

Nb3Al high field accelerator magnet R&D

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Abstract: KEK is developing the Nb3Al strand and cable for an accelerator magnet in collaboration with NIMS, and the development of subscale magnet has been started practically since last year. KEK has studied on the effect of number of filaments and matrix ratio on non-Cu Jc for last two years and also developed continuous Cu electro-plating apparatus. NIMS has fabricated the trial Rutherford cable with 27 strands successfully in collaboration with Fermi lab. And also double-layer common coil has been fabricated and tested successfully.

The magnetic and mechanical design of 15 T subscale magnet has been started practically since last year, and the preparation of drawings and tools is ongoing in parallel.

The latest status of the development of Nb3Al strand/cable and the magnet design will be presented.