

Electrically Driven Dynamics in Complex Oxides

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The possibility to create short intense pulses of hard x-rays leads to a range of opportunities to study the non-equilibrium properties of complex oxide materials including ferroelectrics, superlattices, and multiferroics. The timescales for the relevant phenomena range from the microsecond and longer times associated with the motion of domain walls to picosecond-scale dynamics associated with piezoelectricity and acoustic phenomena. I will briefly describe these opportunities, using examples from our recent work with ferroelectric/dielectric superlattices and epitaxial ferroelectrics.