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Probing the Structure and Dynamic Behaviors of Nanostructured Materials with Atomic Resolution in Real Time

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时间：11月6日（星期四）15:00—16:30

地点：北京大学物理楼中212教室

Abstract: As advances in aberration-corrected transmission electron microscopy (TEM) have enabled the determination of the three-dimensional structure and local electronic properties of nanostructures with the sub-angstrom resolution, the recent development of in situ TEM techniques allows one to study the dynamic response of defects and interfaces to applied fields and changes in environments, while the atomic structure is imaged directly. In this talk, I will present our recent work on in situ TEM studies of the atomic structure, local electronic properties, and dynamic behaviors of nanostructured functional materials, including the nucleation and growth of ferroelectric domains during switching under applied electrical field or mechanical stress, oxidation/reduction of self-regenerating catalysts within a gas-reaction holder, and structural evolution of Li-ion battery materials induced by electrical field, and filament formation in resistance switching memories.

潘晓晴，密西根大学讲席教授（Richard F. and Eleanor A. Towner Professor of Engineering），国家千人计划南京大学特聘教授。潘晓晴教授长期从事电子显微学、薄膜生长、纳米材料和器件的制备与表征、表面与界面、半导体、高温超导、铁电材料与存储器、智能催化等方面研究，在揭示新型纳米结构的铁电性、透明氧化物半导体特性、超导薄膜材料的结构与性能的关系等方面取得许多国际有重要影响的研究成果。在《科学 (Science)》、《自然(Nature)》及子刊、PRL、Advanced Materials、Nano Letters等著名学术刊物上发表250多篇论文。获得美国科学基金会CAREER奖、中国自然科学基金委杰出青年基金奖（海外）、美国电子显微学会优秀论文奖、中国科学院海外杰出学者基金获、第六届国际多功能材料研讨会最佳演讲奖、南京大学新星奖等。潘晓晴教授是美国陶瓷学会、美国物理学会、美国显微学会会士（fellow）。

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