

STM and Raman spectroscopic study of graphite irradiated by heavy ions

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Highly oriented pyrolytic graphite was irradiated with swift heavy ions (Ne, Cr, Fe, Ni, Zn, Xe and U) of fluences between 10^{11} and 10^{14} ions/cm² in energy range MeV-GeV. The combination of scanning tunneling microscopy (STM) and Raman spectroscopy studies shows that large numbers of tracks protrude from the surface. The disordered crystal lattice is leading to a Raman-active D mode. Quantitative analysis of the peak intensity indicates that the size of the crystallite domain is larger than the mean distance between in-plane tracks observed by STM.