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Study of the Atomic Structure of Graphite Edges Using Raman Spectroscopy MARCOS PIMENTA, LUIZ GUSTAVO CANÇADO, BERNARDO NEVES, MARIA SYLVIA DANTAS, ADO JORIO, Departamento de Fisica, Universidade Federal de Minas Gerais, Brasil, LABORATORIO MICRO-RAMAN TEAM — A study of step edges in graphite with different atomic structures combining Raman spectroscopy and scanning probe microscopy is presented. The orientation of the carbon hexagons with respect to the edge axis, in the so-called armchair or zigzag arrangements, is distinguished spectroscopically by the intensity of a disorder-induced Raman D-band. This effect is explained by applying the double resonance theory to a semi-infinite graphite crystal and by considering the one-dimensional character of the defect and the anisotropy in the optical absorption of graphite.

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