



Contribution ID: 533 Contribution code: WED-PO2-610-05

Type: Poster

## Inter-wire contact force induced critical current degradation of Bi-2212/Ag round wires reacted with and with no pre-pressure

*Wednesday 17 November 2021 10:30 (20 minutes)*

Bi-2212/Ag round wires are promising conductor candidates for the development of high-field magnets up to 25 T. With very high upper critical magnetic field and critical current density, Cable-In-Conduit Conductor (CICC) comprised of Bi-2212/Ag superconducting wires is under designing for the central solenoid coils of the China Fusion Engineering Test Reactor (CFETER). The current degradation due to the inter-wire contact force is a key issue that required to be reduced. However, the relevant publications for Bi-2212/Ag superconducting round wires are very limited to our knowledge. In this paper, the critical current degradation of Bi-2212 round wires due to inter-wire contact force are studied at 4.2 K in a background magnetic field up to 14 T. The crossover straight wires are pressed, and reacted together with other un-pressed wires, the wire samples are reacted with and with no pre-pressure for comparison. The inter-wire contact force dependence of critical current of these wires are then investigated under various crossover angles.

**Primary authors:** GAO, Peng (Institute of Plasma Chinese Academy of Sciences); YANG, Dongsheng (Institute of Plasma Physics Chinese Academy of Sciences); LIU, Haihong (Institute of Plasma Physics Chinese Academy of Sciences); ZHOU, Chao ( Institute of Plasma Physics, Chinese Academy of Sciences); LIU, fang; LIU, Huajun (Chinese Academy of Sciences); LI, Jiangang (Institute of Plasma Physics Chinese Academy of Sciences); QIN, Jinggang

**Presenter:** GAO, Peng (Institute of Plasma Chinese Academy of Sciences)

**Session Classification:** WED-PO2-610 High Tc Wires and Cables IV