# Morphology and wettability control of honeycomb porous films of amphiphilic fluorinated pentablock copolymers via breath figure method

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## Materials

Poly (ethylene glycol) ($PEG_{2000}$) and Trifluoroethyl methacrylate (TFEMA) were purchased from Aldrich, Methyl methacrylate (MMA), Triehtylamine (TEA) and CuCl were purified according to the method reported in preceding studies.[1] The chemical reagents, 2-bromopropiomyl bromide(2-BPB), N，N，N′，N′，N″-pentamethyldiethylenetriamine (PMDETA), 4-dimethylamiopryidine (DMAP), were used as received without purification. Solvents were dried by standard process.

## Polymerization Process

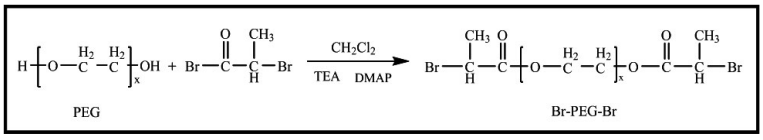


Figure S1. The process for synthesis of Br-PEG-Br.

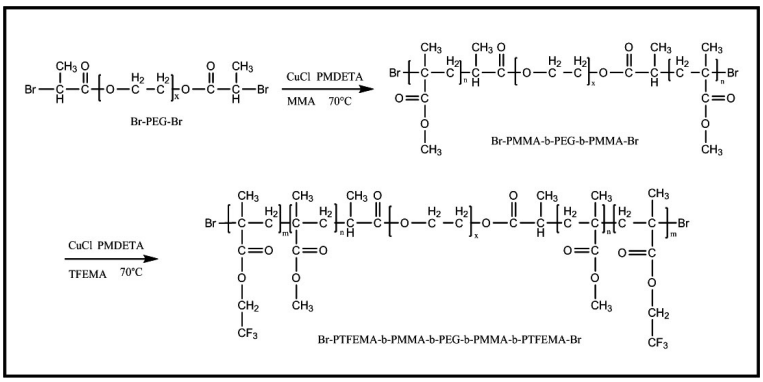


Figure S2. The process for synthesis of PTFEMA-*b*-PMMA-*b*-PEG-*b*-PMMA-*b*-PTFEMA pentablock copolymer.

## Results

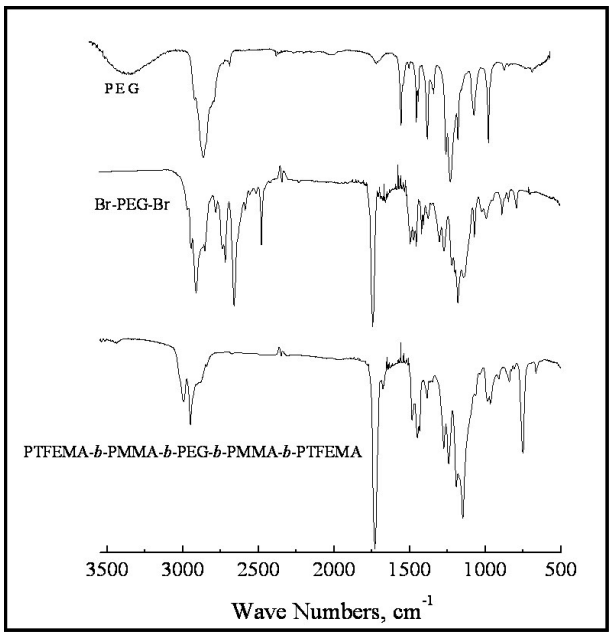


Figure S3. The FTIR spectra of the PEG, Br-PEG-Br and the pentablock copolymer.

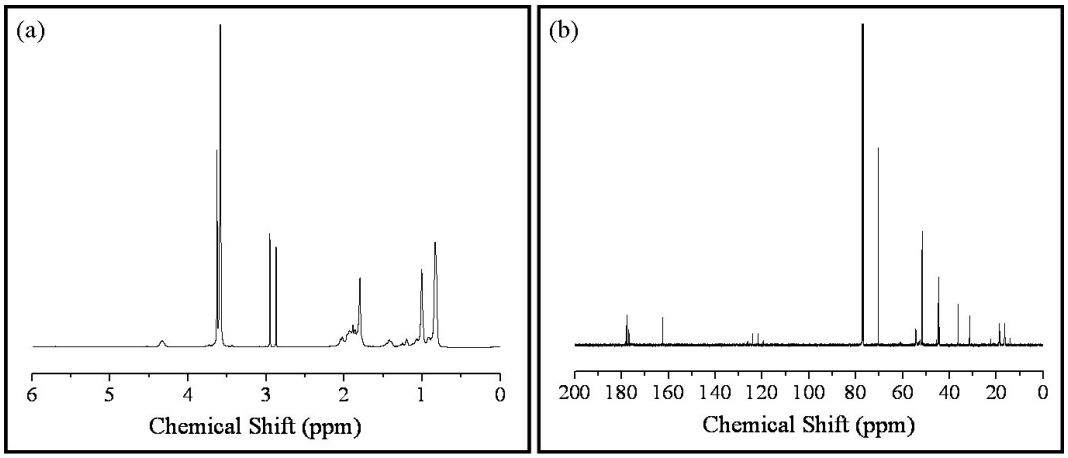


Figure S4. Spectra of the pentablock copolymers measured in $CHCl_3$. (a) $^{1}H$ NMR, (b) $^{13}C$ NMR

## Reference

1. Chen, W.-H.; Liaw, D.-J.; Wang, K.-L.; Lee, K.-R.; Lai, J.-Y. Polymer 2009, 50, (22), 5211-5219.