

## **Material modifications induced by swift heavy ions in NbTi superconducting wires**

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The Facility for Antiproton and Ion Research (FAIR) to be built at GSI in Darmstadt will be equipped with superconducting magnets. Due to the high ion beam intensities and related beam losses, radiation damage of the Cu/NbTi superconducting wires used in the magnet coils has to be considered. Here we report first experimental results on NbTi multifilament wires exposed to 2.6 GeV U ions at room temperature. Radiation-induced effects were examined using X-ray diffraction and transmission electron microscopy. With increasing ion fluence the amount of the  $\alpha$ -Ti phase decreases. This is crucial because  $\alpha$ -Ti precipitates are the main flux-pinning centres in the Nb-Ti superconducting alloy. The equilibrium hcp  $\alpha$ -Ti transforms into the hexagonal  $\omega$ -Ti phase.