Electronic Supplementary Material (ESI) for Dalton Transactions.

Electronic Supplementary Information (ESI)

Electrospun ZrO_2 Nanofibers: Precursor Controlled Mesopore Ordering, and Evolution of Garland-Like Nanocrystal Arrays

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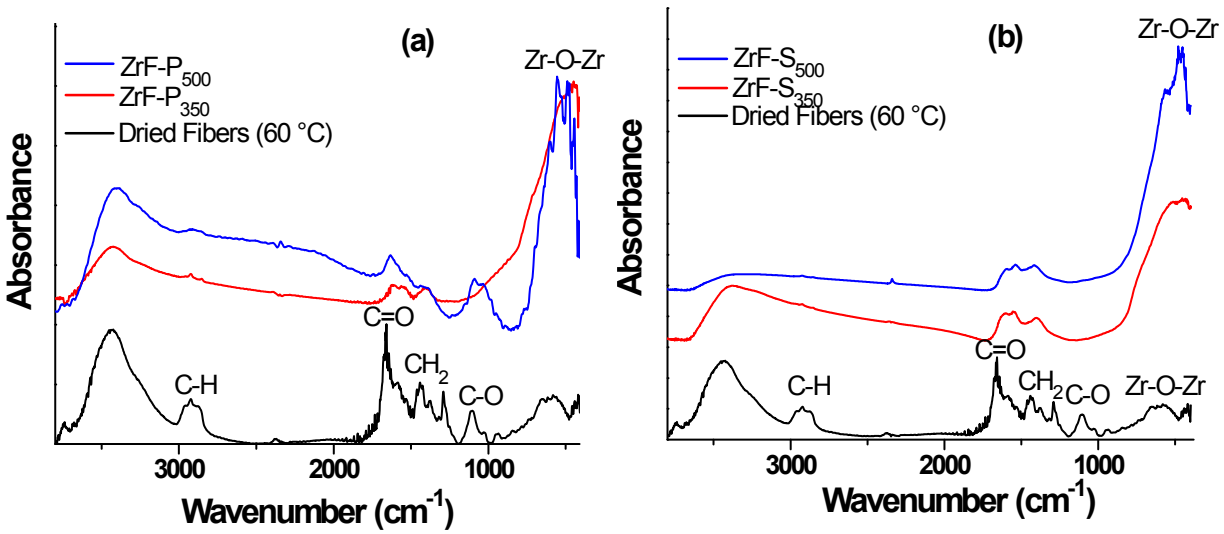

Fig. S1 FTIR spectral analysis of dried and heat-treated ZrO_2 fibers: (a) ZrF-P (b) ZrF-S.

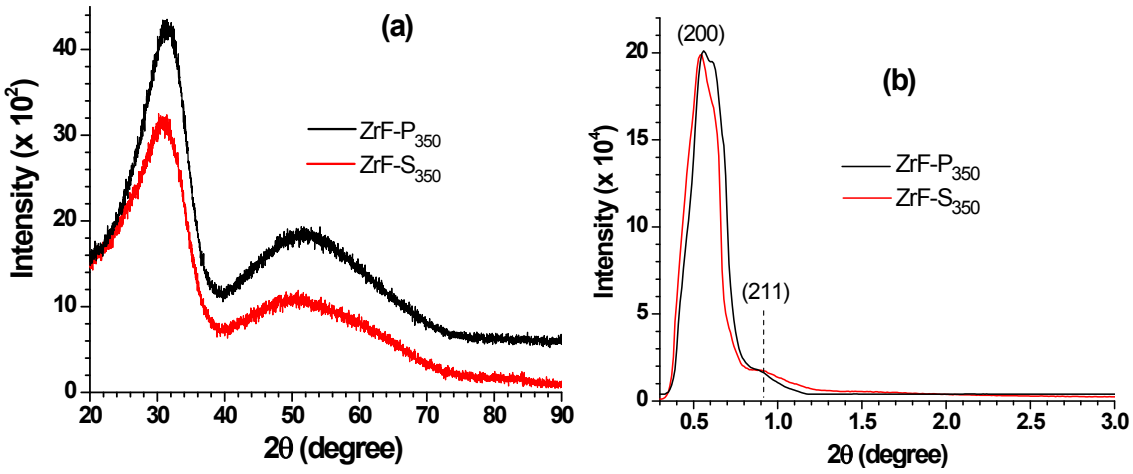

Fig. S2 (a) High and (b) low angle XRD patterns of ZrO_2 fibers heat-treated at 350 °C ($ZrF\text{-}P_{350}$ and $ZrF\text{-}S_{350}$).

