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Growth and Characterization of 2D Transition Metal Dichalcogenides

Keys features

- Chemical Vapor Deposition
- Atomic Force Microscopy
- Raman spectroscopy

Scope of effort

- Wafer-scale growth of single- & few-layer MX_2 films ($\text{M}=\text{Mo}, \text{W}$; $\text{X}=\text{S}, \text{Se}, \text{Te}$)
- Characterize number of layers in the MoS_2 films by Raman spectroscopy.
- Collaborate with other PIs in Thrust 4 to manipulate and reduce defects in the films.

Challenges to address

- Extend the growth of single- & few-layer MoS_2 films to other 2D transition metal dichalcogenides of interest
- Growth of 2D transition metal dichalcogenide films and heterostructures suggested by the theoretical efforts in the EFRC/CCDM.

