Scanning Confocal Raman microscopy at low temperature and in high magnetic fields

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The advent of Graphene has generated the need for a whole new set of characterization tools in order to tailor new electronic devices based on the outstanding material properties of this unique material. The attoRAMAN combines a high resolution, low temperature confocal microscope with ultra sensitive Raman optics. This innovative product enables state of the art confocal Raman measurements at cryogenic environments combined with magnetic fields of up to 15 T. The attoRAMAN is a ready-to-use system and is delivered with laser source, high throughput spectrometer including a peltier-cooled, back-illuminated CCD, and a state-of-the-art SPM/Raman controller & software package.

We show micro-Raman spectra on epitaxial as well as exfoliated Graphene and on GaAs based nanowires at 4 K and 9 T.

For further technical information concerning attocube systems' products, please visit our website www.attocube.com.

Figures

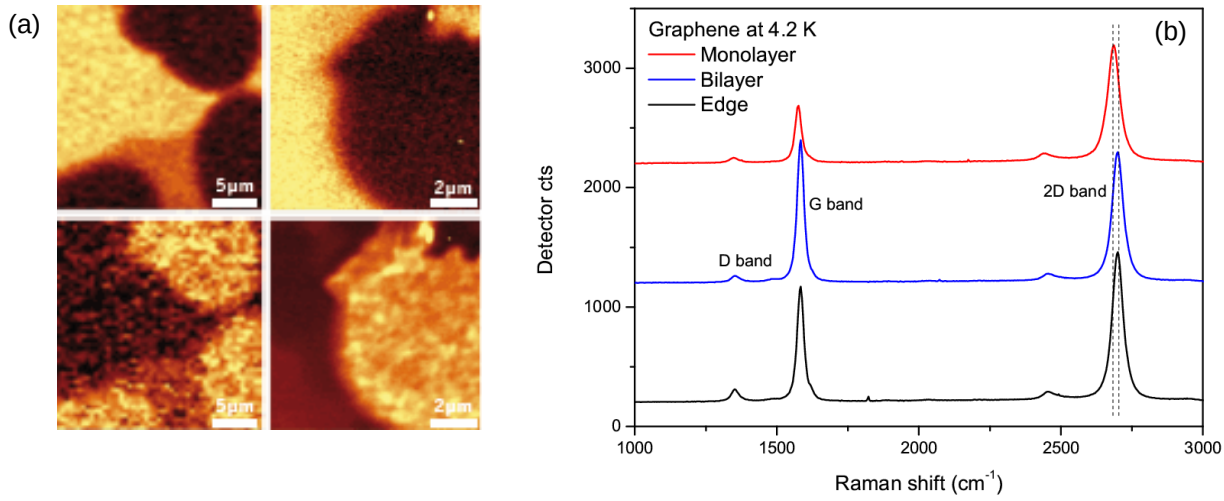

Figure caption: (a) Raman images of epitaxially grown Graphene layers, showing the SiC substrate (top) and the Graphene 2D band (bottom). Left images were recorded at 300 K, right images at 4.2 K. (b) Raman spectra recorded at 4.2 K, depicting (from top to bottom) monolayer and bilayer graphene, and the edge of the latter. The 2D band shifts by approximately 14 cm-1 at the transition from mono- to bilayer Graphene.