

Abstract Submitted
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Spiral Growth of Few-Layer MoS₂ by Chemical Vapor Deposition¹ XI DONG, DUSHYANT TOMER, LIAN LI, Univ of Wisconsin, Milwaukee — Monolayer and few-layer transition metal dichalcogenide MoS₂ are grown by chemical vapor deposition on SiO₂/Si substrates using MoO₃ and S powder as precursors. Before growth, the substrates are pretreated with perylene-3, 4, 9, 10-tetracarboxylic acid tetrapotassium salt to promote nucleation. Monolayer MoS₂ islands are triangularly shaped with sizes ranging from a few to tens of micrometers, which also exhibits the characteristic Raman bands at 403.36 and 385.05 cm⁻¹ corresponding to the A_{1g} and E_{2g} modes, respectively. Atomic force microscopy imaging further confirms the monolayer thickness to be 0.8 nm. For few-layer MoS₂ films, triangular spirals are observed with both left- and right-handed chirality. Raman spectra showed interesting features of these growth spirals, the details of which will be presented at the meeting.

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Xi Dong
Univ of Wisconsin, Milwaukee

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