Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary information

Superior energy storage performance, and fatigue resistance in ferroelectric BCZT thin films grown in oxygen rich atmosphere

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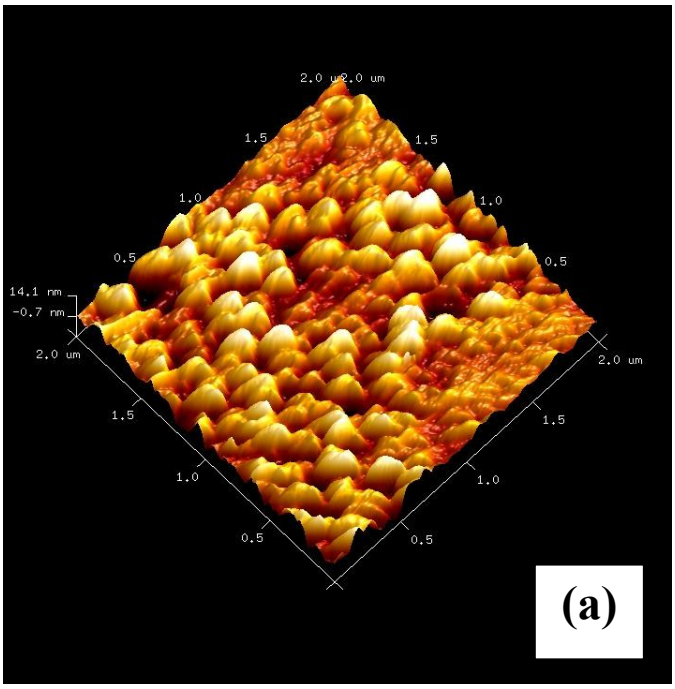
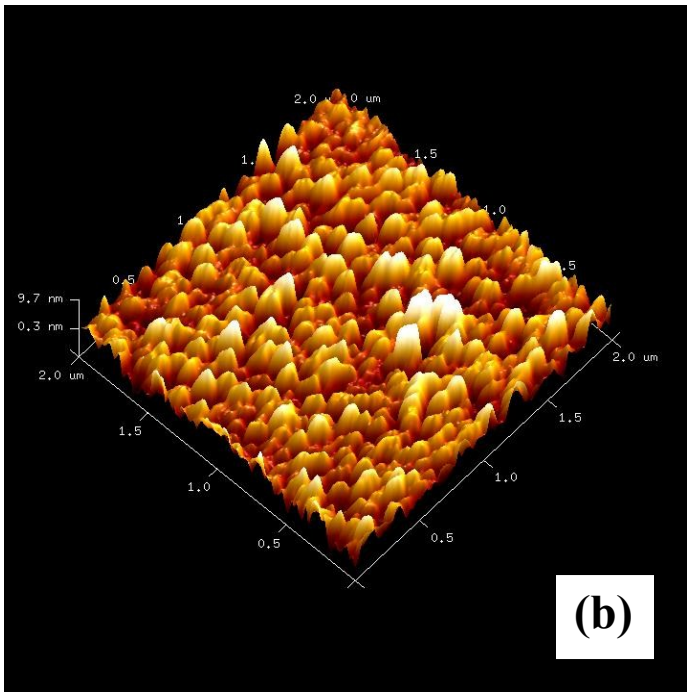
AFM images:





