Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Asymmetric Multifunctional 3D Cell Microenvironments by Capillary Force Assembly

*Qimeng Song, Sergey I. Druzhinin, Holger Schönherr**

Physical Chemistry I and Research Center of Micro and Nanochemistry and Engineering (***Cμ***), Department of Chemistry and Biology, University of Siegen, Adolf-Reichwein-Str. 2, 57076, Siegen, Germany.

Supporting Information

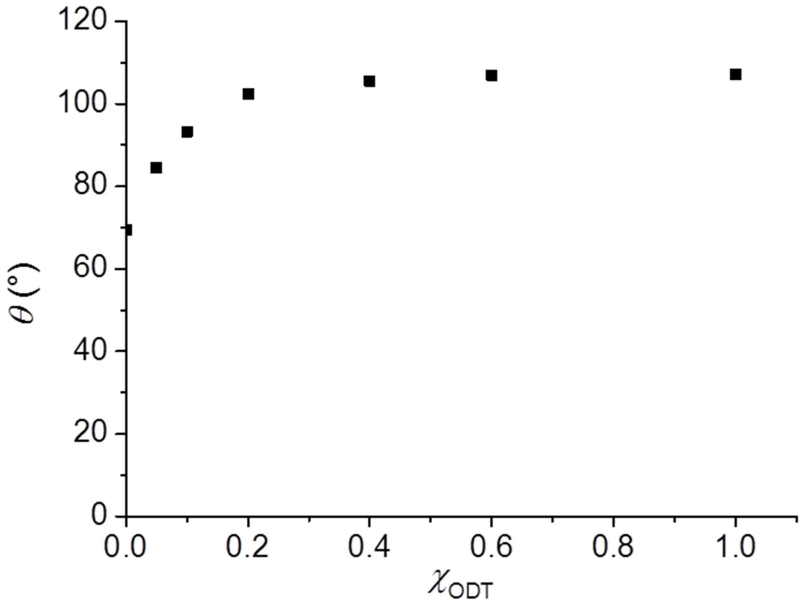

Figure S1. Static water contact angle of the SAM-functionalized gold surface as function of ODT fraction in the (ODT/MUBiB) binary thiol solution. Each point is the mean value of more than 6 different positions.

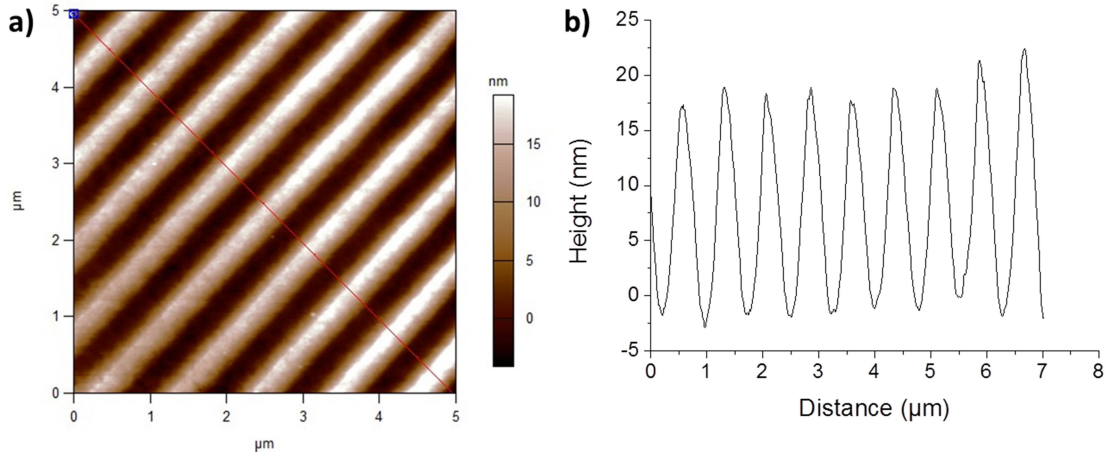

Figure S2. a) AFM height images of nanoline pattern in top of a micro/nanostructured PS cube. b) Height profile of the line pattern from panel a) along the red line. The pitch of the lines is 750 ± 28 nm and the depth is 21 ± 2 nm).

