

(TlPbBi)-(SrBa)-Ca-Cu-O Superconductor Films Obtained by Electrodeposition Process

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We have performed the electrochemical method to fabricate high temperature superconducting (TlPbBi)-(SrBa)-Ca-Cu-O films. The precursors of the superconducting sample were codeposited at a pulsed-potential cycle consisted of 1s at -4V followed by 1s at -1 V on a silver substrate. The variation of structure, microstructure and elemental was analysed by ICP and SEM techniques. The specimens were consisted predominantly of the Tl-1212 phase and have a transition temperature of 87 K in low magnetic field. It was showed that each grain has the stoichiometric ratio of $Tl_{0.7}Pb_{0.3}Bi_{0.1}Sr_{2.4}Ba_{0.2}Ca_{1.2}Cu_{2.5}O_x$ by EDX analysis. The critical current density J_c , calculated from magnetic hysteresis curves by using Bean model, was $1.4 \times 10^3 A/cm^2$ at 5 K in zero field.

keywords : electrodeposition, electrochemical, Tl-1212, film