

Support information

Observing wetting behaviors of UV-curable liquid on nanostructured surfaces with sub-20nm resolution

Jie Bian, ‡ Xinxin Fu, ‡ Jing Hu, ‡ Yushuang Cui, ‡ Zhiwei Li, ‡
Changsheng Yuan, *, ‡ Haixiong Ge, Wen-Di Li, *, † Yanfeng Chen‡

‡Department of Materials Science and Engineering, College of
Engineering and Applied Sciences, National Laboratory of Solid State
Microstructures, Nanjing University,

Nanjing, 210093 (P. R. China)

† Department of Mechanical Engineering, University of Hong Kong,
Pokfulam, Hong Kong, P. R. C.

***Corresponding Author:** E-mail: csyuan@nju.edu.cn; liwd@hku.hk

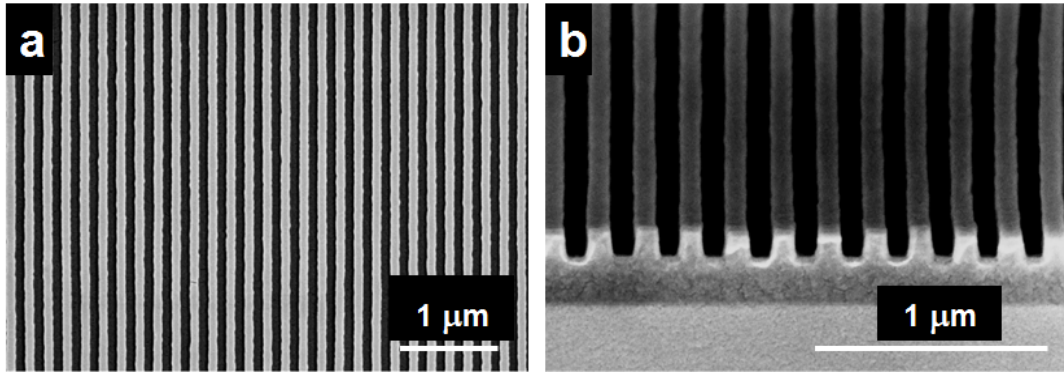


Figure S1. SEM images of the as-imprinted 200 nm pitch nanogrooves:
(a) top view and (b) cross-sectional view.

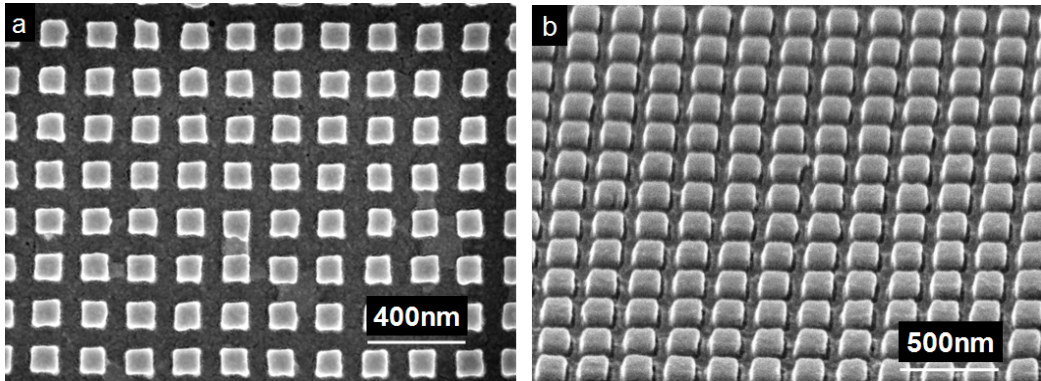


Figure S2. SEM images of the 200 nm pitch nanopost arrays:
(a) top view and (b) tilted view.

