

## O 17: Overview Talk (Eli Rotenberg)

Time: Tuesday 9:30–10:15

Location: HE 101

**Invited Talk**

O 17.1 Tue 9:30 HE 101

**Angle-Resolved Photoemission Spectroscopy (ARPES) and its applications to novel 2D materials** — •ELI ROTENBERG —  
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Angle resolved photoemission spectroscopy (ARPES) is a well-known and ideal technique for elucidating the basic electronic structure of materials, both simple and complex. Beyond this, it is able to illuminate more subtle aspects of the properties of conduction electrons, such as ground-state symmetry breaking and many-body interactions. The tuning, or control, of these properties in engineered materials is of tremendous relevance for the search for new materials with poten-

tially useful properties, such as higher temperature superconductors or long-lived, topologically non-trivial states.

Because ARPES is a critical tool in the development cycle of such new materials, there is a wide interest in establishing tighter integration between ARPES and both ever more discerning light sources as well as complex in-situ sample preparation capabilities. I will provide a review of the ARPES technique and its application to new materials in this context, emphasizing the development of new instrumentation for small-spot ARPES (potentially down to 50 nm or so) and crystal growth of 2D materials using conventional and pulsed laser deposition techniques. Examples will be drawn from epitaxially-grown multilayer graphenes and oxides such as tetragonal CuO.