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# High-energy ion irradiation of carbon nanostructures and degree of damage characterisation

High-energy ions found use in various materials' modification. Being a new group of promising materials carbon nanostructures got into the field of interest of many research groups. Both carbon nanotubes and graphene are intended to be used in radiation conditions so it is crucial to investigate their behaviour under high-energy ion irradiation. Aim of this work is to describe some methods that could lead to better understanding of mechanisms occurring in such samples. Atomic Force Microscopy along with Scanning Tunnelling Microscopy and Raman Spectroscopy are powerful tools for damage characterisation. Various samples of commercially available single-walled carbon nanotubes have been irradiated with 167MeV Xe ions and studied with Raman spectroscopy (473nm). The results of those studies will be shown as an example.

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