

INVITED

Coated Conductor Development

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A coated conductor (CC), which is called second generation high temperature superconducting (HTS) wire, is hetero-epitaxial coating of superconductor (mainly $\text{YBa}_2\text{Cu}_3\text{O}_7$) on either a textured substrate or a textured oxide layer deposited on a polycrystalline substrate. Because of its enabling properties for operation in LN₂ temperature in the presence of high magnetic field, it is regarded as a key factor for the commercialization of superconductor in the electrical power application to develop cost-effective processing to fabricate coated conductor in long length. There are two main approaches to developing CC, one developed in Oak Ridge National Lab, and the other pioneered in Japan but extensively developed in Los Alamos National Lab. The coated conductor in general will be introduced in this presentation in addition to the recent progress in US and Japan, and the future prospects.

keywords : coated conductor, HTS tape/wire