Supporting Information Available

Block-Copolymer Nanolithography

For the fabrication of gold nanoparticle arrays glass coverslips were retracted from a toluene solution of PS-block-P2VP (Polymer Source Inc., Dorval, Canada) loaded with $HAuCl_4$ (Sigma) at a molar ratio of 0.5 followed by a reactive gas plasma process (TePla 100-E; 0.4 mbar O_2; 150 W; 15 min, followed by 0.4 mbar H_2; 150 W; 30 min). Interparticle spacing and standard deviation were determined using an ImageJ plug-in written by Philippe Girard, the standard error is < 1 nm for all substrates.

Supplemental Table 1. PS-*block*-P2VP polymers

diblock copolymer PS(x)-*b*-P2VP(y)	**PS units**	**P2VP units**	**polydispersity M_w/M_n**
PS(25000)-*b*-P2VP(15000)	240	143	1.05
PS(47000)-*b*-P2VP(24000)	451	228	1.07
PS(110000)-*b*-P2VP(52000)	1056	495	1.15
PS(190000)-*b*-P2VP(55000)	1824	523	1.10

Supplemental Table 2. Micellar solutions for BCMN

diblock copolymer PS(x)-*b*-P2VP(y)	**polymer concentration [mg/mL]**	**loading rate [a]**	**retraction velocity [mm/min]**	**interparticle spacing ± standard deviation [nm] on the template**	**Figure**

PS(25000)-*b*-P2VP(15000)	8 [b]	0.5	12	30 ± 6	3b, 7a-d
PS(25000)-*b*-P2VP(15000)	5	0.5	16	40 ± 7	1a,b,d,e,f; 3b, 5a-d
PS(47000)-*b*-P2VP(24000)	5	0.5	20	40 ± 7	3b
PS(110000)-*b*-P2VP(52000)	5	0.5	32	65 ± 8	3b, 7e
PS(110000)-*b*-P2VP(52000)	5	0.5	20	70 ± 8	3b, 2a,b 6a,b
PS(190000)-*b*-P2VP(55000)	2	0.5	8	120 ± 15	3b, 4a-d

