

# Manipulating electronic and magnetic phases in atomically engineered layers and hybrids

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## Abstract

The greatest challenge of condensed matter physics and materials science is to conceive, design, and characterize novel materials with richer electronic phases and greater functionality. Much of the condensed matter physics research in the 20th century was focused on investigating the properties of bulk materials, where the range of accessible phenomena was limited by available materials/chemistry. The first decade of 21<sup>st</sup> century has witnessed a new paradigm -“atomically engineering of materials”- opening avenues to explore and study novel electronic phenomena that cannot be attained in the parent bulk constituents. This talk will focus on new phases of Cu-based oxides (SrCuO<sub>2</sub> & CuO) as well as anti-perovskite (Sr<sub>3</sub>PbO) stabilized by epitaxial-cum-dimensionality control thin-film approach and provide insight to design hybrid structures revealing exciting phases of electronic matter by employing atomic layering schemes.

## References

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