Abstract Submitted for the MAR12 Meeting of The American Physical Society

Electronic and Transport Properties of Few-Layer MoS_2 Crystals DORON NAVEH, Electrical & Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States, ASHWIN RAMASUBRAMANIAM, Mechanical & Industrial Engineering, University of Massachusetts Amherst, Amherst, MA, United States, ELIAS TOWE, Electrical & Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States — We investigate the electronic properties of few-layer MoS₂ flakes prepared by mechanical exfoliation. Field-effect transistors from MoS₂ flakes were fabricated and their properties were systematically characterized as a function of sample thickness. Scanning probe measurements are employed to characterize the interface between MoS_2 flakes and metal contacts. Transport properties of these devices and their correlation to electronic structure calculations are discussed.

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Date submitted: 17 Nov 2011

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