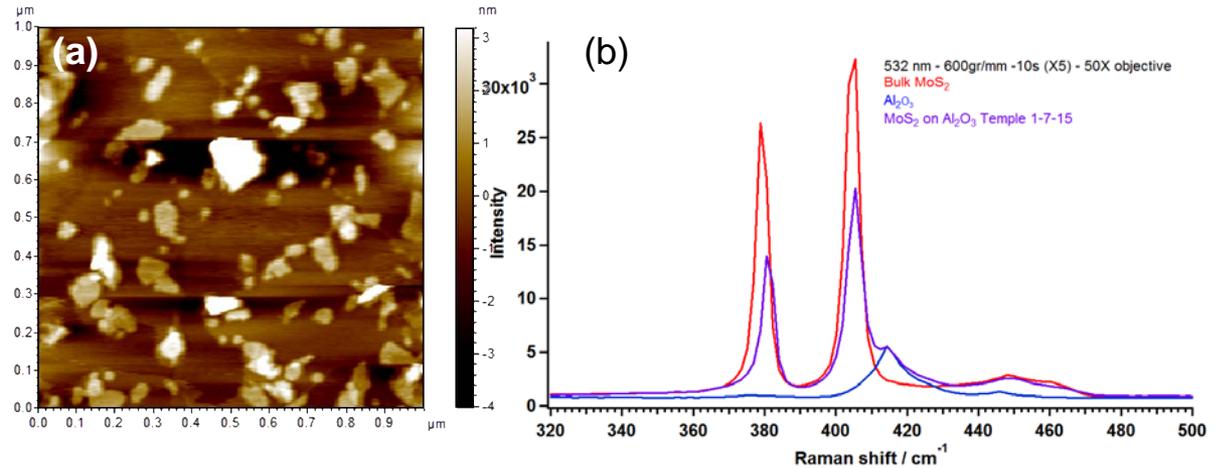


In-situ characterization of 2D materials and chemical reactivity



Eric Borguet



Keys features

- STM (in ambient and in-situ/EC)
- AFM
- Raman spectroscopy

(a) STM topography of MnO₂ nanosheets on HOPG
(b) Raman spectra of CVD MoS₂ on Al₂O₃

Scope of effort

- Raman spectroscopy of supported TDMC materials
- AFM/STM imaging under electrochemical (EC) potential control
- Ultrafast transient phonon - exciton coupling dynamics

Challenges to address

- In-situ 2D materials characterization
- Investigate catalytic activity with EC-STM
- Transfer energy between molecules and TMDC monolayer excitons