PQS2D

Programmable Quantum Simulators based on 2D Materials

NEWSLETTER

Issue 6 | Summer 2025

EVENTS

PQS2D Annual Retreat – June 18th - 20th , 2025 – Montebello (QC)

The annual event combined the PQS2D Annual Retreat with the University Research Chair in Quantum Theory of Materials, Nanostructures, and Devices (QTMND) program at the University of Ottawa, led by Prof. Pawel Hawrylak.

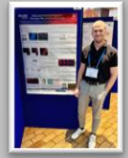
Research trainees greatly valued the insightful presentations delivered by the Co-PIs and distinguished international guests. They also had the opportunity to network and present their ongoing work during dynamic and interactive poster sessions.





2D Transition Metal Dichalcogenides 2025 – July 20th – 24th , 2025 – Cambridge (UK)

Prof. Adina Luican-Mayer (uOttawa) and **Prof. Ziliang Ye (UBC)** were invited speakers at the prestigious 2D Transition Metal Dichalcogenides Conference in Cambridge. They discussed *Scanning Probe Microscopy of Twisted 2D TMDs and Non-volatile Tuning of 2D Excitons in Rhombohedral MoS_2 Through Sliding Ferroelectricity*. **Dr. Justin Boddison-Chouinard (uOttawa)** presented his latest work on 2D quantum devices.

RESEARCH HIGHLIGHT

Direct observation of distinct bulk and edge nonequilibrium spin accumulation in ultrathin MoTe2, Nature Communications volume 16, Article number: 6132 (2025), a contribution by Prof. Adam W. Tsen and research group, uWaterloo

Topological bands and correlated states in helical trilayer graphene, Nature Physics volume 21, pages239–244 (2025), a contribution by Prof. Sergio de la Barrera, uToronto

Probing the zero energy shell wave functions of triangular graphene quantum dots with broken sublattice symmetry using a localized impurity, Solid State Communications Volume 401, 1 July 2025, 115899, a contribution by Prof. Pawel Hawrylak and research group, uOttawa

SEMINARS

PQS2D and Science Colloquium Seminar – September 18th , 2025 – uOttawa

In his engaging presentation, **Dr. Vampa (NRC, JASLab & JCEP)** explored the interaction of intense laser fields with quantum light and quantum materials.