Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Description of Custom System for Raman Spectroscopy of Thin films

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— Many commercial systems exist for off-the-shelf Raman analysis, but these systems are often cost prohibitive or have included features which may be unnecessary for the particular focus of a research group. Our lab studies properties of thin, uniform films, for which we do not need imaging capabilities or different options for imaging objectives. Thin film Raman analysis also requires tight focus and increased signal collection since Raman scattering has a low cross section and scatters in an incoherent manner. We designed, sourced, and built a very flexible, custom Raman spectroscopy apparatus to suit our needs at a minimum of cost. Our system has been used to characterize thin films created in our lab as well as planned applications for other projects.

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Date submitted: 11 Nov 2016

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