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Wed-Af-Po3.18-04 [40]: Electromagnetic properties of REBCO coated conductor with multi-superconducting layers

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The enhancement of engineering current density, Je is one of important issues in conductors for high performance superconducting magnets. In order to obtain the higher Je of high temperature superconducting (HTS) REBCO conductor, we adopted the laminate structure consisting of three REBCO superconducting layers on one common IBAD processed substrate. In this study, we have fabricated various conductor samples with three HTS layers by using two types of REBCO tapes supplied from different companies, where one was HTS layer with artificial pinning centers, L_REBCO (APC) and the other was that without APC, L_REBCO. We evaluated in-field critical current density, Jc property of 3-HTS layered REBCO conductor samples in the magnetic field range of 0 to 6 T. And also investigated the influence of REBCO layer with APC on the improvement of in-field Jc property for samples with four different layer structures of L_REBCO(APC)/L_REBCO/L_REBCO(APC), L_REBCO(APC)/L_REBCO/L_REBCO, L_REBCO/L_REBCO/L_REBCO and L_REBC(APC)/L_REBC(APC)/L_REBC(APC). Detailed results will be presented in the conference.

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