

## **Latent track radius of PTFE irradiated with high energy ion beam**

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PTFE foils were irradiated with different ion beams (Xe, Au and U) with energies up to 1.5 GeV and fluences between  $1 \times 10^8$  and  $1 \times 10^{13}$  ions/cm<sup>2</sup> at room temperature. The induced modifications in the polymer were analyzed by FTIR, UV-Vis spectroscopy, and XRD. In the FTIR spectra, the CF<sub>2</sub> degradation accompanied by the formation of CF<sub>3</sub> terminal and side groups were observed. In the UV-Vis spectra, the observed increase in the absorption at UV wavelengths is an indication of polymer carbonization. From XRD, the amorphization of the material was evidenced by the decrease in the intensity of the main diffraction peak. An exponential fit of the intensity of the IR absorption peaks resulted in the following values:  $2.9 \pm 0.8$ ;  $4.5 \pm 0.9$  and  $5.6 \pm 0.8$  nm for the latent track radius after irradiation with Xe, Au and U beams, respectively.