

## Supplementary Information

# Nanopillar Diffraction Gratings by Two-Photon Lithography

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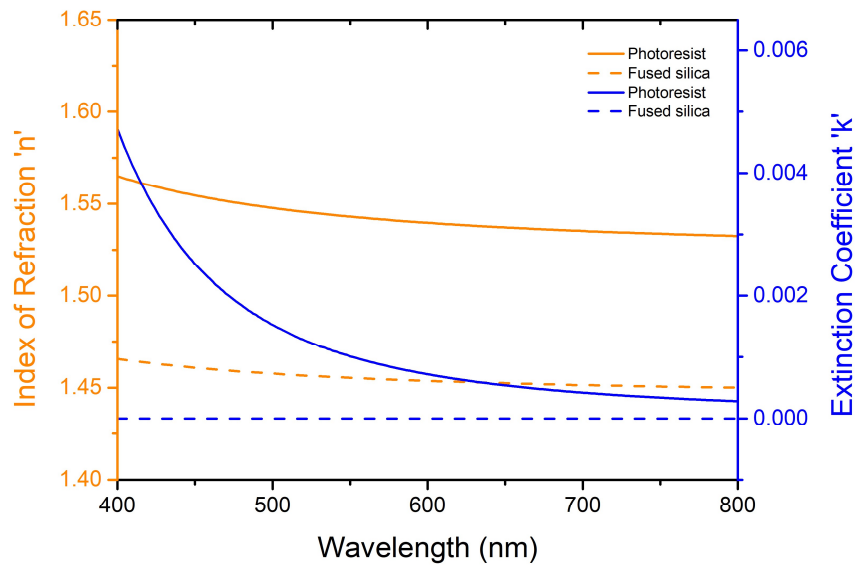
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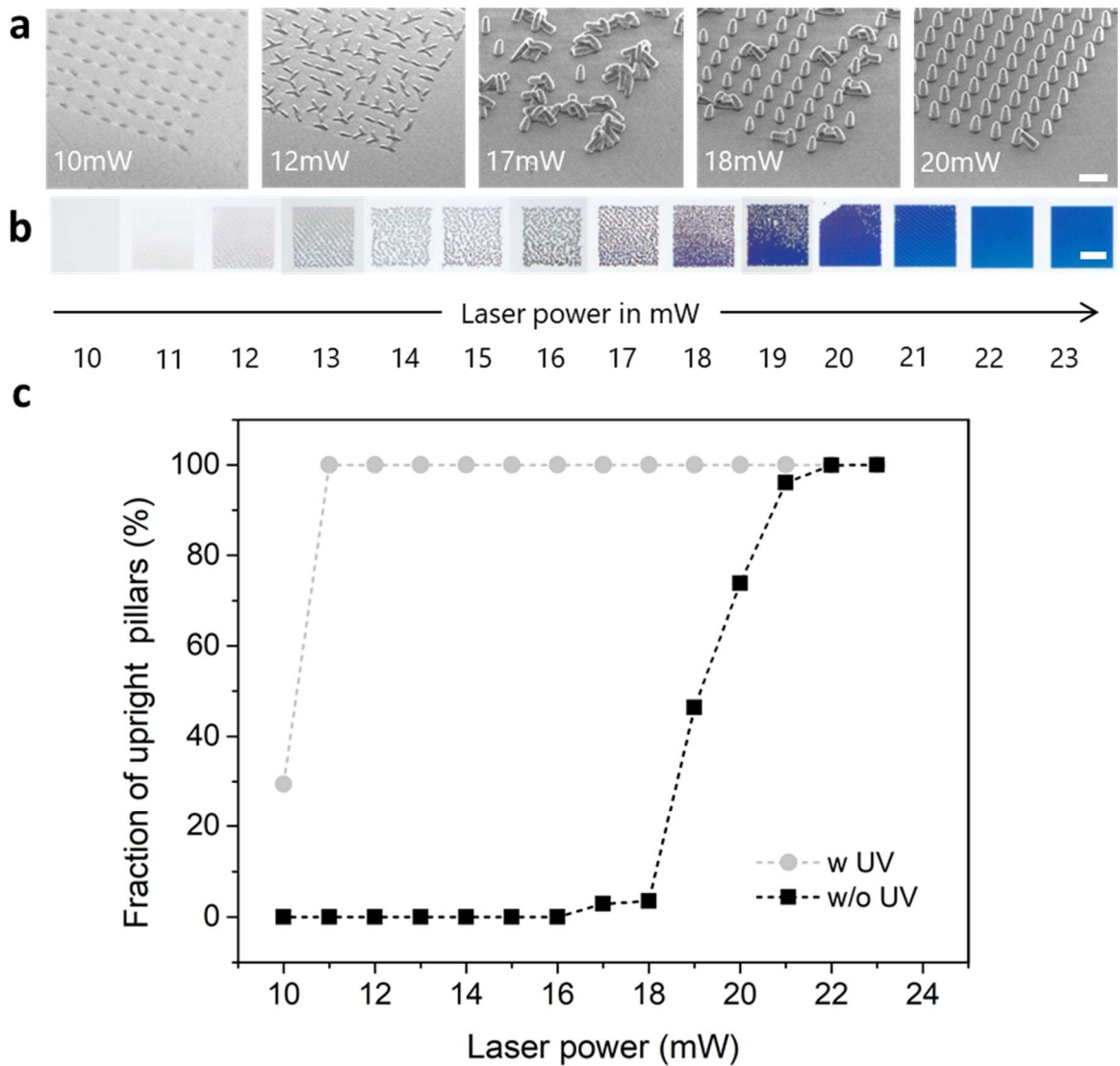
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**Table S1. Summary of pillar dimensions as a function of the laser power.** Experimental data were obtained from scanning electron microscopy (SEM) micrographs.

