

PQS2D

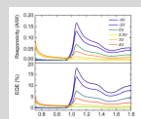
Programmable Quantum Simulators
based on 2D Materials



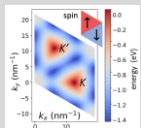
NEWSLETTER

Issue 2 | Summer 2024

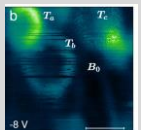
RESEARCH ADVANCES



- **Tsen group**, [Gate-Tunable Multi-Band van der Waals Photodetector and Polarization Sensor](#), ACS Nano, 18, 17, 11193–11199 (2024)



- **Collaboration: Hawrylak, Gaudreau and Luican-Mayer groups** [Interacting holes in a gated WSe2 quantum channel: valley correlations and zigzag Wigner crystal](#) Preprint: arXiv:2406.08655v1

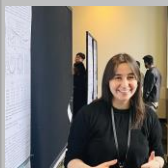


- **Grutter Lab:** [Spatially resolved random telegraph fluctuations of a single trap at the Si/SiO2 interface](#) Preprint: arXiv:2403.07251v2

SEMINARS



May 13th, 2024: *PhD Alina Wania Rodrigues (uOttawa, Prof. Pawel Hawrylak group)* talked about a Hofstadter's butterfly spectrum for the magic angle twisted bilayer graphene (MATBG) obtained using an ab initio based multi-million atom tight-binding model.



June 27th, 2024: *PDF Melis Ayse Aygar (McGill University)* showed how they developed an integrated flip-chip method to dope graphene by alkali vapor in the diffusive regime, suitable for charge transport measurements at ultrahigh charge carrier density.

For more details, go to our [PQS2D website](#).

ENGAGEMENT

- May 3rd, 2024: , [Special Elasto-Q-Mat Colloquium](#) (Germany - Hybrid). *Prof. Adam Wei Tsen (uWaterloo)* discussed the *Tunneling Probe of 2D and Moire Magnetism*.
- May 26th-31th, 2024: [2024 Cap Congress](#), London (Canada). *Prof. Ziliang Ye (UBC)* reviewed the *Sliding ferroelectricity in layered semiconductors: from slip avalanche to non-volatile optical switch*.
- June 17th-19th, 2024: [TechConnect World Innovation](#), Washington D.C. *Prof. Adina Luican-Mayer (uOttawa)* talked about the *Scanning probe microscopy as a tool to uncover new phenomena in twisted 2D materials*.

KEY DATES

July 28th-August 2nd, 2024: *Ottawa – Shaw Centre, [International Conference on the Physics of Semiconductors](#).*

November 4th-6th, 2024: *Vancouver, [International Conference on Graphene and 2D Materials](#).*

November 14th-16th, 2024: *Rome (Italy), [World Summit and Expo on 2D Materials and Graphene](#).*

SHORT STORY HIGHLIGHT

Prof. Peter Grutter (McGill University) organized and discussed advancements in frequency-modulated atomic force microscopy for quantum science at [SPMConnect](#), on June 17th, 2024, Washington D.C.

