

A Sol-Gel Growth of CeO₂ Buffer Layers for YBCO Coated Conductor

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A new method of fabrication of CeO₂ buffer layered Ni substrate for YBCO coated conductor was developed. Firstly, Ni substrates with a biaxial texture were prepared by electrodeposition method in the presence of magnetic field. Then, CeO₂ films were deposited by sol-gel process. A solution based on a modified Pechini process was prepared for dip coating. These "chemical" routes provide a more simple and economical way to high quality buffer layered substrate compared with "physical" ones such as PLD, IBAD etc. The orientations and crystallinities of buffer layered substrates were characterized by X-ray pole figure and θ -rocking

keywords : buffer layer, YBCO, CeO₂, sol-gel