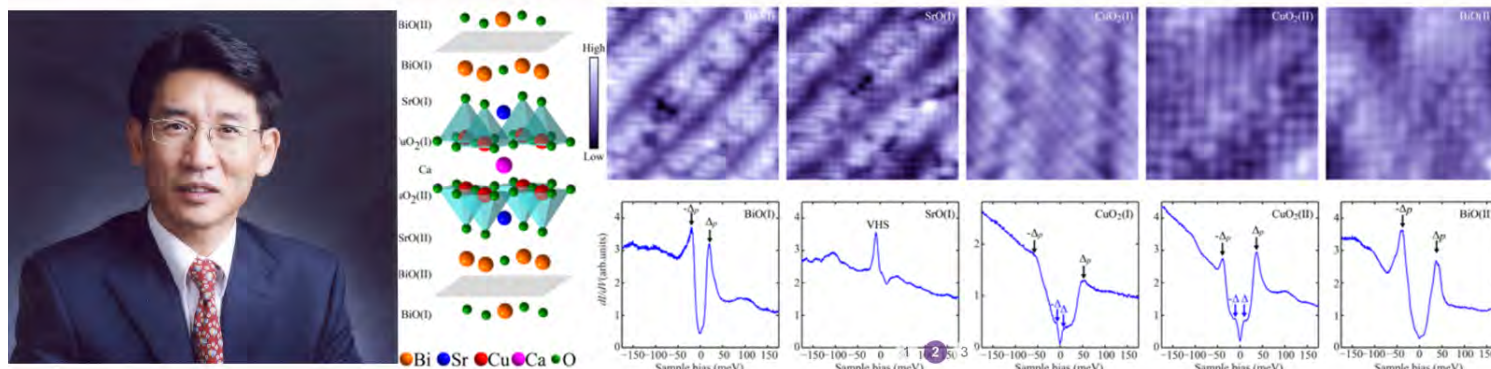


Frontiers in Microscopy & Microanalysis

Atomic-Level Control of Quantum Materials: From Quantized Anomalous Hall Effect to High T_c Superconductivity



Talk by: Prof. Qi-Kun Xue
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Wednesday 7th of December 2016 - 15:00 to 16:00
AIBN #75; Level 1 Seminar Room

Molecular beam epitaxy (MBE) has been widely used to grow semiconductors thin films and heterostructures.

Combining MBE with scanning tunneling microscopy (STM) and angle resolved photoemission spectroscopy (ARPES), can even push its power to a new level of precision in material quality control.

In this talk, I would first show how the quantized anomalous Hall effect could be achieved by atomic-level control of band-engineered and magnetically doped topological insulators with MBE-ST-ARPES.

I then show how one can access the critical issues in the high temperature superconductivity of cuprates and iron-based pnictides in an unprecedented manner with this approach, which may allow us to eventually solve the pairing mechanism of unconventional high temperature superconductivity.

The author acknowledges the financial supports from National Science Foundation, and Ministry of Science & Technology and Ministry of Education of China.