Supplementary Material (ESI) for Journal of Materials Chemistry

Systematic tuning of pore morphologies and pore volumes in macroporous materials by freezing

Lei Qian,[†] *Adham Ahmed,*[†] *Alison Foster,*[‡] *Steve P. Rannard,*[†,‡] *Andrew I. Cooper,*[†] *and Haifei Zhang**[,†]

[†]Department of Chemistry, University of Liverpool, Crown Street, Liverpool, L69 3BX, United Kingdom, [‡]IOTA NanoSolutions Ltd., MerseyBio, Crown Street, Liverpool, L69 7ZB, United Kingdom. Email: zhanghf@liv.ac.uk

Electronic Supporting Information

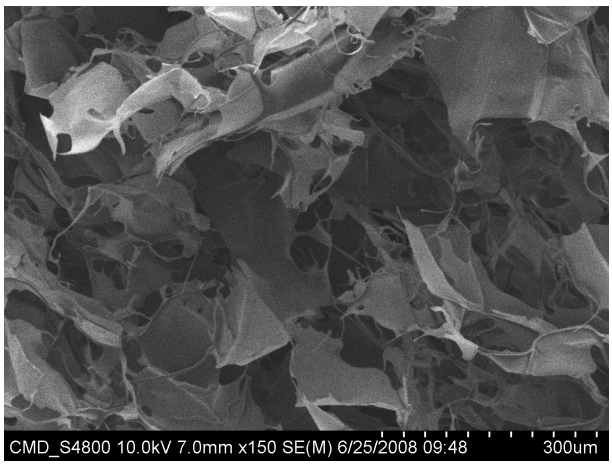

Fig. S1 The random porous structure of SCMC by freezing a 1wt % SCMC aqueous solution in a freezer and then freeze drying.

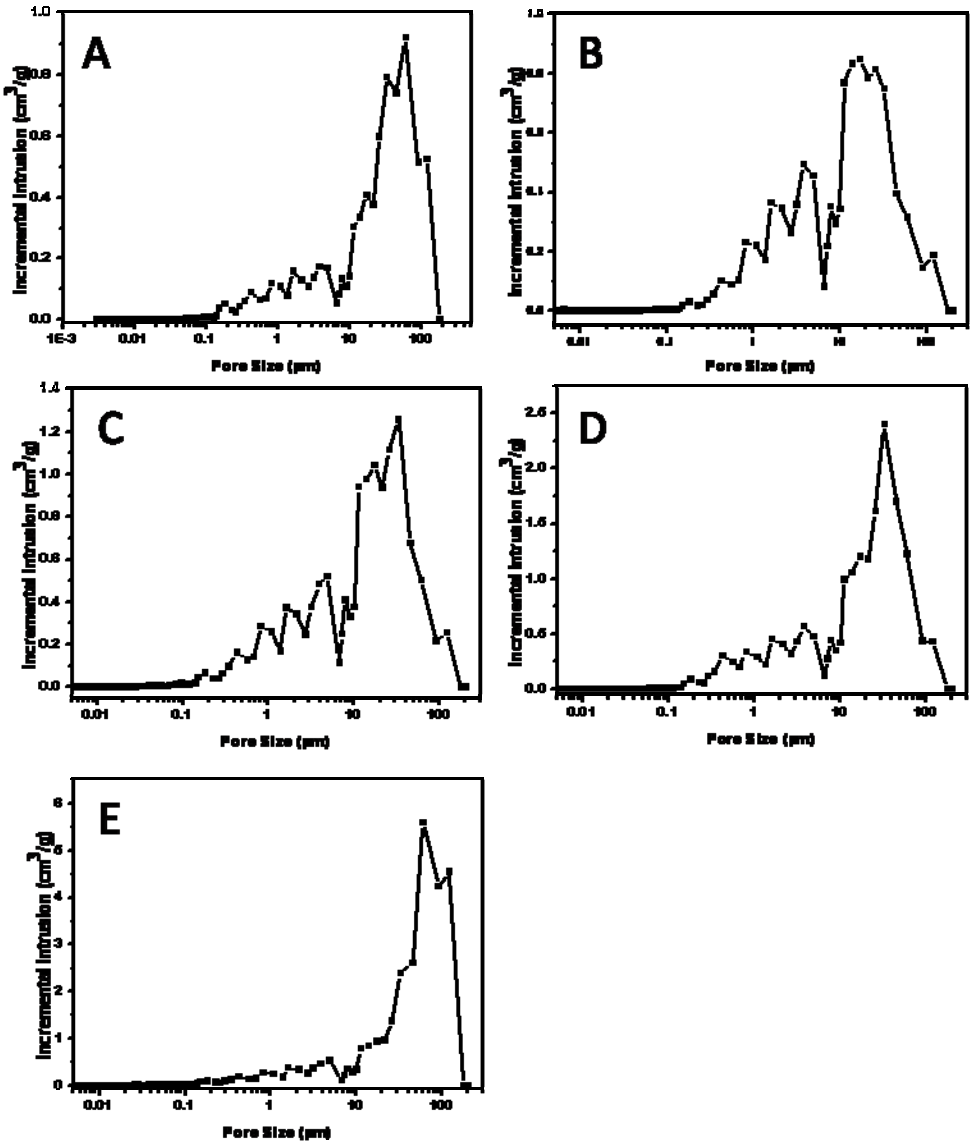

Fig. S2 Pore size distribution of emulsion-templated porous SCMC as measured by mercury intrusion porosimetry at different volume percentage of internal phase in the emulsions. (A) 0 v/v %. (B) 20 v/v %. (C) 40 v/v %. (D) 60 v/v %. (E) 75 v/v %.

