Contribution ID: **230** Type: **Poster Presentation of 1h45m**

Upper critical and irreversibility magnetic fields and transport properties of bulk K-, Ni-, and Co-doped BaFe2As2 pnictides for different granularities and their prospects in magnet design

Wednesday 30 August 2017 13:15 (1h 45m)

A comprehensive study of upper critical (Hc2) and irreversibility magnetic fields (Hirr) in (Ba0.6K0.4)Fe2As2, Ba(Fe0.95Ni0.05)2As2, Ba(Fe0.94Ni0.06)2As2, Ba(Fe0.92Co0.08)2As2, and Ba(Fe0.92Co0.09)2As2 polycrystalline bulk pnictide superconductors for different average grain sizes was made in pulsed fields at the Los Alamos National Laboratory. The magnetic field-temperature (Hc2-T) phase diagrams with Hc2 as high as 65 T at 28 K for the K-doped samples and critical current density (Jc) measurements as high as 105 A/cm2 for the smallest, sub micron grain size samples were obtained. The high Hc2, Hirr, and Jc data shows the suitability of these materials for magnet design as their mechanical strength and random grain alignment show promise in the manufacturing process.

Submitters Country

USA

Authors: Prof. NIKOLO, Martin (Saint Louis University); Dr SINGLETON, John (National High Field Magnet Lab, Los Alamos); Dr JIANG, Jyanyi (National High Field Magnet Lab, FSU); Dr WEISS, Jeremy (National High Field Magnet Lab, FSU); Prof. HELLSTROM, Eric (National High Field Lab, FSU)

Presenter: Prof. NIKOLO, Martin (Saint Louis University)

Session Classification: Wed-Af-Po3.10

Track Classification: F8 - Structural Materials for Magnets