# Efficient light trapping and broadband absorption of the solar spectrum in nanopillar arrays decorated with deep-subwavelength sidewall features

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**Fabrication of samples in Figure 1**

Reference sample, with straight pillars (Figure 1a in manuscript), is obtained using a non-switched DRIE process, performed with a gas flow ratio of 120/160 sccm for $SF_6/C_4F_8$, a power of 2000/45 W on the HF coil/HF platen, a pressure of 15 mTorr and a temperature of 293 K. The main parameter used to control the dimensions of the scalloping obtained in pillar walls is the duration of alternated etching and passivation phases used in Bosch switched etch process. The remaining parameters are optimized to preserve the vertical walls of the pillars. Sample with small scallops (Figure 1b in manuscript) is obtained using 1.8 s etch steps alternated with 1.6 s passivation steps, for a total etch time of 2 minutes. Etch phase is performed with a gas flow ratio of 250/40/40 sccm for $SF_6/C_4F_8/O_2$, a power of 3200/65 W on the HF coil/LF platen, a pressure of 20 mTorr and a temperature of 293 K. Passivation is achieved with a $C_4F_8$ flow 150 sccm, a power of 1800 W on the HF coil, a pressure of 25 mTorr and a temperature of 293 K. The sample with larger scallops (Figure 1c in manuscript) is obtained using 2.6 s etch steps alternated with 2.32 s passivation steps,

for the same total etch time of 2 minutes. The etch phase is performed with a gas flow ratio of 390/30/39 sccm for $SF_6/C_4F_8/O_2$, a power of 2800/72 W on the HF coil/ LF platen, a pressure of 30 mTorr and a temperature of 273 K. The passivation phase is accomplished with a $C_4F_8$ flow of 250 sccm, a power of 2000 W on the HF coil, a pressure of 24 mTorr and a temperature of 273 K.