

Abstract Submitted
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Electronic Structure at Amorphous-Crystalline Oxide Interfaces¹

LIOR KORNBLUM, DANA COHEN-AZARZAR, MARIA BASKIN, The Andrew Erna Viterbi Dept. of Electrical Engineering, Technion - Israel Institute of Technology, Haifa 32000 - Israel — Emergent physics at oxide interfaces has been the source of considerable interest owing to its intriguing and often unexpected nature. As a result, considerable experimental and theoretical effort has been applied to the electronic structure at oxide interfaces. This effort was focused mainly on epitaxial interfaces, where both sides are single-crystalline. Recent demonstration of conductivity at amorphous-crystalline interfaces between two insulating oxides has provided valuable insight for the ongoing debate on the underlying mechanisms of conductive oxide interfaces. In this work we address the interplay between the materials properties and the electronic structure of a model amorphous-crystalline oxide system. Structural, chemical and electronic probes are employed to present a picture of the electronic structure at the interface of the model materials system. Our results highlight the impact of the growth conditions on the electronic structure, and provide perspective on the electronic structure of the model system with respect to the published data on epitaxial interfaces.

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