# Minimization of YBa2Cu3O7-δ High-TC Superconducting Filters


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**ABSTRACT**

Fabrication of minimized high-TC superconducting (HTS) cross-coupled narrow-band filters have been studied in this work. The HTS filters were fabricated by pattering YBa2Cu3O7-y(YBCO) films double-sided deposited on LaAlO3 (LAO) substrates with an RF sputtering technique. The filter show a 2.53-GHz center frequency with a 5-MHz bandwidth and a 2.4-dB insertion loss at 77 K. In addition, the effects of annealing in high-pressure Oxygen and flux pinning on the surface resistance RS of YBCO micro stripe. Line have been studied. The YBCO micro stripe Line with annealing at 400 ℃ , shows a lower Rs of 0.25 mΩ , which is smaller than that of 0.234 mΩ for sample before annealing . This results indicates the annealing in high-pressure oxygen can improve the microwave properties of YBCO. Moreover, it is found that the Rs of YBCO micro stripe Line with La0.7Sr0.3MnO3 pinning centers does not be increased by an applied magnetic field.



Keywords : YBa2Cu3Oy (YBCO) ; flux pinning ; La0.7Sr0.3MnO3 (LSMO)


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