Electronic Supplementary Information

Conformal and Non-conformal Surface Modification of Honeycomb-Patterned Porous Films via Tunable Cassie-Wenzel Transition

Qi-Zhi Zhong[†], Xiang Yu[†], Ming-Xu Cui[†], Ling-Shu Wan[*†‡], Zhi-Kang Xu[†‡]

[†]MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

[‡]Key Laboratory of Adsorption and Separation Materials & Technologies of Zhejiang Province, Hangzhou 310027, China

*Corresponding author. Fax: +86 571 87951592; Tel: +86 571 87953763; E-mail: lswan@zju.edu.cn.

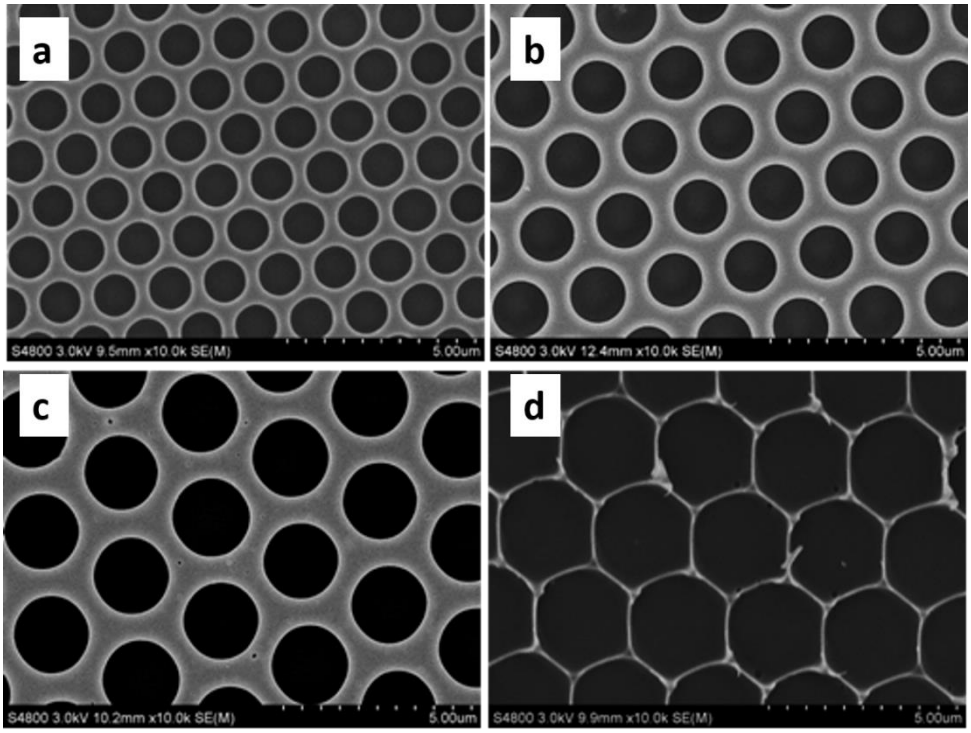

Fig. S1 Top-down SEM images of honeycomb films with (a) small pore size (pore diameter is 1.12 μm and the porosity is 50.6%), (b) moderate pore size (pore diameter is 1.51 μm and the porosity is 43.1%), and (c) large pore size (pore diameter is 2.19 μm and the porosity is 49.1%). (d) Pincushion-like surface fabricated from the honeycomb film with moderate pore size.