Laser Power [mW]	SEM-investigation			Fit Sun et al.			Numerical Simulations				
	Pillar Diam. [nm]	Pillar Height [nm]	Fraction of upright pillars [%]	Voxel Diam. [nm]	Voxel Diam. [nm]	Voxel Diam. [nm]	Voxel Diam. [nm]	Voxel Height [nm]	Pillar Height [nm]	Aspect ratio	Shrinkage [%]
10	120 ± 11	333 ± 13	29.45	115	115	144	144	531	965	6.69	65.5
11	184 ± 5	581 ± 30	100	178	178	230	230	781	1.09	4.74	46.72
12	225 ± 7	660 ± 14	100	221	221	275	275	959	1.18	4.29	44.04
13	230 ± 14	822 ± 39	100	254	254	312	312	1.113	1.257	4.02	34.58
14	284 ± 7	868 ± 28	100	281	281	344	344	1.228	1.314	3.82	33.94
15	298 ± 6	935 ± 31	100	303	303	370	370	1.33	1.365	3.69	31.5
16	313 ± 12	1.054 ± 32	100	323	323	392	392	1.424	1.412	3.6	25.35
17	336 ± 13	1.099 ± 17	100	341	341	413	413	1.502	1.451	3.51	24.26
18	358 ± 25	1.085 ± 36	100	357	357	433	433	1.576	1.488	3.44	27.08
19	376 ± 9	1.21 ± 33	100	372	372	449	449	1.664	1.532	3.41	21.02
20	379 ± 26	1.224 ± 44	100	385	385	464	464	1.708	1.554	3.35	21.24
21	411 ± 17	1.193 ± 39	100	397	397	478	478	1.768	1.584	3.31	24.68
22	410 ± 18	1.236 ± 24	100	408	408	491	491	1.825	1.613	3.29	23.35
23	427 ± 20	1.315 ± 35	100	419	419	503	503	1.873	1.637	3.25	19.65



**Figure S1.** Optical properties of the cured photoresist and the fused silica substrate obtained by ellipsometry.



**Figure S2. Optical pillar gratings when fabricated without UV-post-curing. (a)** SEM-micrographs. Scale bar is 1  $\mu\text{m}$ . **(b)** Optical micrographs of 50x50  $\mu\text{m}$  nanopillar gratings on a fused silica substrate. Scale bar is 25  $\mu\text{m}$ . **(c)** Fraction of upright pillars without (black squares) and with additional cross-linking (grey circles). Dotted lines are added to guide the eyes.