

Annealing Time Dependence of MOD-YBCO Films using Low Total Pressure by Reel-to-reel Method

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The annealing time dependence of YBCO films was investigated using low total pressure in Metal Organic Deposition (MOD) process. The method of low pressure annealing was adopted to enhance the removal of HF gas from the surface of the MOD-YBCO films, hence to increase the growth rate of YBCO films. In this work, the total pressure in annealing process was varied from 700Torr to 1Torr and its effect on the growth of YBCO films was compared with atmospheric pressure. The lower pressure was found effective to increase the growth rate and to control the pore size of the YBCO films in MOD method. A fast growth of MOD-YBCO films was realized with high critical current density over $1\text{MA}/\text{cm}^2$ using low pressure annealing process. Large pores, usually observed at atmospheric pressure in MOD method, disappeared and also the number of pores was reduced.

Keywords : MOD, YBCO, low pressure annealing

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