



Contribution ID: 490

Type: **Poster Presentation of 1h45m**

## Winding R&D for CFETR Central Solenoid Model Coil

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

The central solenoid (CS) model coil is being developed to verify the large-scalar superconducting coil manufacture technology for China Fusion Engineering Test Reactor (CFETR) in ASIPP (Institute of Plasma Physics). The CS model coil composed of Nb<sub>3</sub>Sn (inner and outer coils) and NbTi (upper, middle and lower coils) hybrid superconducting magnet can reach to 12 T maximum magnetic field. All of five coils are the pancake coil composed of pancakes concentric circular turns, pancake joggles and upper & lower leads. For pancakes concentric circular turns, the minimum diameter is 1500 mm, the maximum diameter 3544.8 mm and the maximum height is 1545.4 mm. The high precision for coil continuous winding must be acquired, the innermost and outermost circular turn surface profile tolerance is 0.5 mm and the turn insulation gap tolerance is 2.6(0/+0.5) mm. The winding R&D activities, including the continuous winding for the pancakes concentric circular turns, the forming on-line for the pancake joggles, have been conducted to optimize and finalize the coil design and do the coil winding technology verification and improvement. The winding & forming for a 4×4 mock-up coil of the Nb<sub>3</sub>Sn inner coil have been finished.

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**Session Classification:** Wed-Af-Po3.02

**Track Classification:** B1 - Superconducting Magnets for Fusion