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# High-Energy Ion Irradiation in Material Science at Flerov Laboratory of Nuclear Reactions on the example of Single-Walled Carbon Nanotubes

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From research purposes to space programmes - variety of materials is exposed to radiation. While here, on Earth, amount of high-energy ions irradiation might remain at low doses, spaceships electronics are in a much greater danger. And so it is crucial to test radiation resistance before sending millions of dollars into cold cosmos. But how to do it? Effects of high-energy ion irradiation on the single-walled carbon nanotubes (SWCNTs) will be presented as an exemplar studies. A variety of commercially available SWCNTs samples were prepared and irradiated with 167 MeV Xe ions at the IC-100 cyclotron (FLNR JINR, Dubna). To disclose the structural changes occurring upon irradiation the samples were thoroughly analyzed by Raman spectroscopy (EL = 473 nm and EL = 785 nm). Based on the measured data the dependence between radiation dose and the extent of the damage induced in the material is derived and compared between individual specimen of SWCNTs.

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