

Reentrant Dipole Glass Properties in $(1-x)\text{BaTiO}_3 - x\text{BiScO}_3$, $0.1 \leq x \leq 0.4$

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Source: APPLIED PHYSICS LETTERS Volume: 100 Issue: 2 Article Number: 022906 DOI: 10.1063/1.3675861 Published: JAN 9 2012

Abstract: Dielectrics that provide higher electrostatic energy densities are urgently required for power electronic applications; recent observations in the solid solution of $(1-x)\text{BaTiO}_3-x\text{BiScO}_3$ show promise, and low temperature re-entrant dipole glass behavior is inferred. Here, direct observations of switchable polarization freezing in the reentrant dipole-glass $(1-x)\text{BaTiO}_3-x\text{BiScO}_3$, $0.1 \leq x \leq 0.4$ are reported. As the temperature is decreased, the switchable polarization increases rapidly, reaches a maximum value at the reentrant temperature ($T(R)$) before disappearing at low temperatures. With measurement electric field (E), the $T(R)$ is found to increase in $(1-x)\text{BaTiO}_3-x\text{BiScO}_3$, $0.1 \leq x \leq 0.4$, as a function of x .

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