

Fabrication of Aluminium Modified Bi₂O₃ Thin Film as a Transparent Conductive Oxide for Optoelectronic Applications

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Supporting Information

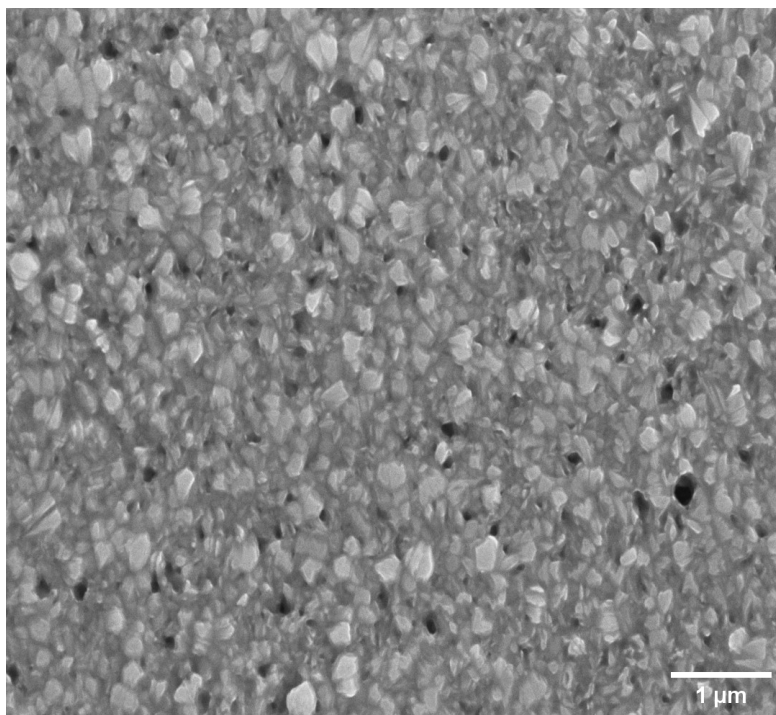


Fig. S1. FE-SEM investigation showing the morphology of Bare FTO substrate.

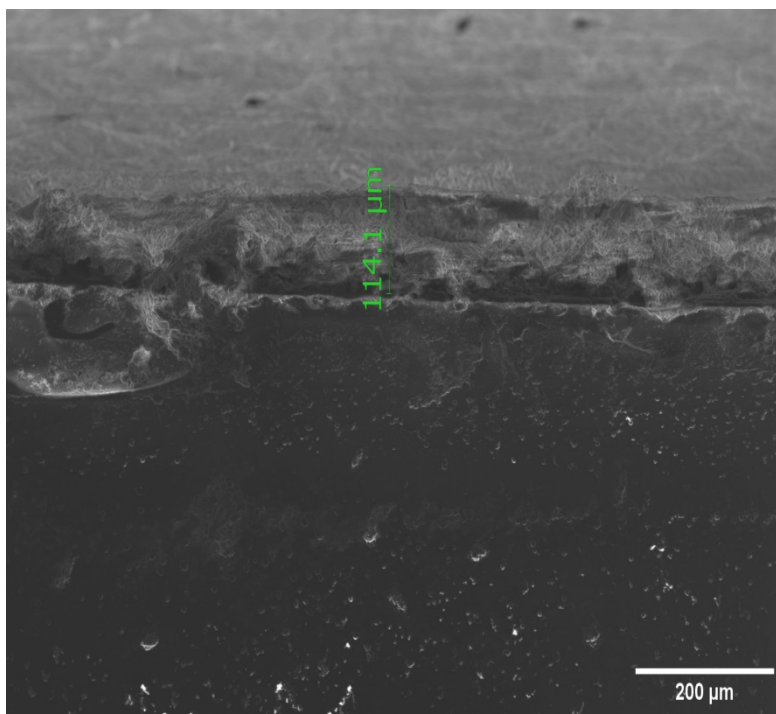


Fig. S2. Cross-sectional SEM investigation showing the thickness of deposited Al-Bi₂O₃ thin film.

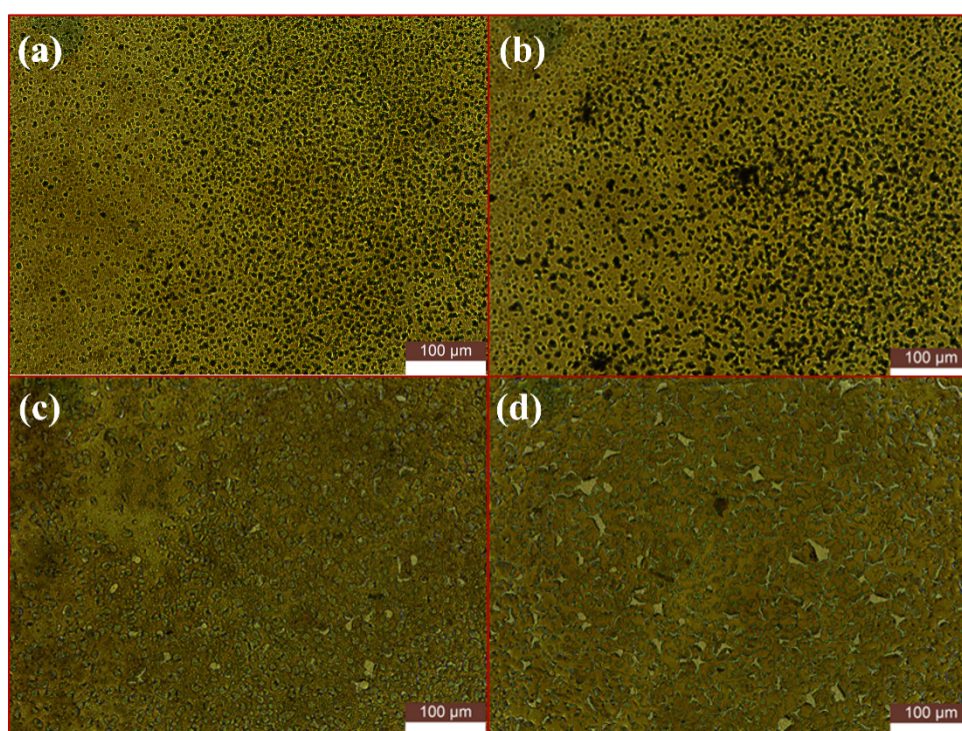


Fig. S3. Optical microscopic images of Al–Bi₂O₃ films electrodeposited in a potential window of -1.5 V to +1.8 V. As-deposited film of (a) 2 cycles, (b) 4 cycles, (c) 6 cycles, and (d) film assembled with 6 cycles and annealed at 400 °C.

Table S1. XRD crystal lattice table of deposited Al-Bi₂O₃ films.

(hkl)	Material	d-Spacing (Å)	2-Theta (degree)
(111)	Bi ₂ O ₃	3.25	27.3
(302)	Al ₂ O ₃	2.61	34.5
(305)	Al ₂ O ₃	2.29	38.6
(311)	Bi ₂ O ₃	1.71	52.3
(222)	Bi ₂ O ₃	1.62	55.3
(2213)	Al ₂ O ₃	1.52	62.3
(400)	Bi ₂ O ₃	1.43	66.2