

Properties of films of mercury cuprates grown on CeO₂ buffered R-cut sapphire and LaAlO₃

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Abstract

Films of Hg-1212 have been made by RF sputtering and ex-situ mercurated on CeO₂ buffered R cut sapphire or LaAlO₃ (001) substrate. The elaboration process is described and some relevant parameters of the epitaxial growth discussed in connection with thickness, composition. The films are superconducting at 120 K from resistivity and susceptibility measurements. Some microwave properties are presented in view of practical applications such as filters. Finally attempts to pattern and micro-pattern some of these films are presented and resulting properties presented.

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