

Coupling Magnetism To Electricity In Multiferroic Heterostructures

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Complex perovskite oxides exhibit a rich spectrum of functional responses, including magnetism, ferroelectricity, highly correlated electron behavior, superconductivity, etc. The basic materials physics of such materials provide the ideal playground for interdisciplinary scientific exploration. Among the large number of materials systems, there exists a small set of materials which exhibit multiple order parameters; these are known as multiferroics. Our work so far has clearly demonstrated the possibility of reversible, electric field switching and control of the state and direction of magnetization. I will present our results to date.