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Structural and superconducting flux-pinning effects of self-assembled CeO2 nanodots on laser ablated YBa2Cu3O7 single layer thin films[1] TALISHA HAYWOOD, DHANANJAY KUMAR, ABEBE KEBEDE, JEREMIAH ABIADE, TESFAYE GEBRE, NC A&T State University — For electrical power applications, high temperature superconductors such as YBa2Cu3O7 (YBCO) need to possess a high critical current density (Jc) under high magnetic fields. Therefore it's critical to improve their physical properties for enhanced flux pinning. In this communication we present the magnetic field behavior of Jc as function of CeO2 nanodot inclusions in the matrix of laser ablated superconducting thin films.

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