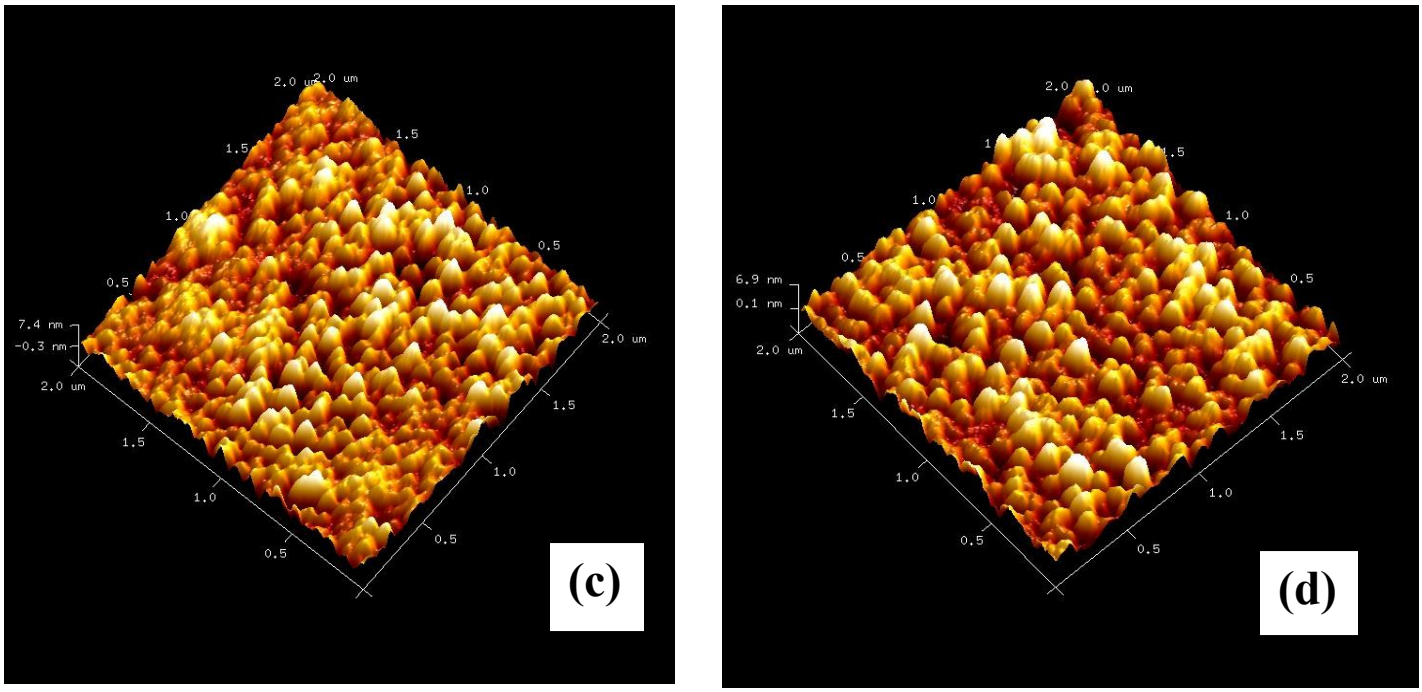


Figure S1. AFM images of (a) BCZT700-air, (b) BCZT800-air, (c) BCZT700-O_2 and (d) BCZT800-O_2 films.

Table S1. Ferroelectric properties of the air and oxygen processed BCZT films.

BCZT film	**P_{max} ($\mu C/cm^2$) at 1000 kV/cm**	**P_r ($\mu C/cm^2$) at 1000 kV/cm**	**Coercive field (kV/cm)**	**P_{max} ($\mu C/cm^2$) at 2000 kV/cm**	**P_r ($\mu C/cm^2$) at 2000 kV/cm**
BCZT700-air	70	22	222	---	---
BCZT800-air	82	25	185	---	---
BCZT700-O_2	58	4	49	87	11
BCZT800-O_2	73	5	45	106	12.9

Table S2. Polarization and energy storage properties of the oxygen-processed BCZT films recorded before and after fatigue test.

BCZT film	P_{max} ($\mu C/cm^2$) Virgin	P_r ($\mu C/cm^2$) Virgin	ESD (J/Cm^3) Virgin	Efficiency (%) virgin	P_{max} ($\mu C/cm^2$) fatigued	P_r ($\mu C/cm^2$) fatigued	ESD (J/Cm^3) fatigued	Efficiency (%) fatigued
BCZT700-O_2	87	11	54.5	68	85	12.5	50.6	63
BCZT800-O_2	106	12.9	64.8	73	105	13.2	63.6	71