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Correlative confocal Raman Imaging for 2D materials JIANYONG YANG, WEI LIU, WITec Instruments Corp., THOMAS DIEING, HARALD FISCHER, MARIUS HENRICH, OLAF HOLLRICHER, WITec GmbH — Graphene was one of the first two-dimensional materials which soon after its first mono-layer production received much attention by many researchers worldwide. Its properties vastly differ from bulk graphite and its potential for applications ranges from transistors to transparent conducting electrodes and solar cell applications. While Graphene is arguably the most prominent two-dimensional material there are to this date many more that are subject to current research such as MoS2, WS2 or MoSe2. Graphene has been already and still is extensively studied using a variety of characterization techniques. Raman spectroscopy and more importantly still, Raman imaging proved to be of great value due to the clearly different spectra obtained from single, double, triple and multi-layered Graphene. This and more information that can be extracted from Raman spectroscopy and imaging can well be complemented with other techniques such as various forms of atomic force microscopy (AFM), Scanning Nearfield Optical Microscopy (SNOM), and scanning electron microscopy (SEM). In this contribution we illustrate the benefit of correlating said techniques with confocal Raman imaging in order to deepen the understanding of the samples in question.

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