

**SUPERCONDUCTING PROPERTIES OF BARIUM, Ba
SUBSTITUTION IN BSCCO-2223**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Environmental Technology
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

JANUARY 2017

ABSTRACT

SUPERCONDUCTING PROPERTIES OF BARIUM, Ba SUBSTITUTION IN BSCCO-2223

In this study, the superconducting properties of barium, Ba substitution in BSCCO-2223 have been investigated by using four-point probe and X-ray Diffraction analysis. Ba was incorporated in the calcium, Ca^{2+} site with concentrations of $x = 0.00, 0.02, 0.05$ and 0.10 . Samples of $x = 0.02, 0.05$ and 0.10 have higher T_c value compared to the pure BSCCO-2223 ($x = 0.00$). The optimum Ba concentration that has the highest T_c value which is 99 K is $x = 0.05$. It can be simplified that barium substitution in BSCCO-2223 enhances the T_c value. XRD pattern shows a lot of improvement of the peaks since the low-peak (2212) decreases while high-peak (2223) increases with the increases of Ba concentration.

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