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Effects of Swift Particle Irradiations in (Ba,K)Fe_2As_2 TSUYOSHI TAMEGAI, TOSHIHIRO TAEN, FUMIAKI OHTAKE, YUE SUN, SUNSENG PYON, MASATAKA MORIMOTO, The University of Tokyo, SATORU OKAYASU, Japan Atomic Energy Agency, HISASHI KITAMURA, National Institute of Radiological Sciences — Iron-based superconductors are believed to be good candidates for practical applications at high fields. Knowledge of the pinning mechanism of vortices is essential to achieve a large critical current density at high fields. Irradiations of swift particles are established way to introduce defects that pin vortices under the action of Lorentz force due to large current. We have systematically investigated the effect of swift particle irradiations in high-quality (Ba,K)Fe_2As_2 single crystals. We compare effects of different particles with different energies and densities, and discuss the origin of various features of the critical current density under magnetic field.

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