

Preparation of YBCO Thin Films by MOD-TFA Process

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Superconducting YBCO thin films are fabricated on single-crystalline substrates by Metallo-organic Deposition process employing Trifluoroacetic acid as a chelating agent (MOD-TFA). (100)-oriented single crystalline LaAlO₃ substrates were employed to grow superconducting film with high crystallinity. The fully processed YBCO thin films were characterized with XRD, SEM, EDS, and J_c measurement. The microstructures of YBCO thin films show labyrinth-like patterns. The origin of this microstructure was delineated by compositional inhomogeneity during the MOD process and it was shown that the microstructure may be modified by additives. In this work, effects of additives on the microstructures and electrical properties of YBCO thin films have been investigated.

keywords : YBCO, MOD, TFA, additives