



清华大学高等研究院

Institute for Advanced Study, Tsinghua University

物理学术报告

Physics Seminars (biweekly)

- Title:** Electric-field control of tri-state phase transformation with selective dual-ion switch
- Speaker:** Pu Yu
(*Department of Physics, Tsinghua University*)
- Time:** 4:00pm, Wednesday, June 21, 2017
(3:30~4:00pm, Tea, Coffee, and Cookie)
- Venue:** Conference Hall 322, Science Building, Tsinghua University

Abstract

Electric-field control of phase transformation with ion transfer is of great interest in materials science with enormous and important practical applications, such as batteries, smart windows, fuel cells, etc. Although increasing the number of the transport ion species and the corresponding controllable crystalline phases can greatly enrich the material functionalities, studies have so far targeted mainly on the evolution of only single ionic species (e.g. O^{2-} , H^{+} or Li^{+} , etc.). In this talk, I will report our recent progress on the reversible and nonvolatile electric-field control of dual-ion (O^{2-} and H^{+}) phase transformation associated with the discovery of the exotic tri-state electrochromic and magnetoelectric effects. These findings open up new opportunities for the electric-field control of multi-state phase transformation with novel crystalline structures and rich functionalities.