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Recent progress and trends in development of high-field HTS coated conductors

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Progress in development and processing of HTS-coated conductors is presented regarding general trends and particular cases of the double-disordered YBCO conductors. These coated tapes with a length of 400-600 m show already a very high in-field critical current density, up to 1000 A/mm² at 20 T, B//c, 4.2 K. Potential for further gaining of critical currents and current density is discussed regarding compensation of intrinsic strains and stresses and optimization of deposition temperature kinetic. Efficient methods for characterization of the long tapes are discussed in a view of creation of feasible techniques that on the basis of 77 K measurements allow an evaluation of critical currents and current densities in high and ultra-high fields at helium temperatures. A successful interaction of the development program with the EASITrain EC supported program is demonstrated employing analysis of gained synergistic effects.

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