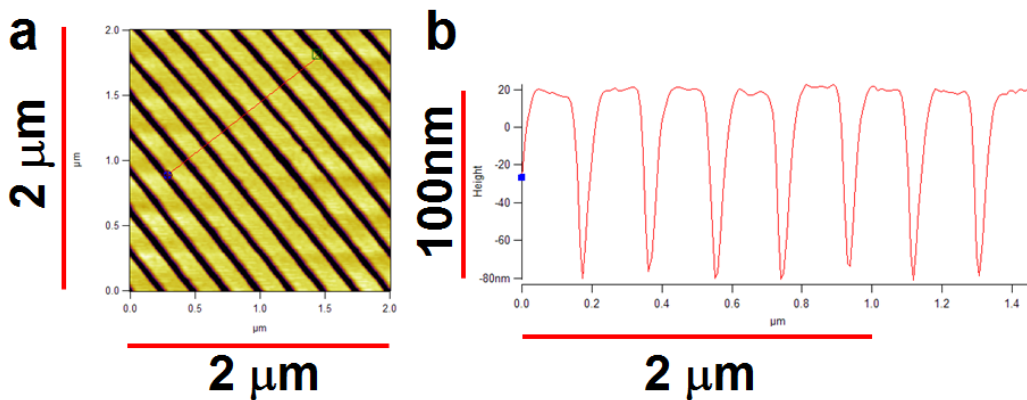


Figure S3. AFM images of the 200 nm pitch nanogrooves after silanization:
(a) plane-view image; (b) line cut profile of the corresponding image in (a).

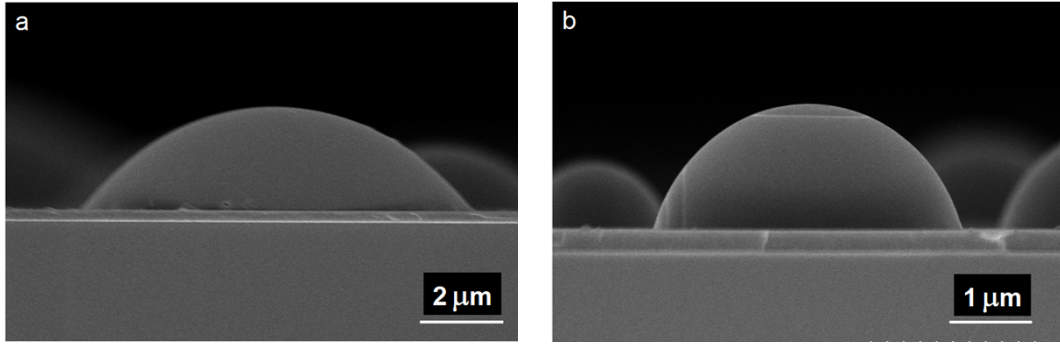


Figure S4. SEM images of cross-section of solidified microdroplets on smooth surface coated by self-assembled monolayers (SAMs) of trichlorofluoroalkylsilane: (a) HH liquid and (b) LH liquid

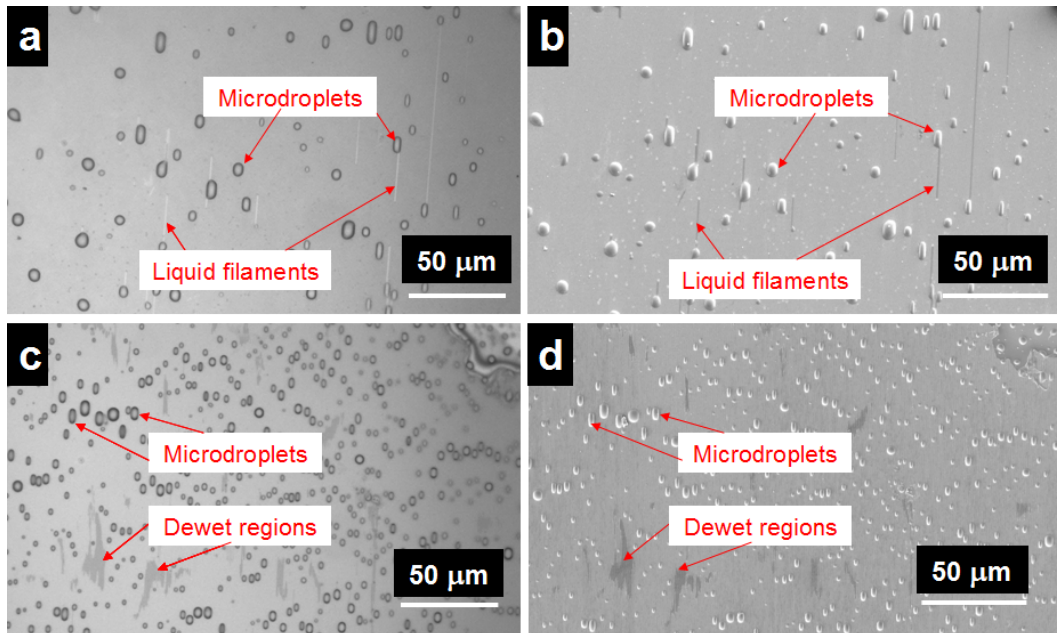


Figure S5. Microscopic images of microdroplets before crosslinking (a) HH liquid and (c) LH liquid and SEM images of the droplets at corresponding same positions after crosslinking (b) HH liquid and (d) LH liquid.

