Supporting Information

Seed Layer-assisted Chemical Bath Deposition of CuO Films on ITO-coated Glass Substrates with Tunable Crystallinity and Morphology

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Figure S1. SEM images of CuO films grown from lactate-free solutions, employing heating rates of: (a) 7.5 °C/min; (b) 5.5 ° C/min. (c) Measured solution temperature versus time profiles during CuO film growth for the films shown in panels (a) and (b).



Figure S2. Cross-sectional SEM images of CuO films deposited from solutions containing: (a) and (c) no lactate; (b) and (d) lactate/copper molar ratio = 1.0. The images were obtained using a sample tilt angle of 45° .

Lactate/Copper Molar Ratio	Film Mass/Area (mg/cm ²)	Film Thickness ^a (nm)	Calculated Film Density (g/cm ³)
0	0.74	1180	6.3
0.4	0.48	1100	4.4
1.0	0.29	992	2.9
1.2	0.17	879	1.9

Table S1. CuO Film Specific Mass, Thickness, and Calculated Density Values

^aMeasured by tapping mode atomic force microscopy.



Figure S3. Five successive cyclic voltammograms of a CuO film deposited from a solution containing no sodium lactate (Lac 0); measured in 1 M Na₂SO₄ electrolyte at 20 mV/s.



Figure S4. Five successive cyclic voltammograms of a CuO film deposited from a solution with a lactate/copper molar ratio of 1.0 (Lac 1); measured in 1 M Na₂SO₄ electrolyte at 20 mV/s.