

Abstract Submitted
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Tailoring spin-orbit Mott insulators via designed superlattices VI-
JAY SHANKAR V, Department of Physics, University of Toronto, Toronto, Canada, JOBU MATSUNO, RIKEN Advanced Science Institute, Wako, Japan, TOMOHIRO TAKAYAMA, Department of Advanced Materials, University of Tokyo, Japan, M. AHZAN ZEB, Cavendish Laboratory, University of Cambridge, Cambridge, UK, HAE-YOUNG KEE, Department of Physics, University of Toronto and Canadian Institute for Advanced Research, Toronto, Canada, HIDENORI TAKAGI, Department of Physics, University of Tokyo, and RIKEN Advanced Science Institute, Japan — The layered perovskite iridates $\text{Sr}_{n+1}\text{Ir}_n\text{O}_{3n+1}$ show a transition from a magnetic insulating to a semi-metallic state as the number of layers n is increased. This behaviour is intimately related to the interplay between spin-orbit coupling, electronic correlations and dimensionality. In this talk, we will show that the fabricated superlattices $[(\text{SrIrO}_3)/\text{SrTiO}_3]$, provide new insight into this behaviour. Theoretical calculations using density functional and tight binding approaches will be presented to support our results.

Vijay Shankar Venkatarman
University of Toronto

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