## Self-textured ZnO *via* AACVD of alkyl alkoxides: A solution-based seed-less route towards optoelectronic-grade coatings.

## **SUPPORTING INFORMATION**

Clara Sanchez-Perez,<sup>1,2\*</sup> Sriluxmi Srimurugananthan,<sup>1</sup> Carlos Sotelo-Vazquez,<sup>3</sup> Sanjayan Sathashivam,<sup>1,4</sup> Mangyue Wang,<sup>1</sup> Javier Marugan,<sup>3</sup> Ivan P. Parkin,<sup>1</sup> Claire J. Carmalt.<sup>1\*</sup>

1. University College London, Department of Chemistry, 20 Gordon St, London WC1H 0AJ, UK.

- 2. Instituo de Energía Solar, Universidad Politécnica de Madrid, 28040 Madrid, Spain.
- 3. Department of Chemical and Environmental Technology (ESCET), Universidad Rey Juan Carlos, C/Tulipán s/n, Móstoles, 28933 Madrid, Spain.
- 4. School of Engineering, London South Bank University, London, SE1 0AA, UK



**Figure S1.** Schematic top-view representation of a (a) double-source and a (b) single-source AACVD configuration, both containing a blade element on the baffle to generate a laminar flow inside the reactor (blue arrows).



**Figure S2.** GIXRD patterns of ZnO thin films grown from EZI (top red) and EZI (bottom black) in toluene/isopropanol anhydrous solutions at 450 °C using a single-inlet AACVD configuration.



Figure S3. Picture of sections of ZnO thin film grown via AACVD of Zn(acac)<sub>2</sub> in MeOH at (a) 400 °C, (b) 450 °C and (c) 500 °C exhibiting increasing carbon contamination.



Figure S4. Schematic representation of nucleation, crystal growth and texture evolution during polycrystalline ZnO film deposition using AACVD of Zn(acac)<sub>2</sub> and DEZ solutions.



**Figure S5.** Schematic representation of nucleation, crystal growth and texture evolution during polycrystalline ZnO film deposition using AACVD of Zn(acac)<sub>2</sub> and DEZ solutions.