[a] The loading rate is the molar ratio between $HAuCl_4$ and all P2VP units

[b] Here, the solvent was *p*-xylene instead of toluene

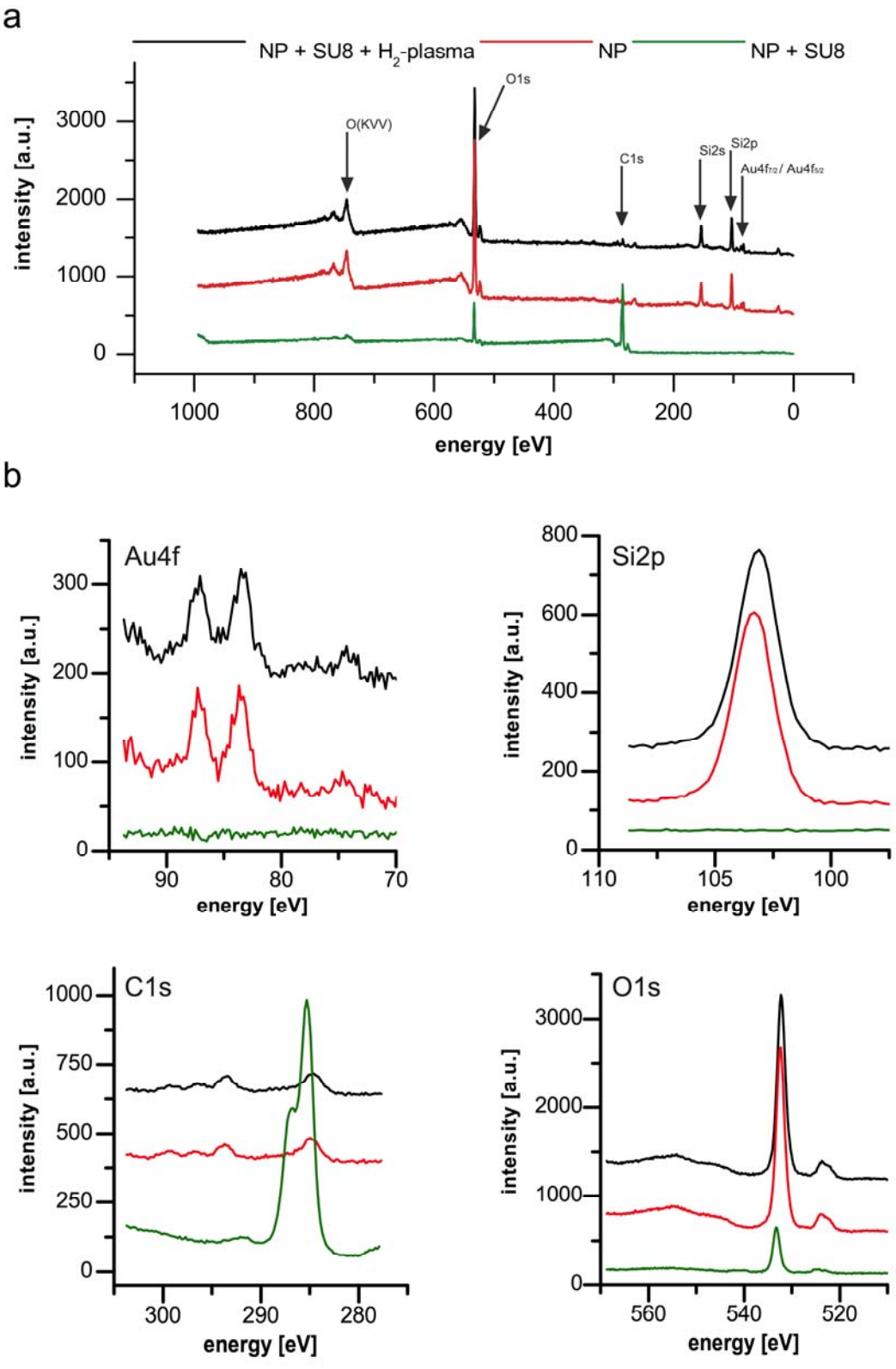
XPS measurements

XPS were collected with a Leybold MAX 200 photoelectron spectrometer equipped with an Mg K_α radiation source (1253.6 eV) operated at 200 W. The emitted photoelectrons were detected by a multi-channel detector at a pass energy of 96 eV for the survey spectra and 48 eV for narrow-scanned spectra, respectively, at a take-off angle of 90° relative to the surface. During the measurements, the base pressure was lower than $6 \cdot 10^{-9}$ mbar. Binding energies were calibrated with respect to the Si2p(+IV) peak at 103.3 eV and spectra were corrected using Shirley background subtraction [S1].

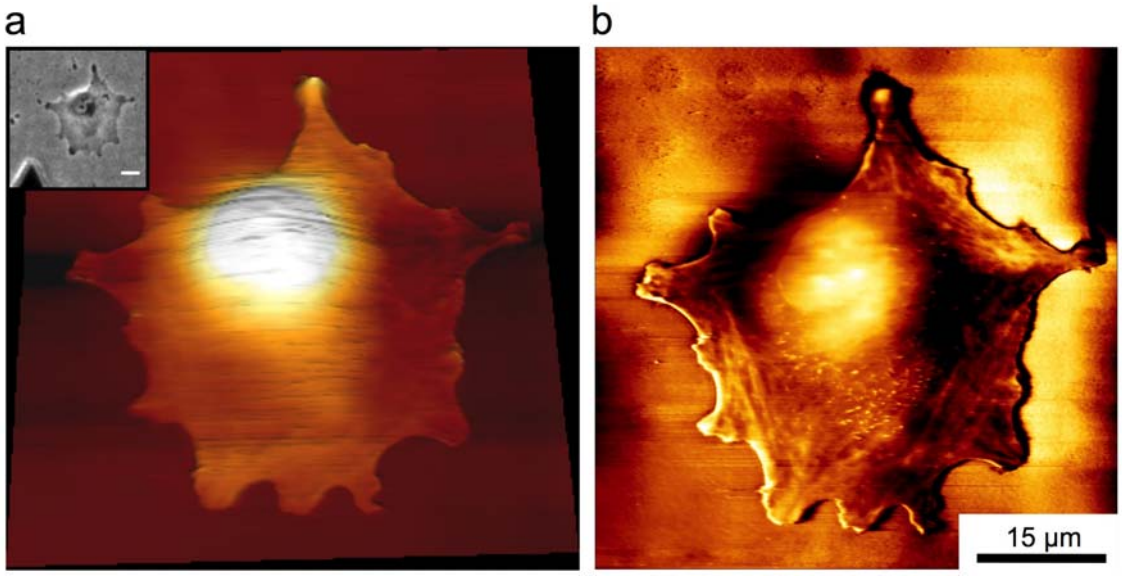
Supplemental References

[S1] D. A. Shirley, *Phys. Rev. B* **1972**, *5*, 4709.

Supplemental Figures


a
NP + SU8 + H2-plasma
NP
NP + SU8
O(KVV)
O1s
C1s
Si2s
Si2p
Au4f7/2 / Au4f5/2
intensity [a.u.]
energy [eV]
b
Au4f
Si2p
C1s
O1s
intensity [a.u.]
energy [eV]

Supplemental Figure 1. XPS spectra of the SU8 removal process. The spectra show SU8 covered gold nanoparticles on glass before removal (green), after removal (black) and without SU8 (red). (a) low-resolution survey spectrum, (b) detailed spectra of Au4f, Si2p, C1s and O1s regions.



Supplemental Figure 2. Atomic force micrographs of living REF52-YFP-Paxillin fibroblast adhering to PEG-*700*-DA hydrogel. (a) displays a three-dimensional image of the height signal, 70 µm x 70 µm scan, z_{max} = 1.3 µm. The inset shows a phase contrast micrograph of the same cell during the scan, scale bar is 15 µm. (b) shows the corresponding phase image.