Supporting Information

Fabrication of Mesoporous Polystyrene Films with Controlled Porosity and Pore Size by Solvent Annealing for Templated Syntheses

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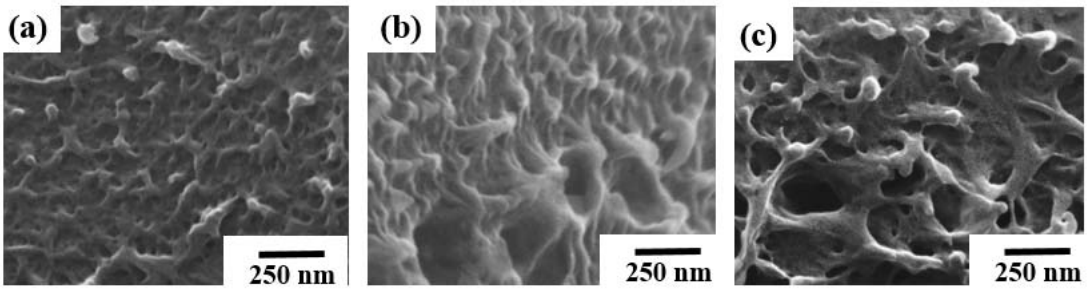

Figure S1. Morphological evolution of PS films during DMF vapor annealing process at saturation vapor pressure. The SEM images of PS films quenched at different stages of solvent vapor annealing for (a) 5 min, (b) 30 min and (c) 60 min, respectively.

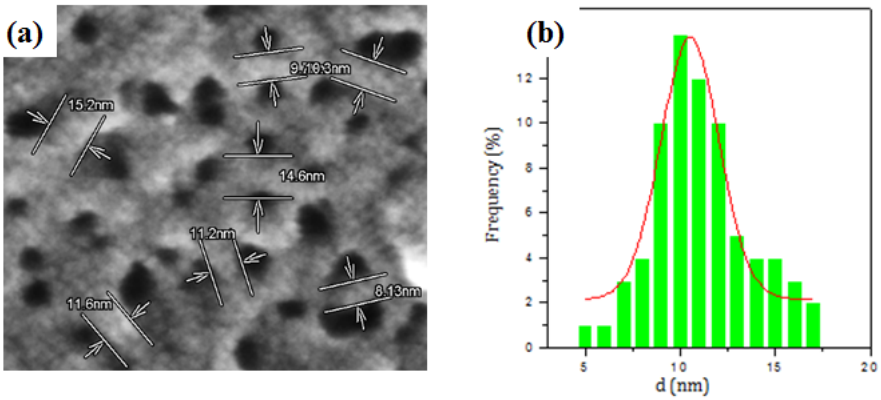

Figure S2. Framework size determination of mesoporous PS film. (a) SEM image of mesoporous PS film prepared under solvent uptake of 24% and annealing for 5 min. (b) the corresponding framework size histogram. A similar approach has been used to evaluate the framework sizes of the mesoporous PS films prepared under other experimental conditions.

