

Abstract Submitted
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Carbon Nanotubes Synthesis Through Gamma Radiation PABLO

TIRADO, RAFAEL GARCIA, Center of Research in Physics, University of Sonora, JORGE MONTES, Department of Nanotechnology, University of Sonora, RODRIGO MELENDREZ, MARCELINO BARBOZA, Center of Research in Physics, University of Sonora, OSCAR CONTRERAS, Center of Nano science and Nanotechnology, UNAM — Carbon nanotubes show a great potential of applications since their discovery by Iijima in 1991^[1] due to their numerous physical-chemical properties such as their high weight to strength relationship, which make them ideal to use in high resistance compound materials, and in many other applications^[2] In this work, a novel method for the synthesis of carbon nanotubes is presented, starting from an ultra-thin sheet of graphite synthesized by the chemical vapor decomposition technique (CVD), using ultra high purity methane and hydrogen at 1200°C in a horizontal quartz reactor. For the synthesis of carbon nanotubes, the graphite sheets were exposed to different doses of radiation, with the objective of breaking the graphite bonds and form carbon nanotubes; a Gammacell equipment model 220 Excel was used for the purpose, which counts with a radiation source of cobalt 60, and a current radiation rate of 0.9 Gy/seconds. The time of exposure to radiation was varied in each sample, according to the desired dose of radiation in each case, afterwards the samples were characterized using the Raman spectroscopy and TEM microscopy techniques with the objective of observing the kind of nanotubes formed, their morphology and their number of defects. Results will be shown during the poster session.

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