Supporting Information

Microstructural control of porous In$_2$O$_3$ powders prepared by ultrasonic-spray pyrolysis employing self-synthesized polymethylmethacrylate microspheres as a template and their NO$_2$-sensing properties

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To electric furnace (600-1100°C)

Ultrasonic irradiation (2.4 MHz)

Air flow No. 2 (1.5 dm³ min⁻¹)

Ultrasonic oscillator (Honda Electronics, HM-303N)

Air flow No. 1 (1.5 dm³ min⁻¹)

Precursor solution

Precursor mists generated by ultrasonic irradiation

Water at 20°C in beaker

Polystyrene film (ca. 10 µm thick)

Fig. S1. Schematic drawing of feeding system of an aqueous precursor solution atomized by ultrasonication (2.4 MHz).
Fig. S2. XRD spectra of representative pr-\(\text{In}_2\text{O}_3\)(Tp) powders as-prepared and after heat treatments at 550°C for 5 h, together with their crystallite size (CS).
Fig. S3. Nitrogen adsorption-desorption isotherms of pr-In$_2$O$_3$(600) and pr-In$_2$O$_3$(1100) powders as-prepared and after heat treatment at 550°C for 5 h, together with SSA.
Fig. S4. Cross-sectional SEM photographs of pr-In$_2$O$_3$(600), pr-In$_2$O$_3$(1100), and c-In$_2$O$_3$(1100) sensors, which were fabricated with single or triple stacking of the In$_2$O$_3$ film by screen printing. FT: thickness of the In$_2$O$_3$ films.