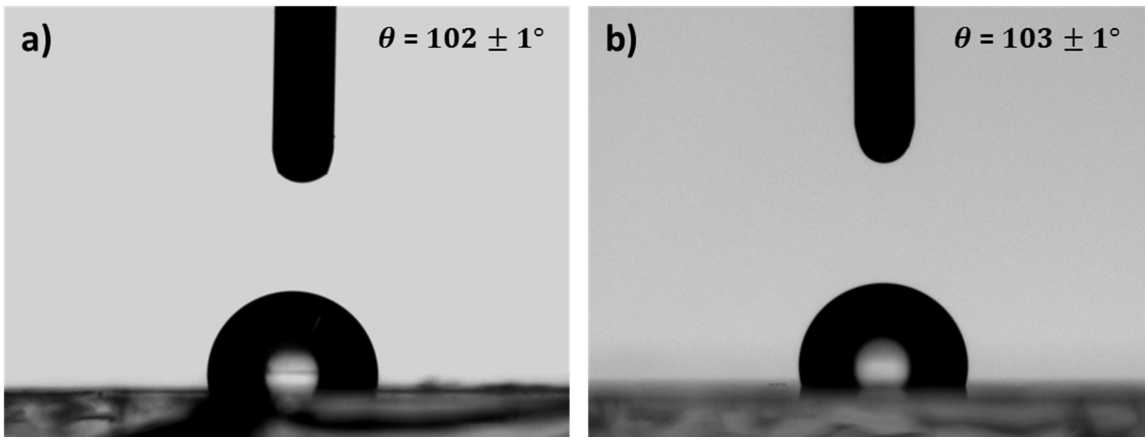

Figure S3. Measurement of static water contact angle of a 2 µL water droplet on a) polystyrene surface after imprint with a featureless flat PDMS stamp; b) nanoline patterned (the pitch of the lines is 750 ± 28 nm) PS film surface. The value of the contact angle is the mean value of more than 6 different positions.

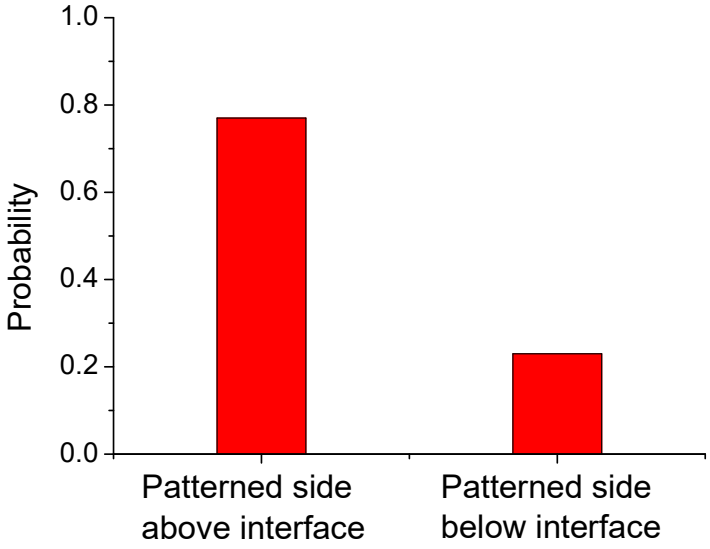

Figure S4. Statistical analysis of cube orientation: The location of the nanoline pattern above or below the water/air interface was observed in self-assembled aggregates by analyzing the SEM images of transferred cube aggregates. More than 500 cubes were analyzed.

