

Abstract Submitted
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Irradiation of commercial, high-T_c superconducting tape for potential fusion applications: effect on bulk pinning force density¹ ALBERT GAPUD, University of South Alabama — Effects of low dose ion irradiation on the electrical transport current properties of commercially available high-temperature superconducting, coated-conductor tapes were recently investigated, in view of potential applications in the irradiative environment of fusion reactors. Three different tapes, each with unique as-grown flux-pinning structures, were irradiated with Au and Ni ions at energies that provide a range of damage effects, with expected accumulated damage levels. Field- and temperature-dependent measurements of transport current show only modest detriment to as-grown pre-irradiation properties; in one case critical currents may have even been enhanced. To investigate the effect of irradiation on bulk flux pinning in more detail, pinning-force curves have been evaluated using the model by Dew-Hughes [*Physical Review* **140**, A1197 (1965)] – as will be discussed.

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