

EFFECTS OF NANO CaO IN Tl(Sr_{1.5}Yb_{0.5})Ca_yCu₂O_{7-δ} SUPERCONDUCTOR

Amalina Syazana Adnan and R. Abd-Shukor

*School of Applied Physics, Universiti Kebangsaan Malaysia,
43600 Bangi, Selangor, Malaysia*

ABSTRACT

Yb substituted Tl-1212 type phase with nominal starting composition Tl(Sr_{1.5}Yb_{0.5})Ca_yCu₂O_{7-δ} ($y = 1.0, 1.2, 1.3$ and 1.4) have been prepared and characterized. The X-ray diffraction patterns indicate that the variation of nanosized calcium oxide for $y = 1.0$ to 1.4 showed a dominant 1212 phase and the 1201 as the minor phase. This system showed a metallic normal state behavior for all samples. Scanning electron micrographs of fractured internal sections of all the samples showed porous microstructure with grains of similar shapes and sizes.

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