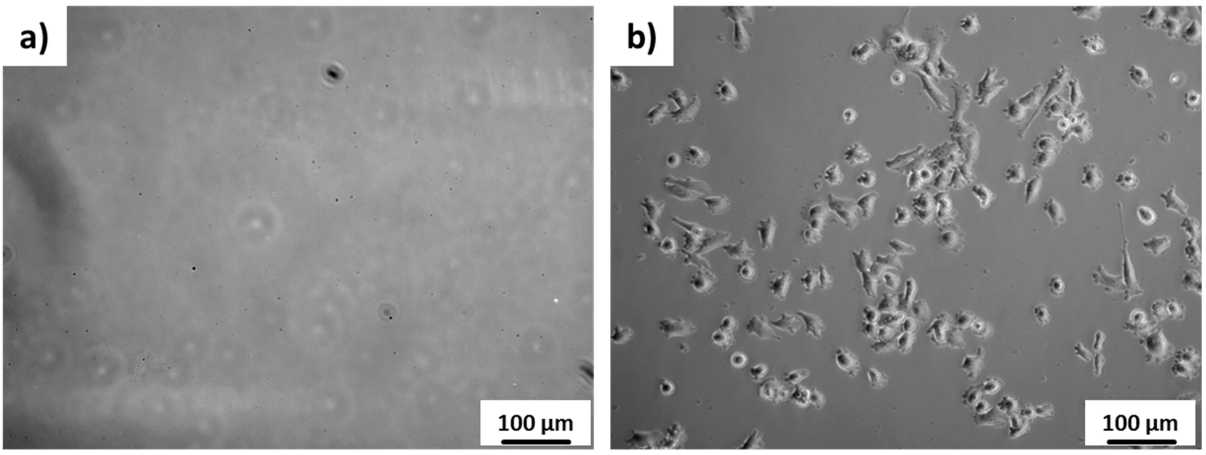

Figure S5. Light microscopy images of Patu 8988T cells on different substrates after 24 h incubation: a) PAAm brushes on transparent flat Au substrate(~30 nm) and b) TCPS.

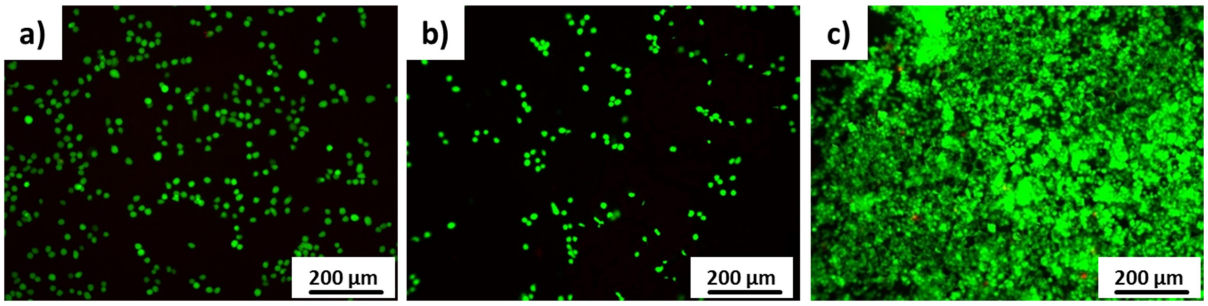

Figure S6. Fluorescence microscopy images of Patu 8988T cells after life/dead staining with propidium iodide (red; dead cells) and fluorescein diacetate (green; viable cells) on different substrates: a) TCPS (after 24 h incubation) and (b,c) glass substrate supported microwells formed by self-assembled of hydrophobized PS cubes b) after 24 h and c) after 72 h cell incubation.

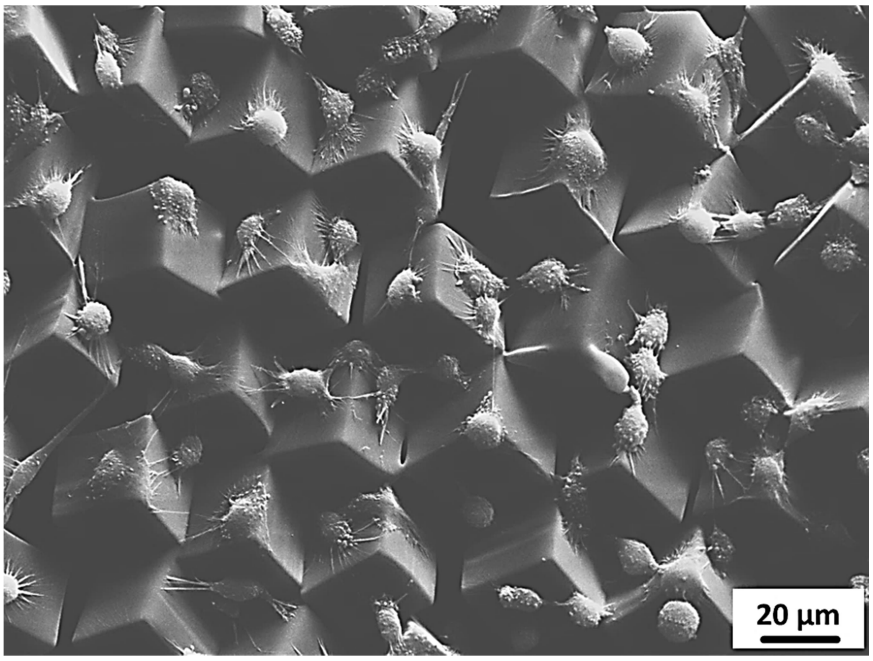

Figure S7. SEM image of of Patu 8988T cells attached inside of FN functionalized MHDA modified microwells after 24 h cell incubation.