Supplementary Material (ESI) for Chemical Communications

Supporting Information

Charge-induced Local Dewetting on Polymer Electrets Studied by Atomic Force Microscopy

Dan Zhao,[a] ‡ Jiaxi Peng,[a] ‡ Xiaofeng Tang,[a] DongDong Zhang, [b,c] Xiaohui Qiu,[b] Yanlian Yang,[b] Yapei Wang,[a] Meining Zhang,*[a] Li Guan*[a], Tingbing Cao

[a] *Department of Chemistry, Renmin University of China, Beijing 100872, P.R. China.* [b] *Key Laboratory of Standardization and Measurement for Nanotechnology (Chinese Academy of Sciences), National Center for Nanoscience and Technology, Beijing 100190, P. R. China*

[c] *Department of Policing Intelligence, China Criminal Police University, Shenyang 11085, P.R. China.*

‡ These two authors contribute equally to this paper

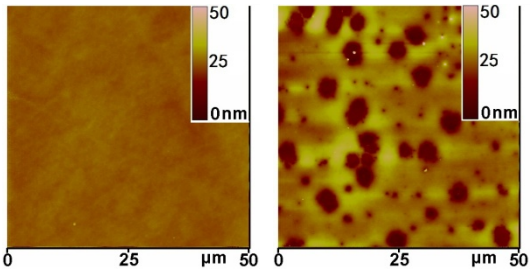

Fig. S1. The surface morphology of uncharged a) thin PMMA and b) PS films (with thickness of 30 nm) after thermal annealing at 190 °C for 5s.

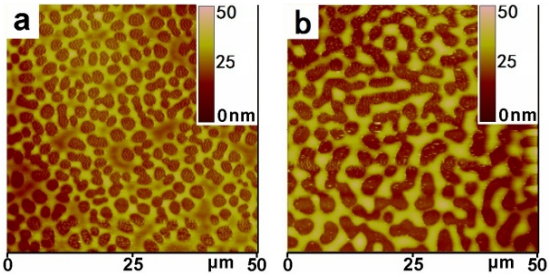

Fig. S2. Topographic images of PMMA a) and PS b) with charge pattern dewetted in THF and acetone solvent for 1 min, respectively.

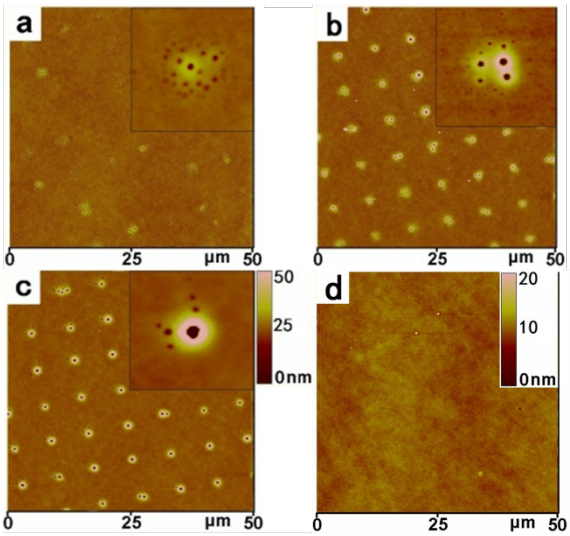

Fig. S3. The surface morphology of thin PMMA films (with thickness of 120 nm) evolving with time while annealed in THF: water solution on the substrates with patterned charges. a) 2 min, b) 4 min, c) 5 min. d) The surface morphology of uncharged thin PMMA (with thickness of 120 nm) after thermal annealing at 190 °C.

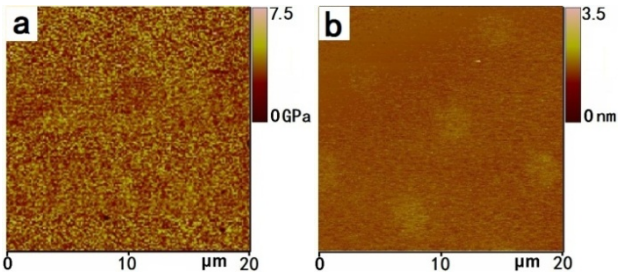

Fig. S4. The images of a) modulus mapping and b) sample deformation of PMMA with charge pattern. The tip elastic coefficient is 34 N/m.