Fabrication of YBCO Films on Metal Tapes By the TFA-MOD Process

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YBCO thin films on metal substrates were prepared by the metal-organic deposition using trifluoroacetates (TFA-MOD). Since the reaction between YBCO film and CeO_2 cap layer produces $BaCeO_3$ layer, leading to a serious degradation of J_c, we tried to overcome this problem employing Ba-excessive nominal compositions of $YBa_{2+x}Cu_3O_{7-\delta}$ ($0 \leq x \leq 0.1$). The solutions are coated on the metal substrates with the CeO_2 cap layer by the dip coating method, calcined at the temperature up to 400°C, and fired at the various high temperatures for 2 h in a reduced oxygen atmosphere. With this approach, YBCO films possessing critical temperature over 85 K could be successfully prepared on metal substrates. In this paper, we report characteristics of fabricated YBCO films and discuss about the influence of processing parameters on T_c values of samples.

keywords : YBCO thin film, TFA-MOD, T_c

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