

KEK Effort for High Field Magnets

T. Nakamoto, KEK, Tsukuba, Japan

Abstract - KEK has emphasized efforts to develop the RHQ-Nb₃Al superconductor and a sub-scale magnet reaching 13 T towards the HL-LHC upgrade in last years. In addition, relevant R&D regarding radiation resistance has been carried out. For higher field magnets beyond 15 T, HTS in combination with A15 superconductors should be one of baseline materials. However, all these superconductors are very sensitive to stress and strain and thorough understanding of behaviour is truly desired for realization of high field magnets. KEK has launched a new research subject on stress/strain sensitivity of HTS and A15 superconductors in collaboration with the neutron diffraction facility at J-PARC and High Field Laboratory in Tohoku University. Present activity for high field magnets at KEK is reported.

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