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## **【606】 Discovery and engineering of new topological quantum materials**

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Topological quantum materials have become a ubiquitous topic in condensed matter physics over the past decade, but there is still plenty of room for new discoveries of exotic topological phases and improvements in device engineering. Here, I will report our achievements in thin film growth, soft X-ray angle-resolved photoemission spectroscopy (SX-ARPES), and scanning tunnelling microscopy and spectroscopy (STM and STS), to synthesize new materials and characterize and engineer their electronic properties, such as:

1. Tuning of the band offset at superconductor/semiconductor interfaces for applications in Majorana zero mode heterostructures.
2. Investigation of the interplay between chirality and Fermi-arc topography in chiral topological semimetals.
3. Synthesis and spectroscopy of a novel two-dimensional material with flat bands.

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