

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Multi-terminal Monolayer WSe<sub>2</sub> devices** WENJIN ZHAO, TAUNO PALOMAKI, JOE FINNEY, ZAIYAO FEI, PAUL NGUYEN, Univ of Washington, FRANK MCKAY, Retired, DAVID COBDEN, Univ of Washington — Two-dimensional transition-metal dichalcogenide (TMD) semiconductors are promising materials for next-generation electronic and optoelectronic devices. WSe<sub>2</sub> in particular has shown excellent optical properties, but it has proven difficult to make reliable electrical contacts to this material. We use a new chemical vapor deposition technique to grow monolayer single crystal WSe<sub>2</sub> reliably on a large scale with edges up to 15 microns long. We then fabricate these crystals into multi-terminal devices encapsulated in boron nitride using dry transfer techniques. We achieve sufficiently good electrical contacts reproducibly to allow comprehensive study of the intrinsic optical and electrical properties of gated WSe<sub>2</sub> monolayers as a function of temperature and magnetic field.

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Date submitted: 06 Nov 2015

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