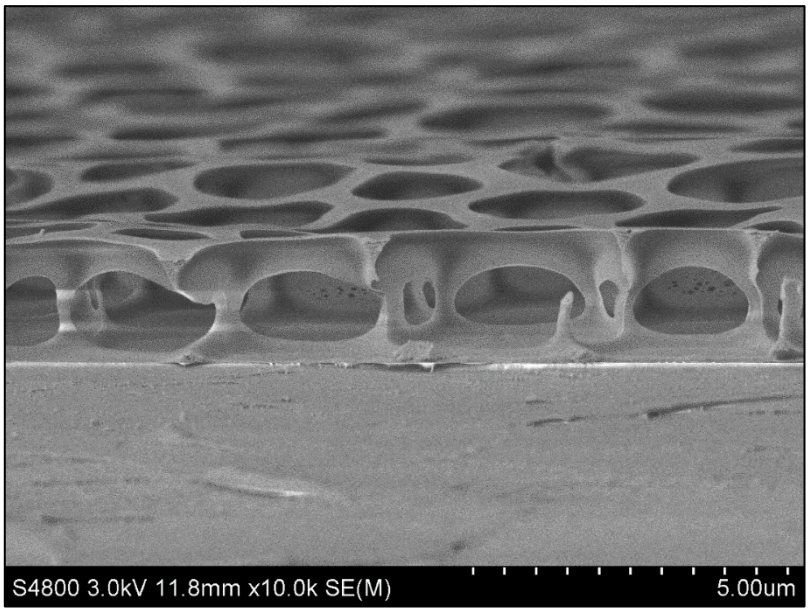

Fig. S2 Cross-section SEM images of honeycomb films in which there are connected pores.

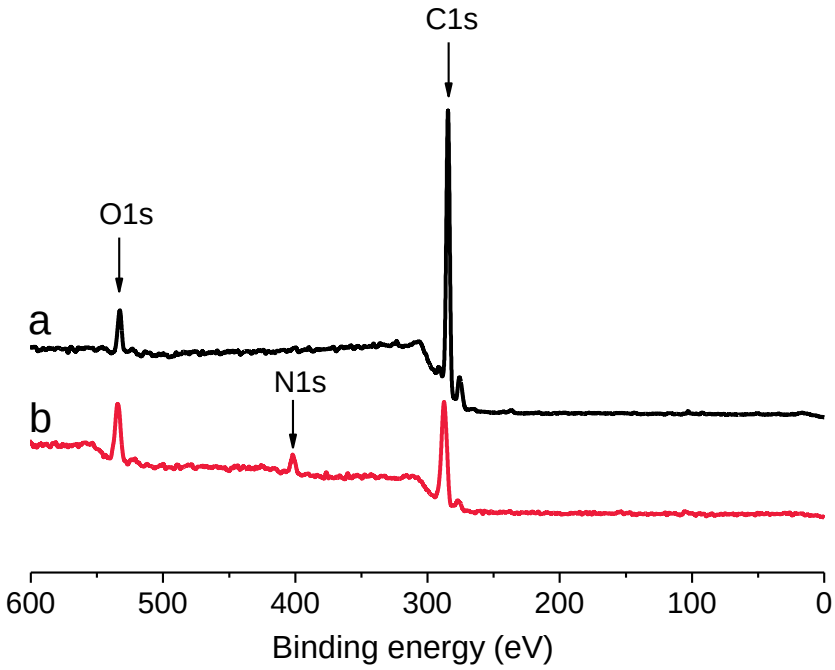

Fig. S3 XPS spectra of nascent (a) and PDA/PEI coated honeycomb films (b).

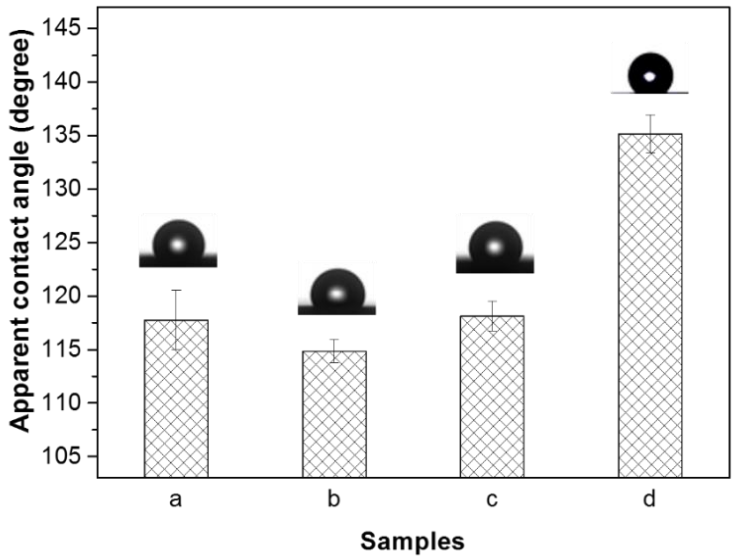

Fig. S4 Apparent water contact angles on honeycomb films with (a) small, (b) moderate, and (c) large pore sizes, and (d) pincushion-like surface fabricated from the honeycomb film with moderate pore size.

