MAR07-2006-001893

Abstract for an Invited Paper
for the MAR07 Meeting of
the American Physical Society

Resonance Raman of Single-Wall Carbon Nanotubes[1]

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The use of resonance Raman spectroscopy to study and characterize single-wall carbon nanotubes (SWNTs) will be discussed. The achievements and limitations of the technique for metrology purposes will be presented, addressing the importance of the excitonic nature of the optical transitions. We use the technique do understand the effect of carbon nanotube doping. The efforts to extend the Kataura plot to larger tube diameters and higher optical transitions not only extend our characterization capability, but also sheds light into the nature of the optically active levels. Experimental results that have not been predicted by solid state approaches are understood on the basis of quantum chemical calculations. It is also interesting to discuss some results on nano-ribbons and their relations to carbon nanotubes.

[1]Support from Kavli Foundation and CNPq, Brazil.