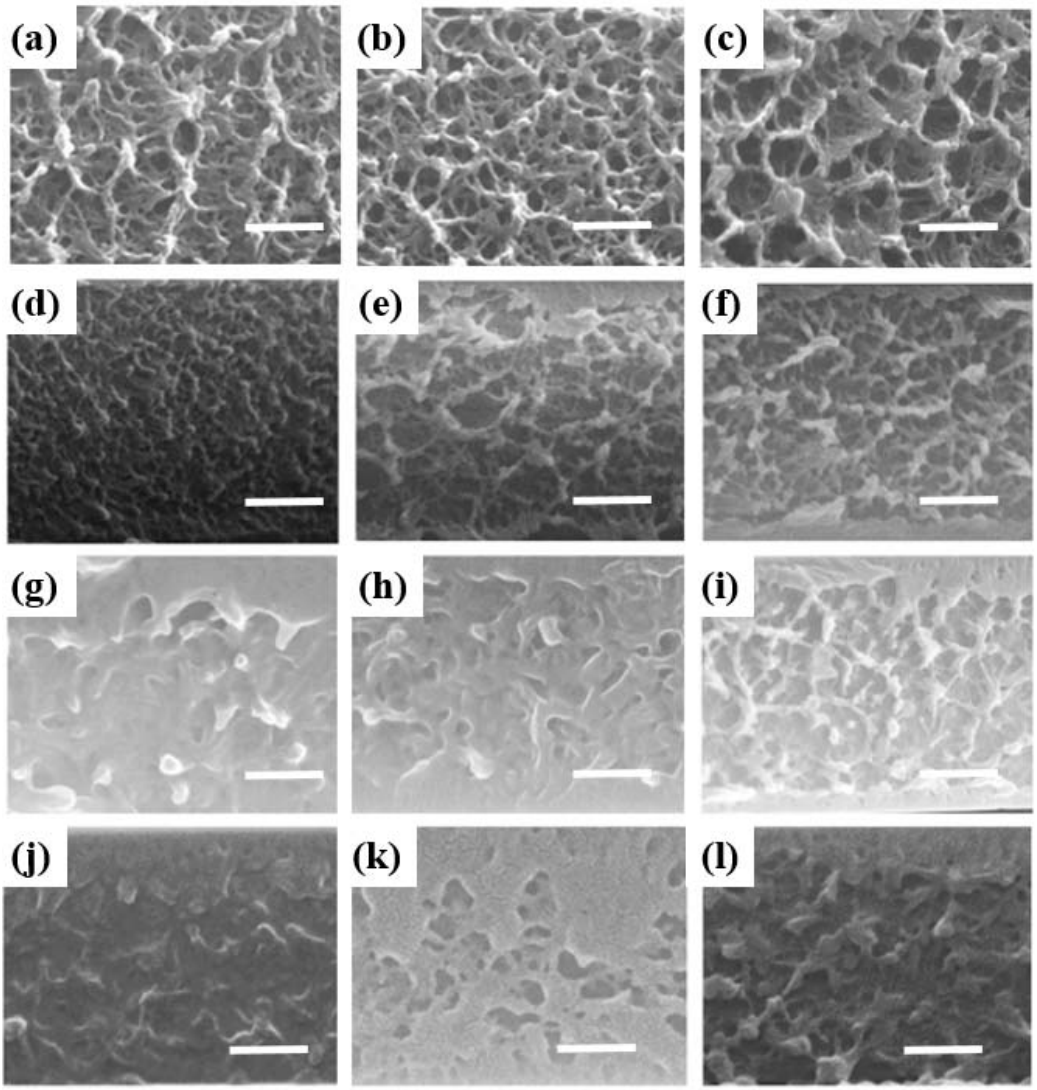

Figure S3. SEM images of the mesoporous PS film prepared with various solvent uptake and different annealing time. (a) solvent uptake of 38% and annealing for 5 min; (b) 38%, 30 min; (c) 38%, 60 min. (d) 24%, 5 min; (e) 24%, 30 min; (f) 24%, 60 min; (g) 12%, 5 min; (h) 12%, 30 min; (i) 12%, 60 min; (j) 6%, 5 min; (k) 6%, 30 min; (l) 6%, 60 min. Scale bar: 200 nm.