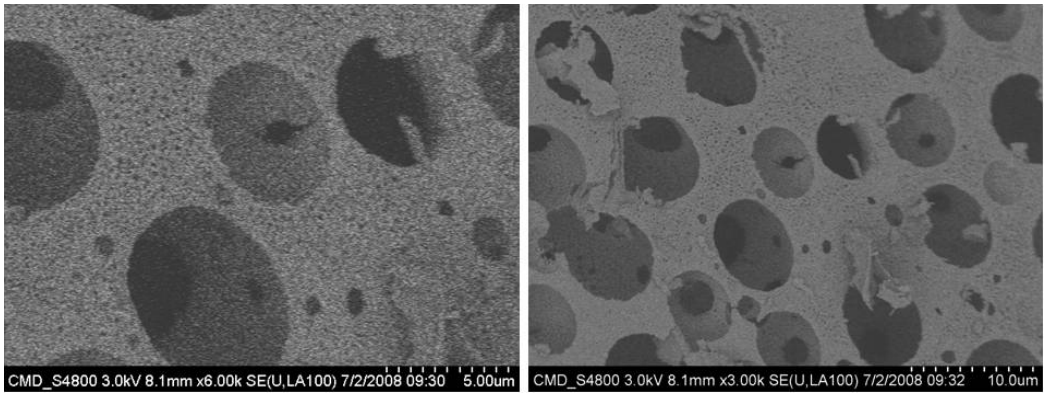

Fig. S3 The porous surface of silica beads calcined from PVA-HS30 beads.

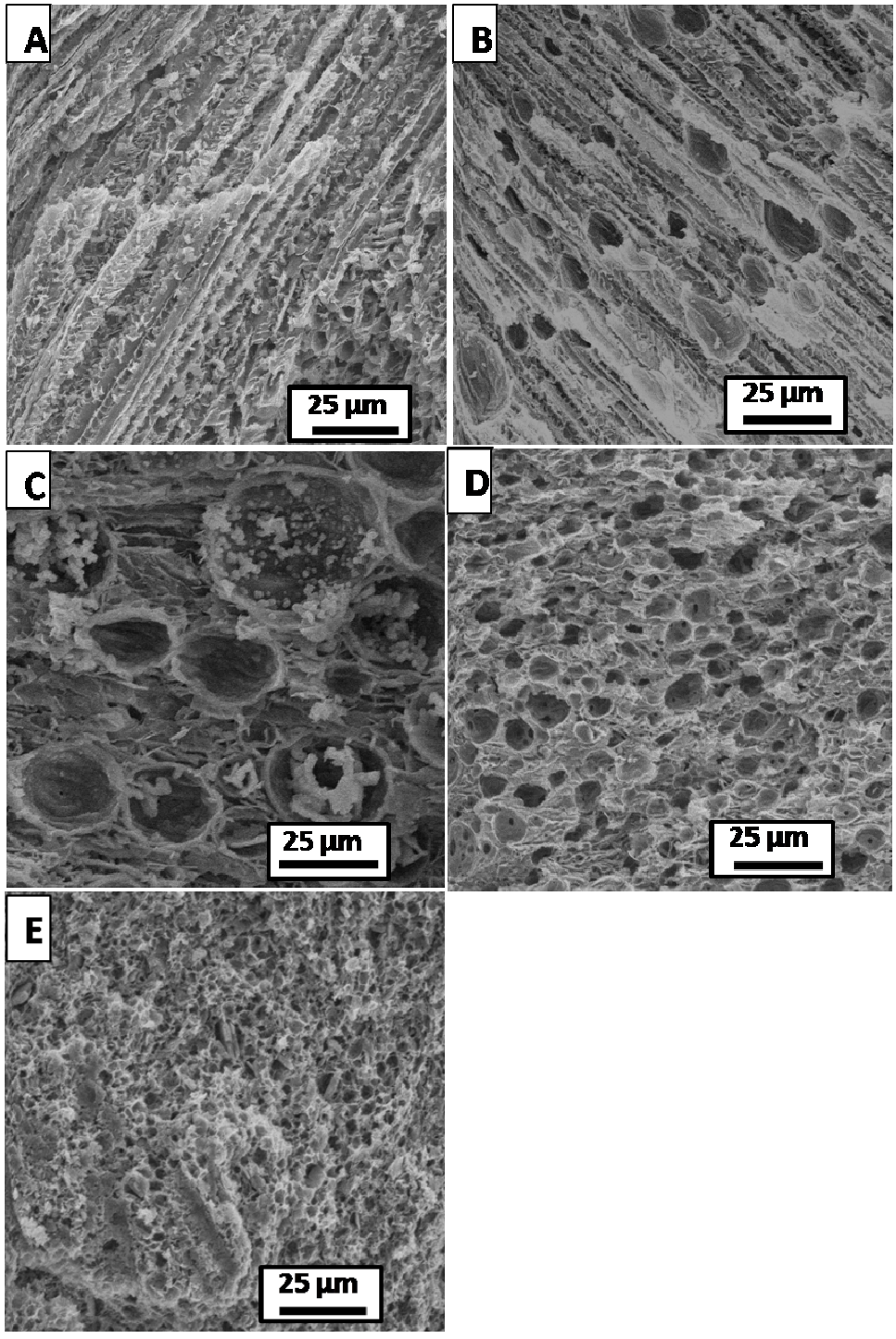

Fig. S4 Porous zirconia/PVA composites with tuned pore morphology and porosity, prepared from emulsion-templated PVA beads. (A) 0 v/v %. (B) 20 v/v. (C) 40 v/v %. (D) 60 v/v. (E) 75 %.