

## Effect of Fluorine on The Phase Formation of Tl-1223 Films Grown Over Silver Substrates

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$Tl_1Ba_2Ca_2Cu_3O_yF_x$  films have been prepared by two step process. First, precursors films of  $Ba_2Ca_2Cu_3O_y$  composition were deposited with spray pyrolysis technique and then fluorine and thallium are incorporated by diffusion in a two zone furnace. Silver foils were used like substrates. A Fluorine content in the  $x = 1$  to 3.5 range was obtained with a process carried out by 60 to 180 minutes at  $850^\circ C$ . Fluorine improves the formation phase and increases the critical temperature. Grains like plates with  $c$  axis oriented in the normal direction to the surface substrate are observed.