

ABSTRAK

ANALISIS TINGKAT KEMURNIAN FASE SUPERKONDUKTOR BSCCO-2212 DAN BPSCCO-2212 AKIBAT VARIASI SUHU SINTERING MENGGUNAKAN METODE PENCAMPURAN BASAH

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Penelitian dilakukan untuk mengetahui pengaruh variasi suhu sintering terhadap tingkat kemurnian fase superkonduktor BSCCO-2212 dan BPSCCO-2212 menggunakan metode pencampuran basah. Variasi suhu sintering yang digunakan adalah 825, 830, 835 dan 840°C selama 20 jam. Hasil XRD menunjukkan bahwa tingkat kemurnian fase pada superkonduktor BSCCO-2212 dan BPSCCO-2212 meningkat hingga mencapai titik optimum pada suhu sintering 835°C kemudian mengalami penurunan pada suhu sintering 840°C. Fraksi volume tertinggi sampel BSCCO-2212 didapatkan pada suhu sintering 835°C sebesar 71,09% dan derajat orientasi tertinggi didapatkan pada suhu sintering 830°C sebesar 23,38%. Pada sampel BPSCCO-2212 fraksi volume tertinggi didapatkan pada suhu sintering 835°C sebesar 52,59% dan derajat orientasi tertinggi pada suhu sintering 830°C sebesar 43,49%. Hasil perbandingan sampel BSCCO-2212 dan BPSCCO-2212 diperoleh bahwa sampel BPSCCO-2212 memiliki tingkat kemurnian fase yang lebih tinggi dibandingkan BSCCO-2212.

Kata kunci : Superkonduktor BSCCO-2212, Suhu Sintering, Fraksi Volume

ABSTRACT

ANALYSIS OF THE LEVELS OF CHASSIS PHASE BSCCO-2212 AND BPSCCO-2212 RESULTING FROM VARIATIONS SINTERING TEMPERATURES USE WET MIXING METHODS

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The research is done to see how variations of sintering temperatures would affect the level of chasteness of the superconducting phases of BSCCO-2212 and the BPSCCO-2212 using methods of moist mixing. Variations of sintering temperatures used are 825, 830, 835 and 840°C over 20 hours. XRD results show that the level of phase innocence on the superconductors of BSCCO-2212 and the BPSCCO-2212 increased to the point of optimum at sintering temperature 835°C then went down at sintering 840°C. The higher-volume fraction of the BSCCO-2212 obtained at sintering temperature 835°C by 71,09% and the highest degree of orientation obtained at sintering temperature 830°C by 23.38%. On sample BPSCCO-2212 fractions of the highest volume found at sintering temperature 835°C for 52.59% and the highest degree of orientation at sintering temperature 830°C by 43.49%. The ratio of sample BSCCO-2212 and BPSCCO-2212 were obtained that sample BPSCCO-2212 had a higher level of phase purity than BSCCO-2212.

Keywords: Superconductor BSCCO-2212, Sintering Temperature, Volume Fraction