



# PQS2D

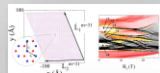
Programmable Quantum Simulators  
based on 2D Materials



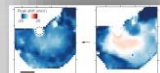
# NEWSLETTER

Issue 1 | Spring 2024

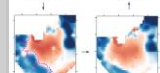
## RESEARCH ADVANCES



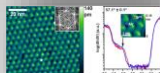
- Dr. Hawrylak group, [Atomistic theory of the moiré Hofstadter butterfly in magic-angle graphene](#) PRB 109, 075166 (2024)



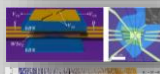
- Dr. Ye group, [Non-volatile electrical polarization switching via domain wall release in 3R-MoS2 bilayer](#), Nature Com. 15, 1389 (2024)



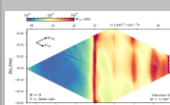
- Dr. Luican-Mayer group, [Influence of Atomic Relaxations and the Moiré Flat Band Wave Functions in Antiparallel Twisted Bilayer WS2](#), Nano Lett. 23, 24, 11778–11784 (2023)



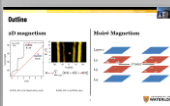
- Dr. Gaudreau group, [Anomalous conductance quantization of a one-dimensional channel in monolayer WSe2](#), npj 2D Materials and Applications, 7, 50 (2023)



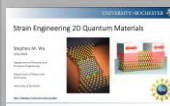
## SEMINARS



**January 25<sup>th</sup>, 2024:** *Prof. Sergio de la Barrera (uToronto)* discussed how strategic combinations of layered materials lead to superconductivity, magnetism and topology, addressing quantum materials questions.



**February 29<sup>th</sup>, 2024:** *Dr. Bowen Yang (uWaterloo, PDF Tsen group)* presented recent results on 2D magnetism such as transport in CrI3 in the atomically thin limit and with in twisted layers devices.



**March 21<sup>st</sup>, 2024:** *Prof. Stephen M. Wu (University of Rochester)* showed how strain engineering can be used in the world of 2D materials to engineer quantum properties.

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

## ENGAGEMENT

**February 21<sup>st</sup>, 2024:** [Quantum Days](#), Calgary. *Prof. Adina Luican-Mayer (uOttawa) and Prof. Ziliang Ye (UBC)* were panellists on the Quantum Materials Panel. Representing PQS2D on both training and research, Prof. Ye organized the *Poster Session* and Prof. Luican-Mayer discussed *Quantum functionality in 2D materials* as a keynote speaker.

**March 3<sup>rd</sup>-8<sup>th</sup>, 2024:** [American Physical Society's March Meeting 2024](#), Minneapolis. Profs. *Pawel Hawrylak (uOttawa), Adina Luican-Mayer (uOttawa) and Louis Gaudreau (uOttawa)* and/or their trainees presented their latest PQS2D results.

## KEY DATES

**May 21<sup>st</sup>-23<sup>rd</sup>, 2024:** **uOttawa, 2<sup>nd</sup>** Canada-France Quantum Alliance (CAFQA) workshop.

**July 27<sup>th</sup>, 2024:** **uOttawa**, PQS2D Annual Retreat. Don't miss our meeting, joint with [MaQTech](#), including talk sessions, a panel, a wine and cheese reception and a Co-Pis' dinner.

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

