

## **ABSTRAK**

### **PENGARUH VARIASI KADAR $\text{CaCO}_3$ TERHADAP PEMBENTUKAN SUPERKONDUKTOR BPSCCO-2212 PADA SUHU SINTERING $835^\circ\text{C}$ MENGUNAKAN METODE PENCAMPURAN BASAH**

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Telah dilakukan sintesis superkonduktor BPSCCO-2212 menggunakan metode pencampuran basah pada suhu  $835^\circ\text{C}$  dengan kadar doping pb 0,2 mol variasi kadar  $\text{CaCO}_3$  sebesar 0,95; 1,00; 1,05; dan 1,10 mol. Sampel hasil sintesis dikarakterisasi menggunakan *X-Ray Diffraction* (XRD) dan *Scanning Electron Microscopy* (SEM). Hasil analisis XRD menunjukkan fraksi volume meningkat seiring dengan bertambahnya kadar  $\text{CaCO}_3$ . Fraksi volume tertinggi 93% pada sampel BPSCCO-2212/1,10. Sedangkan fraksi volume terendah 76% pada sampel BPSCCO-2212/0,95. Sementara derajat orientasi tertinggi pada sampel BPSCCO-2212/0,95 23,32%. Hasil karakterisasi SEM menunjukkan bahwa sampel sudah terorientasi serta memiliki ruang kosong (*void*) yang sedikit.

**Kata Kunci:** Superkonduktor BPSCCO-2212, fraksi volume, derajat orientasi.

## **ABSTRACT**

### **THE EFFECT OF VARIATION OF $\text{CaCO}_3$ CONTENT ON THE FORMATION OF BPSCCO-2212 SUPERCONDUCTOR AT SINTERING TEMPERATURE OF $835^\circ\text{C}$ USING WET MIXING METHOD**

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*The synthesis of the BPSCCO-2212 superconductor was carried out using the wet mixing method at a temperature of  $835^\circ\text{C}$  with pb doping level of 0.2 mol and variation of  $\text{CaCO}_3$  level of 0.95; 1,00; 1,05; and 1,10 mol. The synthetic sampels were characterized using X-Ray Diffraction (XRD) and Scanning Electron Microscopy (SEM). The results of XRD analysis show that the volume fraction increases with increasing  $\text{CaCO}_3$  levels. The highest volume fraction was 93% in sampel BPSCCO-2212/1.10. The lowest volume fraction was 76% in the BPSCCO-2212/0.95 sample. Meanwhile, the highest degree of orientation in the BPSCCO-2212/0.95 sample was 23.32%. The results of SEM characterization show that the sample is oriented and has little void.*

**Keywords:** Superconductor BPSCCO-2212, volume fraction, degree of orientation.