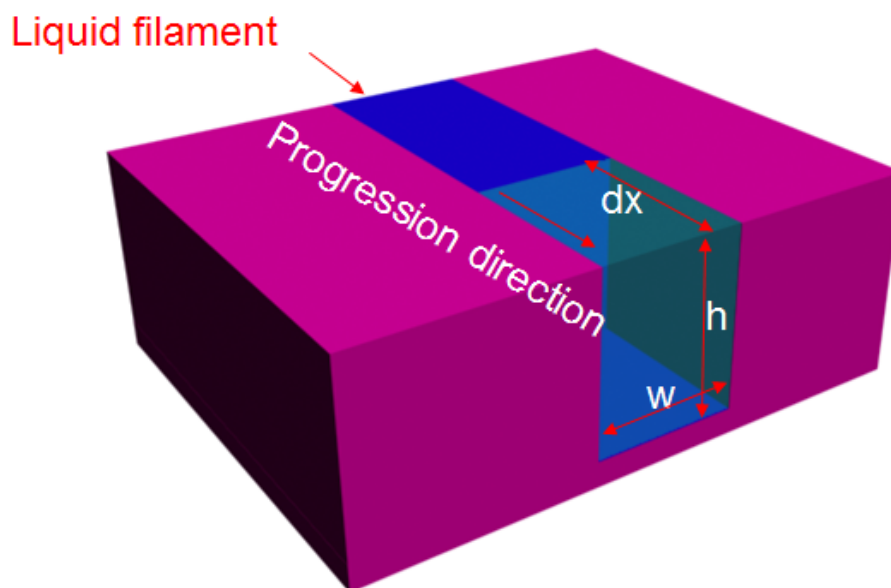


Figure S6. Schematic of progression of liquid (in blue) in a rectangular nanogroove.

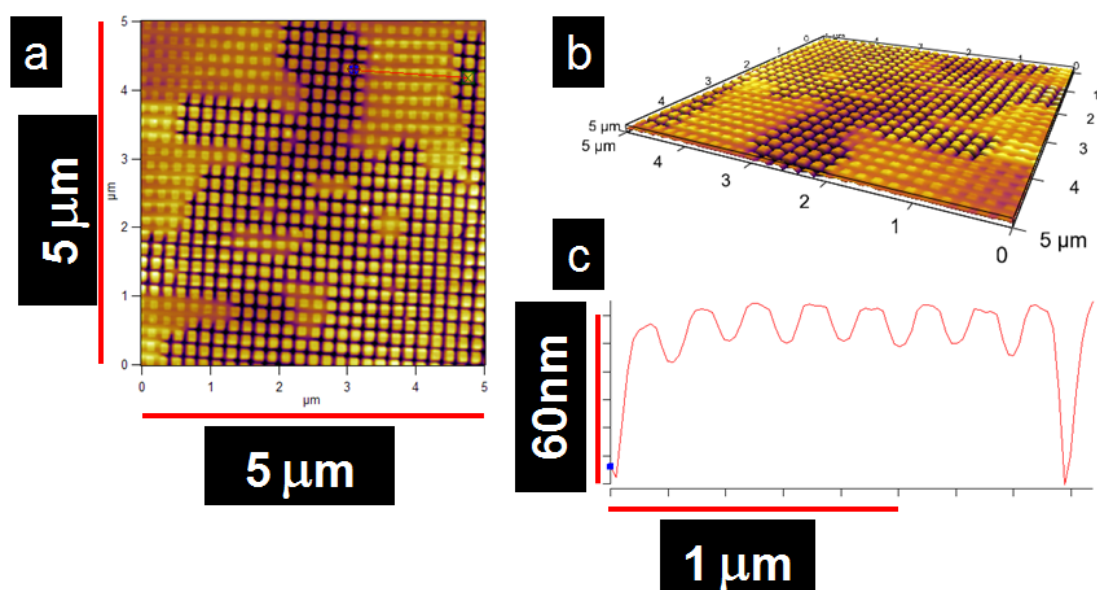


Figure S7. AFM images of solidified HH liquid on 200 nm pitch nanopost arrays coated by trichlorofluoroalkylsilane : (a) plane-view AFM image; (b) three-dimensional AFM perspective view of (a); and (c) line cut profile of the corresponding image in (a).