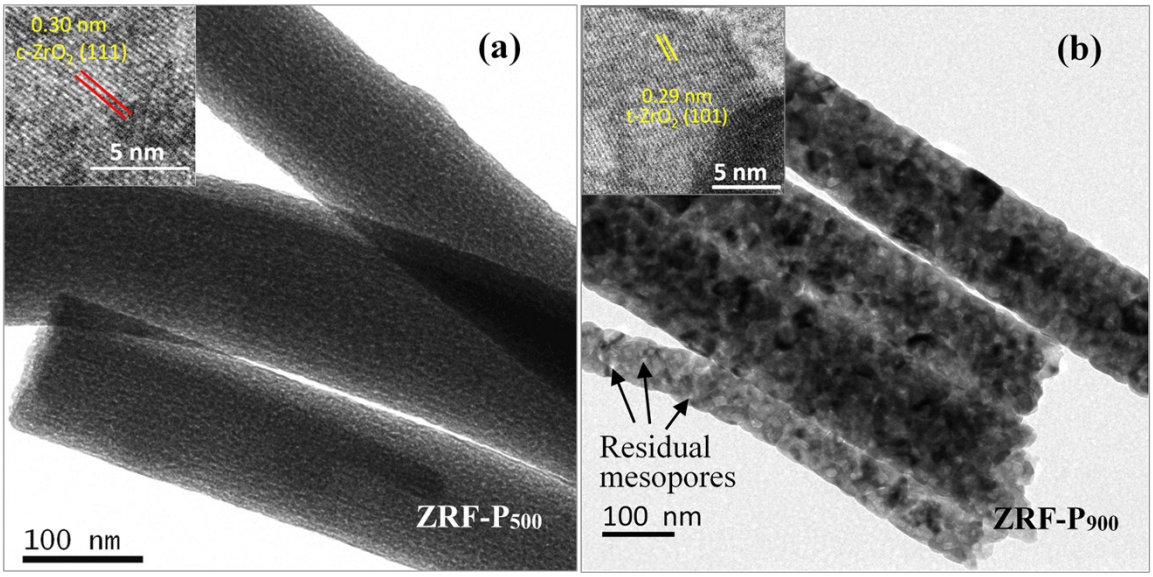

Fig. S3 TEM analysis of (a) $ZrF\text{-}P_{500}$ and (b) $ZrF\text{-}P_{900}$ showing the disordered mesopores and the collapse of mesoporosity due to random crystal growth on heat-treatment, respectively. Insets of (a) and (b) showing HRTEM image acquired from the fiber samples.

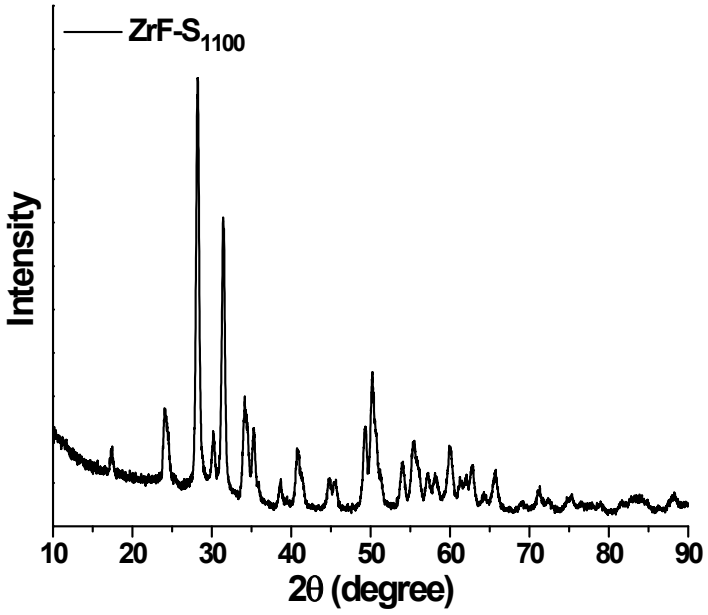

Fig. S4 XRD pattern of ZrF-S_{1100} shows formation of monoclinic ZrO_2 phase after heat-treatment at 1100 °C.

