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Influence of substrates on graphene layers: Raman study[1] JORGE CAMACHO, LIYUAN ZHANG, TONY VALLA, IGOR ZALIZNYAK, Brookhaven National Laboratory — Electrical contacts and a substrate can significantly influence electronic and physical properties of graphene. Charge transfer, strain, introduction of various impurities and defects are some of the factors that can alter graphene properties. Therefore, the interaction with substrate and contacts has to be considered in any real graphene-based device. Here we use Raman spectroscopy to study effects of different substrates and adsorbates on graphene Raman-active modes. We find that the intensity, frequency and line-width of some modes are very sensitive to the chemical environment of graphene sheets, reflecting the changes in interactions of these modes with charge carriers and degree of disorder introduced in the system.

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