RSC Advances

SUPPORTING INFORMATION

Polymers of Intrinsic Microporosity as High Temperature Templates for the Formation of Nanofibrous Oxides

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

www.rsc.org/

H. Al Kutubi,[a,b] L. Rassaei,[b] W. Olthuis,[c] G. W. Nelson,[d] J. S. Foord,[e] P. Holdway,[f] M. Carta,[g] R. Malpass-Evans,[g] N. B. McKeown,[g] S. C. Tsang,[h] R. Castaing,[a] T. R. Forder,[a] M. D. Jones,[a] D. He,[a] and F. Marken*[a]

Supporting information are provided in the form of additional scanning electron micrographs and EDX elemental analysis for materials produced in the thermolysis reaction of $Pr(NO_3)_3$ embedded in polymers of intrinsic microporosity.

Figure SI1 shows scanning electron micrographs for products formed on ITO substrates for the deposition of (A) 4:1, (B) 2:1, and (C) 1:1 weight ratio of PIM-EA-TB and $Pr(NO_3)_3$ followed by calcination at 500 °C in air. The fibrous appearance and nano-structure appears to be not strongly affected by the initial ratio of PIM-EA-TB to $Pr(NO_3)_3$. Additional EDX data in Figure SI1D demonstrate the presence of Pr and oxygen in addition to In/Sn/Si from the substrate. The data are consistent with the presence of Pr_6O_{11}. Although further bulk elemental analysis would be required to confirm impurity and doping effects as well as phase purity for these materials.

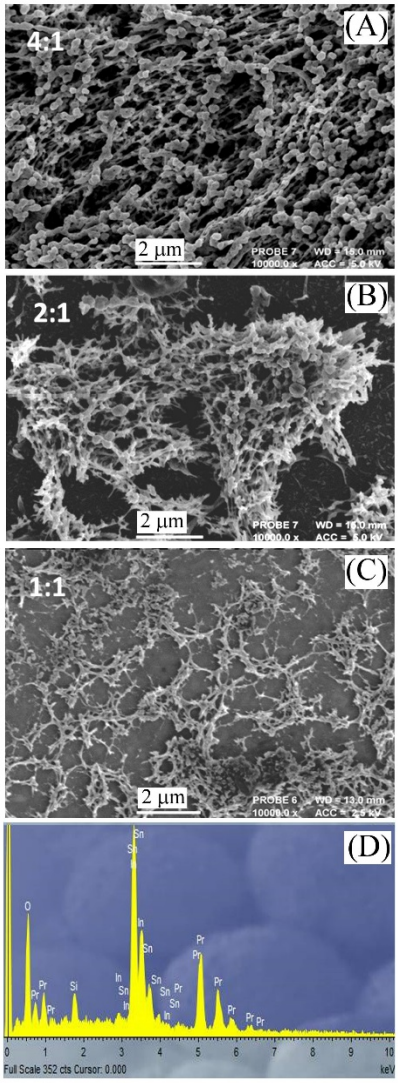

Figure SI1. Scanning electron micrographs for thermolysis products (10-layer on ITO) employing PIM-EA-TB : $Pr(NO_3)_3$ in weight ratio (A) 4:1, (B) 2:1, and (C) 1:1. Also shown in (D) is the EDX elemental analysis for the 1:1 praseodynium oxide film.

[a] Remi Castaing, Dr. Thomas R. Forder, Dr. Matthew D. Jones, Dr. Daping He, Prof. Frank Marken, Department of Chemistry, University of Bath, Claverton Down, Bath BA2 7AY, UK. Email f.marken@bath.ac.uk.
[b] Hanan Al Kutubi, Dr. Liza Rassaei, Department of Chemical Engineering, Delft University of Technology, Delft, The Netherlands.
[c] Dr. Wouter Olthuis, BIOS/Lab-on-a-Chip group,University of Twente, PO Box 217, 7500 Enschede, The Netherlands.
[d] Dr. Geoffrey W. Nelson, Imperial College London, Department of Materials, Royal School of Mines, Exhibition Road, London, SW7 2AZ, UK.
[e] Prof. John S. Foord, Chemistry Research Laboratories, Oxford University, South Parks Road, Oxford OX1 3TA, UK.
[f] Dr. Philip Holdway, Department of Materials, Begbroke Science Park, Sandy Lane, Yarnton, Oxford, OX5 1PF, UK.
[g] Dr. Mariolino Carta, Richard Malpass-Evans, Prof. Neil B. McKeown, School of Chemistry, University of Edinburgh, West Mains Road, Edinburgh, EH9 3JJ, UK.
[h] Prof. Shik Chi Tsang, Inorganic Chemistry Laboratory, University of Oxford, South Parks Road, Oxford OX1 3QR, UK.