

Abstract Submitted  
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**Instrumentation of a low-cost Raman spectroscopy module to study MoS<sub>2</sub> monolayers**<sup>1</sup> GAVIN TREVORROW, LYALL ALWAFI, BIPLOB BARMAN, University of Michigan-Flint — Raman scattering provides important information, via vibrational changes, about a molecule's response to electromagnetic radiation. In this work, we discuss the basic operating principle and instrumentation of a low-cost Raman spectroscopy module which uses a 532 nm CW laser as the excitation source. We demonstrate the capabilities of our set-up along with theoretical underpinnings and as an example, bearing testimony to our successful instrumentation, we compare our Raman spectrum (from toluene) to that of previously published results. We follow it up with modifying the module to perform micro-Raman measurements on mechanically exfoliated monolayer MoS<sub>2</sub> flakes including imaging capabilities (using a CCD) for samples as small as 6-10 microns.

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