MT 26
International Conference
on Magnet Technology
Vancouver, Canada | 2019

Contribution ID: **644** Type: **Poster Presentation**

Mon-Mo-Po1.03-11 [31]: Test of a single Nb3Sn sextupole coil for ECR ion source using a mirror structure

Monday 23 September 2019 09:15 (2 hours)

IMP is developing a Nb3Sn superconducting magnet system for a 45 GHz electron cyclotron resonance (ECR) ion source. To achieve this complicated and difficult Nb3Sn magnet, a prototype with identical cross section but half length of the magnet is proposed. Recently a single sextupole coil about 0.5 m long has been fabricated and tested. The coil has a bore size of 200 mm and was wound by using a Nb3Sn wire with 1.3 mm diameter. In order to test the coil efficiently, a mirror structure is utilized. And the Bladder & key technology is employed to exert the required preload on the coil. This paper describes the magnetic field design of the sextupole mirror structure, presents the fabrication of the sextupole coil and reports the test results.

Authors: Dr CHEN, Yuquan; Ms ZHU, Li; Mr MEI, Enming; Dr WU, Wei; Mr OU, Xianjin; Mr DU, Zhuoyue; Mr NI, Dongsheng; Dr SUN, Liangting

Presenter: Dr WU, Wei

Session Classification: Mon-Mo-Po1.03 - High Field Magnets for Accelerators