

人工酸化物結晶における相不安定性と次元クロスオーバー

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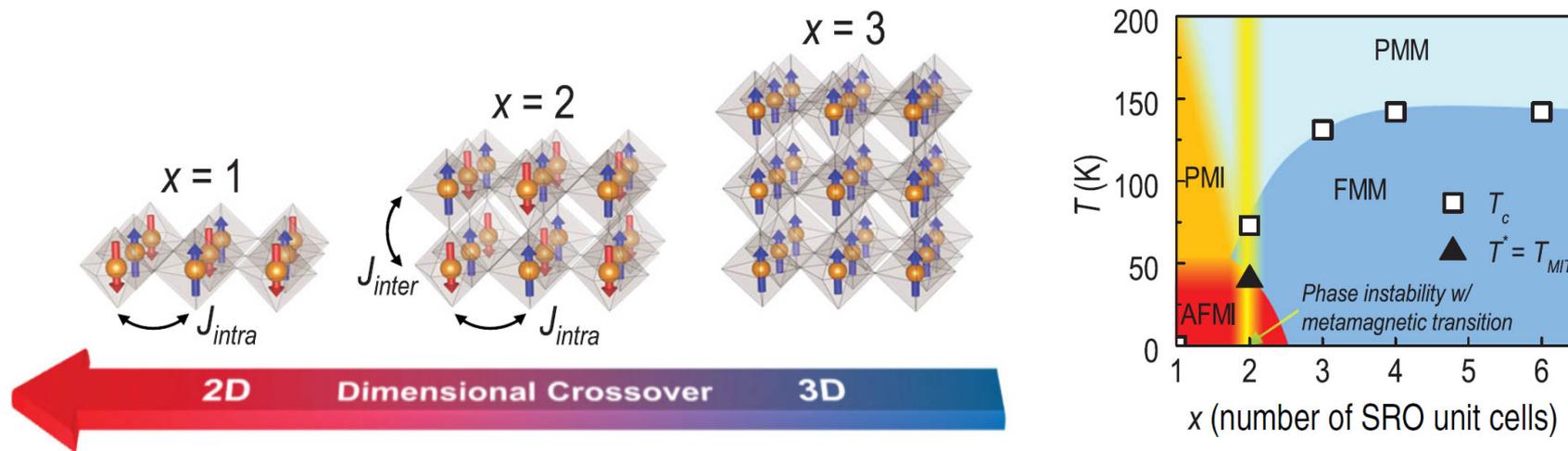
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Phase Instability amid Dimensional Crossover in Artificial Oxide Crystal

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原子スケールエピタキシーによって合成された人工結晶は、正確な厚さ変調により、量子相の次元とそれに伴う相転移を制御する機能をもたらします。ここでは、高度に抑制された電荷移動を伴う真の2次元SrRuO₃結晶を合成することにより、原子的に設計された超格子の次元制御および次元誘起金属絶縁体転移を示す。/ Artificial crystals synthesized by atomic-scale epitaxy provide the ability to control the dimensions of the quantum phases and associated phase transitions via precise thickness modulation. Here, we demonstrate a dimensionality-controlled and induced metal-insulator transition in atomically designed superlattices by synthesizing a genuine two-dimensional SrRuO₃ crystal with highly suppressed charge transfer.