

T_CSUH Special Seminar

Texas Center for Superconductivity

University of Houston

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Interfacial Behavior of Highly Epitaxial Ferroelectric (Pb,Sr)TiO₃ Thin Films

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Room 102, University of Houston Science Center

11:00 a.m. – 12:00 noon

Abstract

(Pb,Sr)TiO₃ thin films have shown great potential in high frequency room temperature microwave elements due to their excellent properties such as large tunability and low dielectric loss. Interfacial properties have been considered to be related closely with the dielectric properties of these films. To fully understand the growth mechanism for achieving high quality epitaxial films with optimized physical properties, systematical study on the interfacial behavior is critical and important. We have investigated the strain states, dislocation density and strain distribution near the interface of epitaxial (Pb,Sr)TiO₃ thin films on NdGaO₃, LaAlO₃, and MgO substrates, by using high-resolution X-ray diffraction. Dielectric properties of the films have been measured and demonstrate strong correlation with the interfacial properties such as strain and dislocation densities. Details about the interfacial behavior and strain relaxation will be discussed.

Persons with disabilities who require special accommodations in attending this lecture should call (713) 743-8210 as soon as possible.



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