ABSTRAK

PENGARUH VARIASI KADAR $CaCO_3$ TERHADAP PEMBENTUKAN FASE SUPERKONDUKTOR BSCCO-2212 PADA SUHU SINTERING 835℃ MENGGUNAKAN METODE PENCAMPURAN BASAH

Oleh

CAHLIA KURNIA

Telah dilakukan sintesis superkonduktor BSCCO-2212 menggunakan metode pencampuran basah pada suhu 835℃ . Pada penelitian ini dibuat 4 sampel dengan variasi kadar $CaCO_3$ sebesar 0,95 mol, 1,00 mol, 1,05 mol, dan 1,10 mol. Sampel yang telah dibuat dilakukan karakterisasi *X-Ray Diffraction* (XRD) dan *Scanning Electron Microscopy* (SEM). Hasil analisis XRD menunjukkan fraksi volume meningkat seiring dengan bertambahnya kadar $CaCO_3$. Fraksi volume tertinggi sebesar 88,44% pada sampel BSCCO-2212/1,10. Sedangkan fraksi volume terendah sebesar 81,02% pada sampel BSCCO-2212/0,95. Sementara derajat orientasi tertinggi pada sampel BSCCO-2212/0,95 sebesar 29,01%. Hasil karakterisasi SEM menunjukkan bahwa sampel sudah terorientasi meskipun belum sempurna serta terdapat ruang kosong antar lempengan (*void*).

Kata kunci: superkonduktor, BSCCO-2212, sintering, fraksi volume, dan derajat orientasi.

ABSTRACT

THE EFFECT OF VARIATION IN THE CONTENT OF $CaCO_3$ ON THE FORMATION OF SUPERCONDUCTOR PHASE BSCCO-2212 AT SINTERING TEMPERATURE 835℃ USING THE WET MIXING METHOD

By

CAHLIA KURNIA

The synthesis of the BSCCO-2212 superconductor was carried out using the wet mixing method at a temperature of 835℃. In this study, 4 samples were made with varying levels of $CaCO_3$ which is 0,95 mol, 1,00 mol, 1,05 mol and 1,10 mol. The samples that haveb been made are characyerization to X-Ray Diffraction (XRD) and Scanning Electron Microscopy (SEM) tests. The results of XRD analysis show that the volume fraction increases with increasing $CaCO_3$ levels. The highest volume fraction was obtained at 88,44% in sample BSCCO-2212/1,00. While the highest degree of orientation in the sample BSCCO-2212/0,95 is 29,01%. SEM characyerization results show that the sample oriented although not perfect and there is an empty space between the plates.

Key words: *superconductor, BSCCO-2212, sintering, volume fraction, and degree of orientation.*