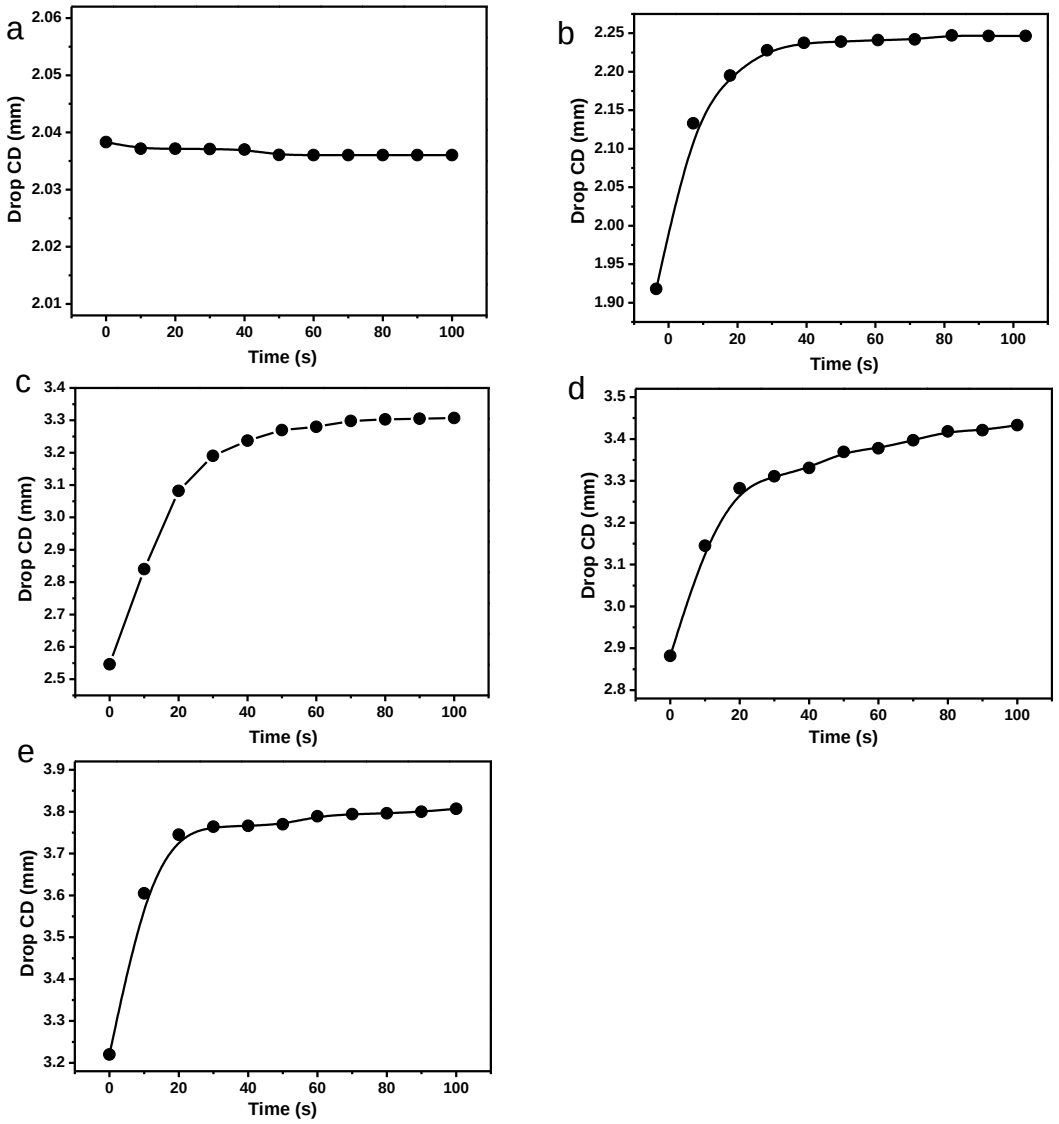

Fig. S5 Effects of co-deposition time on drop CD. Dopamine/PEI = 2/1 mg/mL. (a-e) films with deposition time 0, 6, 12, 18, and 24 hours, respectively.