

MAR17-2016-006425

Abstract for an Invited Paper
for the MAR17 Meeting of
the American Physical Society

An integrated and multi-purpose microscope for the characterization of atomically thin optoelectronic devices¹
SAVERIO RUSSO, University of Exeter

Optoelectronic devices based on graphene and other two-dimensional (2D) materials, such as transition metal dichalcogenides (TMDs) are the focus of wide research interest. They can be the key to improving bandwidths in telecommunications, capacity in data storage, new features in consumer electronics, safety devices and medical equipment. The characterization these emerging atomically thin materials and devices strongly relies on a set of measurements involving both optical and electronic instrumentation ranging from scanning photocurrent mapping to Raman and photoluminescence (PL) spectroscopy. In this talk I will present an integrated, multi-purpose instrument dedicated to the optical and electrical characterization of devices based on 2D materials which is able to perform low frequency electrical measurements, scanning photocurrent mapping, Raman, absorption and PL spectroscopy in one single set-up with full control over the polarization and wavelength of light.

In collaboration with: Adolfo De Sanctis, Gareth Jones, Nicola Townsend, Monica Craciun, University of Exeter

¹The Leverhulme Thrust, EU, EPSRC