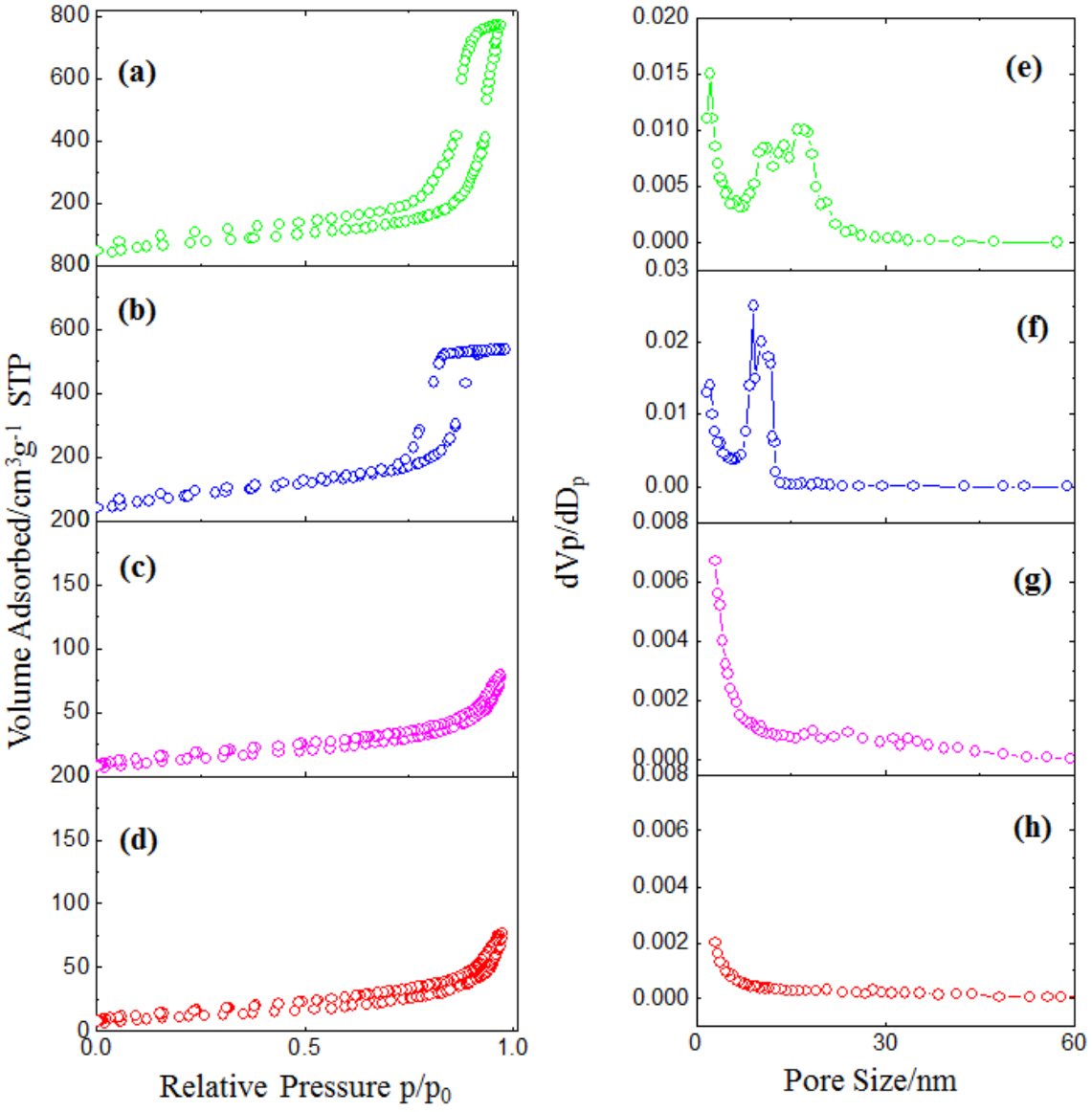

Figure S4. N_2 sorption isotherms (a-d) and BJH analyses (e-h) of mesoporous PS films prepared under different solvent uptake conditions of 38% (a and e); 24% (b and f); 12% (c and g) and 6% (d and h).

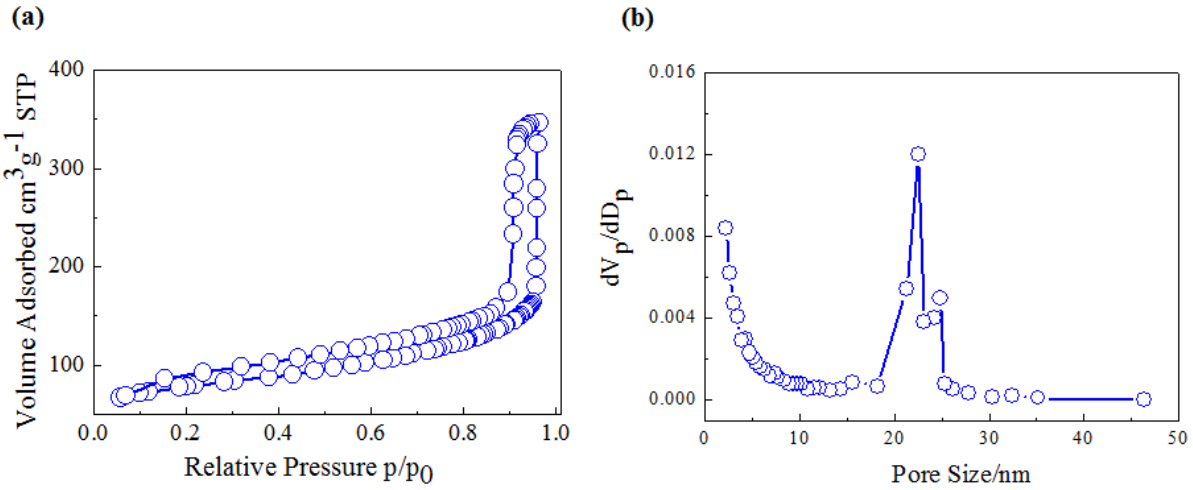

Figure S5. N_2 sorption isotherms (a) and BJH analyses (b) of mesoporous SiO_2 prepared by templated synthesis using sol-gel technique with fabricated mesoporous PS as a template material.