



Contribution ID: 1026 Contribution code: THU-OR5-301-04

Type: Oral

## Design of DC Magnet for Super-X Test Facility

*Thursday, 18 November 2021 19:15 (15 minutes)*

A largescale of R&D project for China Fusion Engineering Test Reactor (CFETR) named the comprehensive research facility for fusion technology (CRAFT) has been launched in Sep. 2019. A superconducting experiment testing platform (Super-X for short) will be constructed for evaluating the future superconducting part performance. The maximum testing magnetic field is 15 T, the dimensions of testing space are  $100 \times 160 \times 550$  mm, the field homogeneity of testing space is better than 95%, and the maximum testing current 100 KA. For now, the engineering design for Super-X has been accomplished. The DC magnet is a kind of split coil includes two symmetrical coils assembly. Each coil assembly is composed of three concentric Nb3Sn coils. The peak field is 15.7 T and the field homogeneity reach to 99.3%. The innermost diameter is about 600 mm and the outermost diameter is 2874 mm. The high-Jc Nb3Sn cable-in-conduit conductor (CICC) is used for the high field coil (HFC) and medium field coil (MFC) and the ITER grade Nb3Sn CICC for the low field coil (LFC). This paper present the engineering design of the DC magnet system.

**Primary author:** HAN, Houxiang

**Co-authors:** Mr SHI, Yi (Institute of plasma Physics Chinese Academy of Sciences); WU, Yu (ASIPP)

**Presenter:** HAN, Houxiang

**Session Classification:** THU-OR5-301 High Field Magnet