Fabrication of YBCO Coated Conductor by Oxide-precursor-based MOD Process Employing IBAD Substrate

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YBCO coated conductor have been fabricated with a newly developed oxide-precursor-based MOD process. The precursor solution was synthesized with low cost YBCO oxide precursor and YBCO coated conductor have been deposited on IBAD substrate (CeO_2/IBAD-YSZ/SUS). YBCO coated conductor prepared by dip coating gives transport I_c of 15A/cm-w in 2cm at 77K. Microstructural and crystallographic analyses indicate that YBCO layer was epitaxially grown and exhibits well-developed dense microstructures. Also discussed are processing and analysis of YBCO coated conductor by slot-die web coating method. It was shown that this oxide-based MOD process provided a low cost route to coated conductor with high J_c.

keywords : YBCO, MOD-TFA, IBAD, critical current, web coating

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