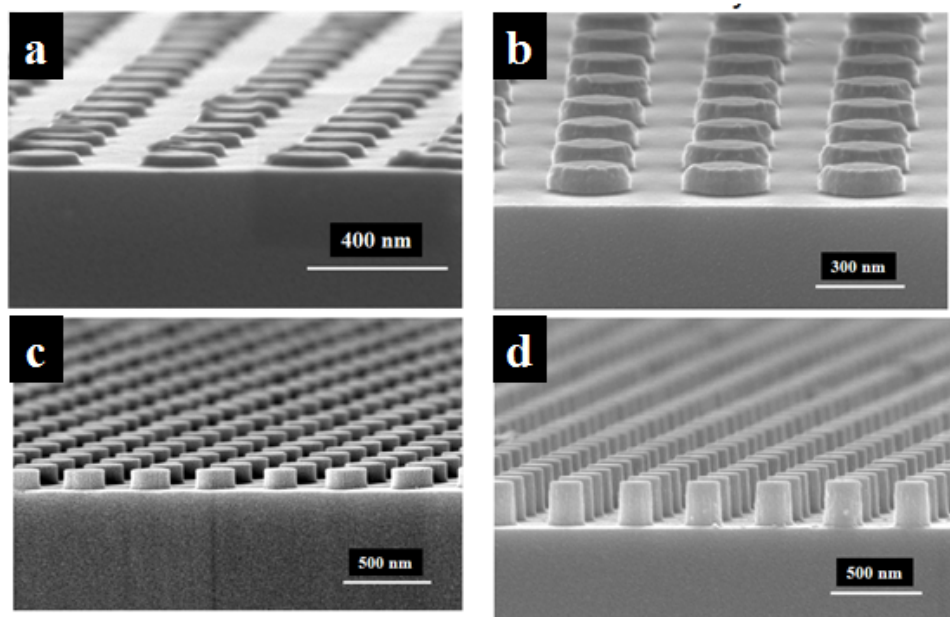


Figure S8. SEM images of the 400 nm pitch cylindrical nanopost arrays with different post heights of (a) 35nm, (b) 65nm, (c) 110nm height, and (d) 250nm.

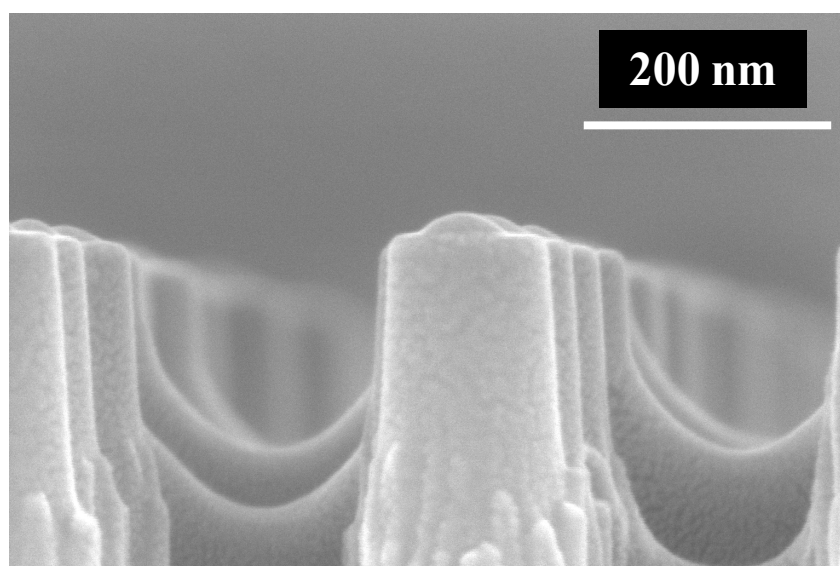


Figure S9. SEM image of the cross-sectional view of solidified liquid on the 400 nm pitch cylindrical nanopost array, with the nanodroplets visible on the top of the nanoposts and the menisci between the nanoposts.