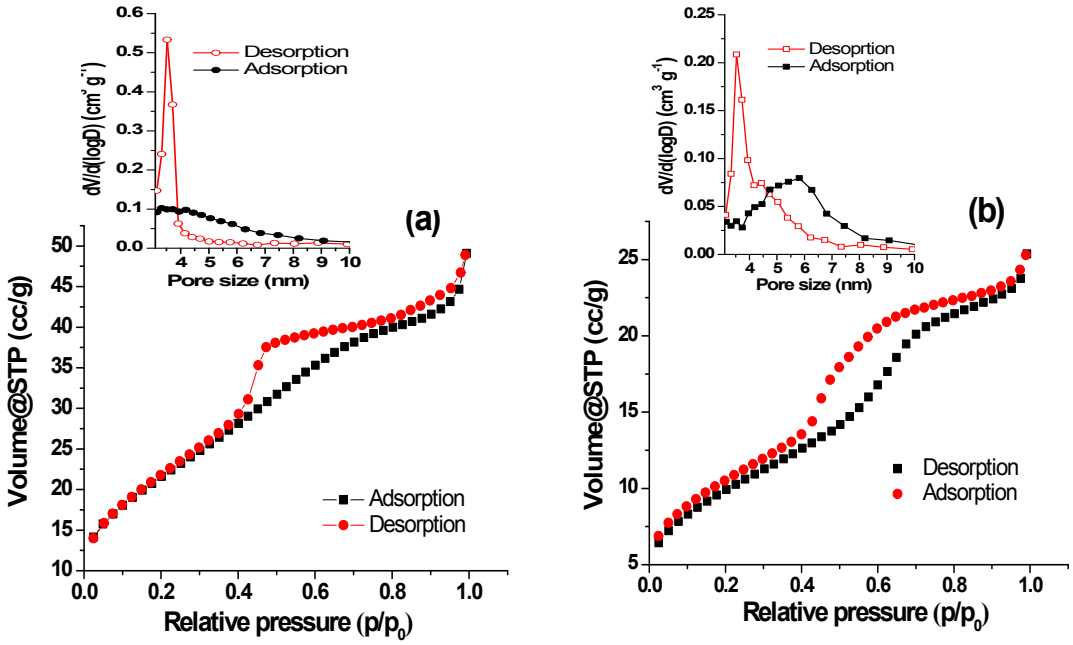

Fig. S5 N_2 sorption analysis of mesoporous ZrO_2 fibers (a) ZrF-P_{500} and (b) ZrF-S_{500}, respectively heat–treated at 500 °C. The insets of the figures show the pore size distributions.

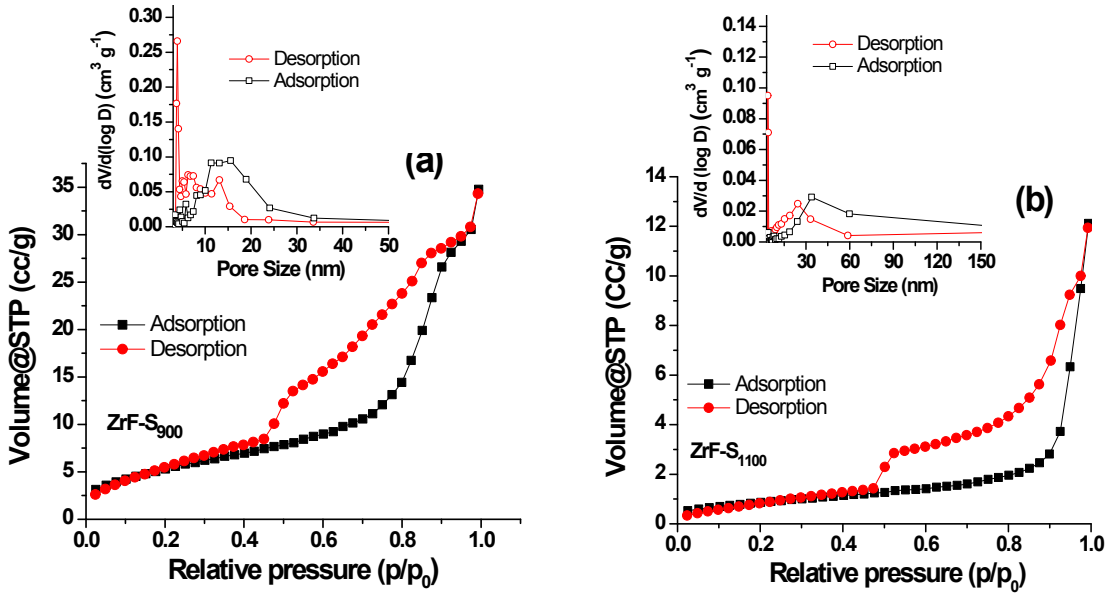

Fig. S6 N_2 sorption analysis of (a) ZrF-S_{900} and (b) ZrF-S_{1100} heat–treated at 900 and 1100 °C, respectively. The insets show the pore size distributions.