

## One-step synthesis, structure and band gap properties of SnO<sub>2</sub> nanoparticles made by a low temperature non-aqueous sol-gel technique

Mohamed Karmaoui,<sup>a,b\*</sup> Ana Belen Jorge,<sup>c</sup> Paul F. McMillan,<sup>d</sup> Abil E. Aliev,<sup>d</sup> Robert C. Pullar,<sup>a</sup> João António Labrincha,<sup>a</sup> David Maria Tobaldi<sup>a\*</sup>

***Dedicated to the memory of our friend and colleague, Dr Russell Binions***

<sup>a</sup> *Department of Materials and Ceramic Engineering/CICECO – Aveiro Institute of Materials, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro,*

*E-mail: [karmaoui@ua.pt](mailto:karmaoui@ua.pt); [david.tobaldi@ua.pt](mailto:david.tobaldi@ua.pt); [david@davidtobaldi.org](mailto:david@davidtobaldi.org)*

<sup>b</sup> *Département de Génie Chimique, Faculté de Chimie, Université des Sciences et de la technologie Mohamed-Boudiaf El Mnaouar, BP 1505, Bir El Djir 31000, Oran, Algérie.*

*E-mail: [karmaoui.mohamed@univ-usto.dz](mailto:karmaoui.mohamed@univ-usto.dz)*

<sup>c</sup> *Materials Research Institute, School of Engineering and Materials Science, Queen Mary University of London, Mile End Rd, London, E1 4NS, UK*

<sup>d</sup> *University College London, Christopher Ingold Building, 20 Gordon Street, London, WC1H 0AJ, UK*

**Electronic Supporting Information (ESI):**

**Figure S1.**  $^1\text{H}$  NMR spectrum of the filtered reaction solution measured in  $\text{CDCl}_3$  of the  $\text{SnO}_2$  nanoparticles.

**Figure S2.** Thermogravimetric analysis (TGA) of the  $\text{SnO}_2$  nanoparticle samples synthesised at different temperatures.

**Table S1.**  $^{13}\text{C}$  NMR chemical shift values for key organic species discussed in the text.

Figure S1

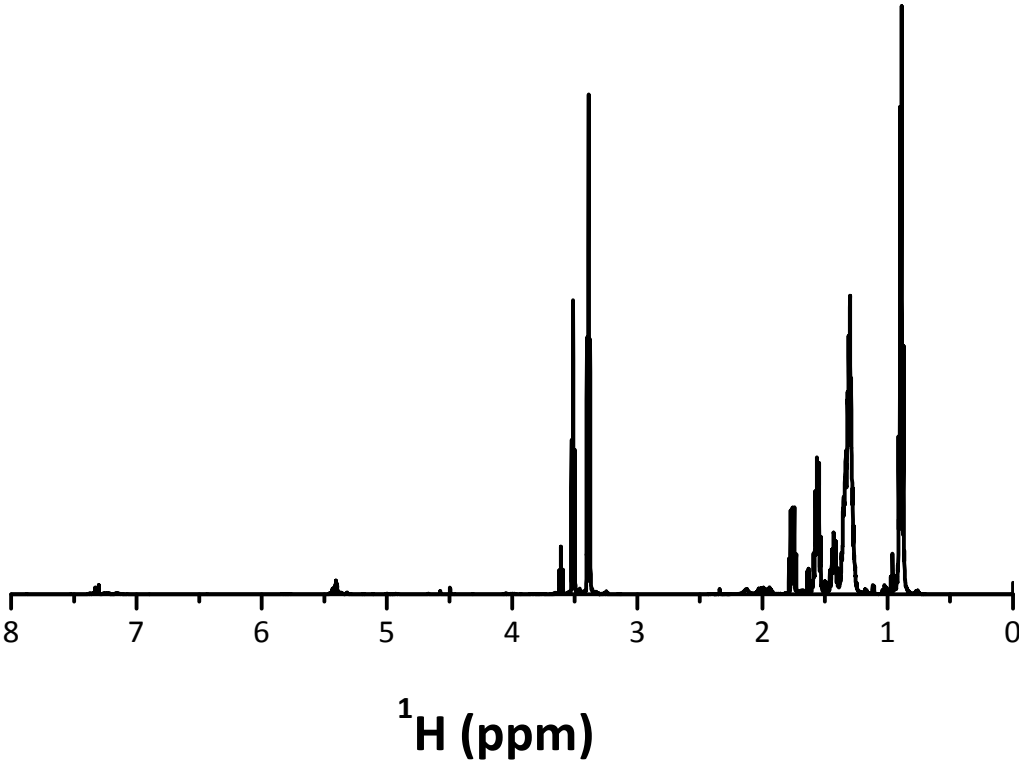


Figure S2

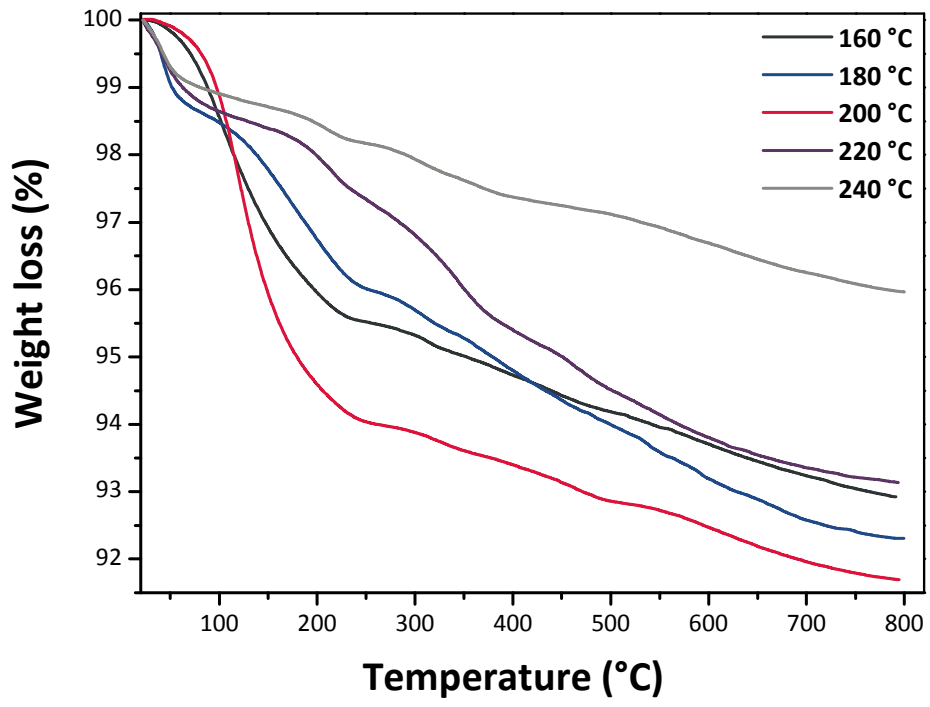


Table S1

	<b>Dihexyl ether</b>	<b>Hexyl alcohol</b>	<b>1-chlorohexane</b>
<b>1</b>	71.05	62.80	45.12
<b>2</b>	31.85	32.79	32.79
<b>3</b>	29.90	31.80	31.23
<b>4</b>	26.01	25.59	26.71
<b>5</b>	22.71	22.75	22.63
<b>6</b>	14.02	14.07	14.02