

ABSTRACT

PROCESS FOR MAKING SUPERCONDUCTING Tl-Pb-Sr-Ca-Cu OXIDE FILMS AND DEVICES

A process for making a superconducting Tl-Pb-Sr-Ca-Cu-O thin film comprised of at least one phase of the formula $\text{Tl}_{0.5}\text{Pb}_{0.5}\text{Sr}_2\text{Ca}_{1+n}\text{Cu}_{2+n}\text{O}_{7+2n}$ where $n = 0, 1$ or 2 . The process comprises sputtering an oxide film onto a dielectric substrate from an oxide target containing preselected amounts of Tl, Pb, Sr, Ca, and Cu, and heating an oxygen-containing atmosphere in the deposited film in the presence of a source of thallium oxide and lead oxide and cooling the film.

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