

Description of Additional supplementary files

Supplementary data 1: Crystal model of Pbam PbZrO_3

Supplementary data 2: Crystal model of R3c PbZrO_3 in Hexagonal axes

Supplementary data 3: Crystal model of R3c PbZrO_3 in Rhombohedral axes

Supplementary movie 1: NEB results of AFE-FE transition along 111

Supplementary movie 2: NEB results of AFE-FE transition along 110

Supplementary movie 3: NEB results of AFE-FE transition along 100

Supplementary movie 4: NEB results of AFE-FE transition along 1-10

Supplementary movie 5: Displacement test on device #1

Supplementary movie 6: Displacement test on device #2

Supplementary movie 7: 3-dimensional reciprocal space mapping around PbZrO_3 (111)

