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## **Mon-Af-Po1.11-04 [4]: Progress in the Development of a 25 T All Superconducting Magnet with Small-Scale YBCO Insert Coil**

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The 25 T all superconducting magnet designed as a combination of 14 T low temperature superconductor (LTS) background field magnet and 11 T YBCO insert coil has been developed at Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP). The electromechanical properties of YBCO coated conductors and magnetic field intensity and orientation dependence of the critical current were investigated to support the design of the insert coil. The insert coil with No-Insulation (NI) winding technique has the inner and outer diameters of 16 mm and 56 mm, respectively, and consists of ten single pancakes wound with about 240 m of YBCO conductors produced by Shanghai Superconducting Technologies Co., Ltd (SSTC). The preliminary tests were carried out at 77 K and 4.2 K in self-field. The results show that the performance of insert coil did not degrade during the manufacturing process, and it can generate a maximum central field of 15.6 T at 4.2 K, self-field. The YBCO insert coil will be tested in the 14 T LTS background field magnet in the next step to evaluate the performance in the ultrahigh magnetic fields. The latest design, construction, and preliminary test results of the YBCO insert coil will be fully introduced in this paper.

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