Note added after first publication: this version of the Electronic Supplementary Information published on 21st September 2020 replaces the original version published on 5th June 2017, to address errors in Fig. S1 (see Correction DOI: 10.1039/C9TA90268F for further details).

Electronic Supplementary Information (ESI) for

An Excellent Humidity Sensor based on In-SnO_2 Loaded Mesoporous Graphitic Carbon Nitride

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Fabrication and performance test of humidity sensors

The procedure for sensor fabrication and %RH sensing measurements was similar to that described in our earlier reported work.[1,2] In a typical experimental procedure, the ceramic substrate (13.4mm x 7mm x 0.5mm) consisting of 5 pairs of Ag-Pd interdigitated electrodes were utilized to measure humidity response. To prepare the sensors, a paste of 1:20 weight ratio of sample/ethanol was drop coated on the substrate (between the Ag-Pd tracks) using a 10 μL pipette, where after, the sample coated substrate was left for drying in oven for 2h at 60 °C to form a sensing film of thickness of ~10 μm. The humidity sensing experiments were performed at 25 °C in controlled %RH environments generated by using self made air-tight chambers containing saturated aqueous salts solution of high purity salts of LiCl (11 %RH), $MgCl_2 \bullet 6H_2O$ (33 %RH), $MgNO_3 \bullet 4H_2O$ (54 %RH), NaCl (75 %RH), KCl (84 %RH) and K_2SO_4 (98 %RH).[1] During the measurements, the sample coated substrate was put sequentially into the six chambers with different %RH for the uptake of water molecules and impedance changes were measured using a two-probe LCR Hitester (Hioki 3532-50). A 1V AC voltage with frequency ranging from 50 Hz to 5 kHz was applied. The effects of exposing the sensor to laboratory environmental conditions were minimized by quickly completing the chamber change process within 1 s.

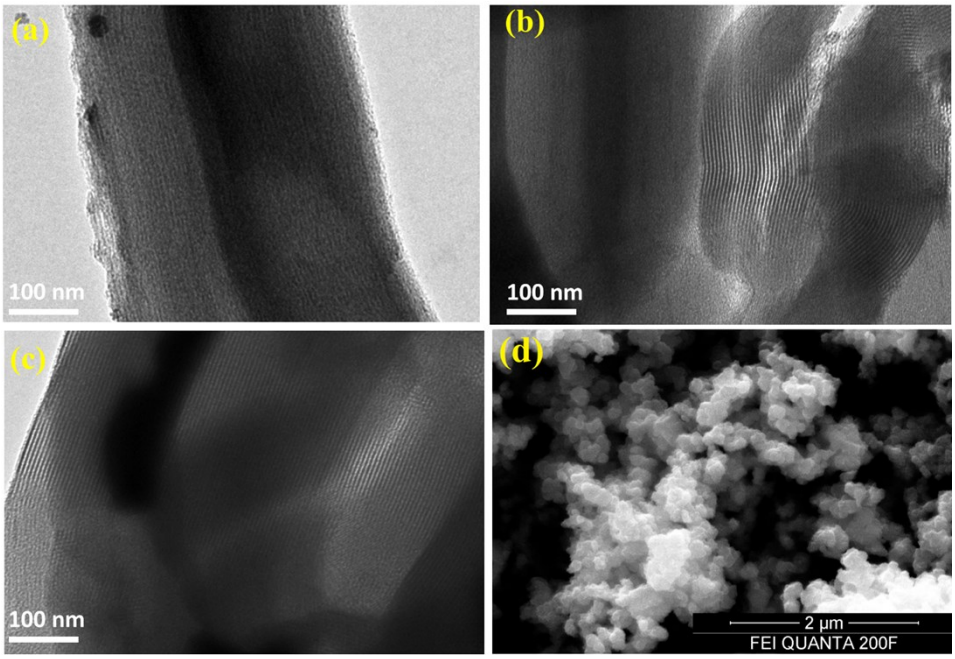

Figure S1: (a-c) Low resolution TEM image and **(d)** SEM image showing morphology and microstructure of nanocasted mesoporous In-SnO_2/meso-CN nanocomposite

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2. V. K. Tomer and S. Duhan, J. Mater. Chem. A, 2016, **4**, 1033–1043.