
Contribution ID: **514** Contribution code: **WED-PO2-604-01** Type: **Poster**

# Cable R&D Program for 14T MRI

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

Whole body ultra-magnetic field 14 T magnetic resonance imag-ing (MRI) magnet is now under design at Institute of Plasma Physics, Chinese Academy of Sciences, the main coil based on the preliminary designed of Nb3Sn Rutherford cable in Channel Conductor (RICC). Rutherford cable is a core components of the conductor. During the fabrication process of Rutherford cable, the strands were subject to server deformation, these deformation can result in significant reduction of the critical current and the Residual Resistivity Ration (RRR). A Rutherford cabling ma-chine has been purchased which consists of 20 spools, Turks head, caterpillar, and take-up facility. Rectangular cables without a stainless steel core were developed and three types of mixed ca-ble using 1.0 mm Nb3Sn strand and copper strand were fabricat-ed. Two measurements method were adopt to evaluate the critical current degradation after cabling. The first one is to measure the critical current of the strands extracted from the cable, the second method is to measure the performance of the cable. In this paper, the results of measurements of critical current are presented.

**Primary authors:** ZHANG, Yongliang (Institute of Plasma Physics); Dr DAI, Chao (Institute of Plasma Physics); Prof. WU, Yu (Institute of Plasma Physics); Dr MA, Hongjun (Institute of Plasma Physics); Dr ZHANG, Changneng (Institute of Plasma Physics); Dr XU, Aihua ( Changzhou Vocational Institute of Mechatronic Technology); SHI, Yi (Institute of Plasma Physics); Mr WU, Kaihong (Institute of Plasma Physics)

**Presenter:** ZHANG, Yongliang (Institute of Plasma Physics)

**Session Classification:** WED-PO2-604 Low Tc Wires and Cables