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Non-local domain switching in ferroelectric nanostructures SEURI JEONG, KWANG-EUN KIM, CHAN-HO YANG, Korea Adv Inst of Sci Tech — Nanoscale ferroic materials have attracted considerable interest due to their novel properties including electronic, electromechanical and magnetoelectric properties. Until now, exotic ferroelectric structures have been described theoretically such as flux-closure domains, but experimental studies for ferroelectric multi-domains in nanostructures have been a lack of research due to their large domain wall energy. In this study, we realized the radial-quadrant domain structures using strain relaxation known as flexoelectricity. Moreover, we observed that local electric polarization switching can affect distant domain regions to minimize free energy. Our findings provide basic concepts to demonstrate and understand ferroelectric nano-scale multi-domain structures.

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