET Annual Workshop** 8-11 December, Lorne
- **ICSCE10** 28-31 January 2020, Melbourne

Participating organisations

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

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.

