Electronic Supplementary Material (ESI) for Nanoscale.

Flexible Multi-wavelength Photodetector Based on Porous Silicon Nanowires

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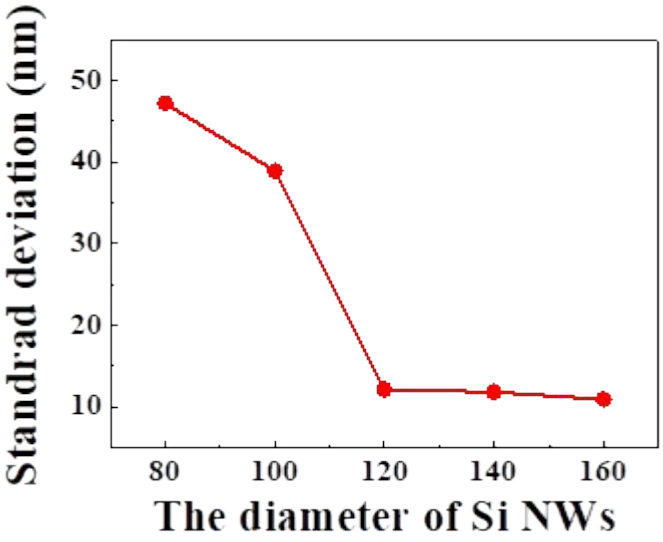

Fig. S1. Standard deviation of Si NWs' diameter.

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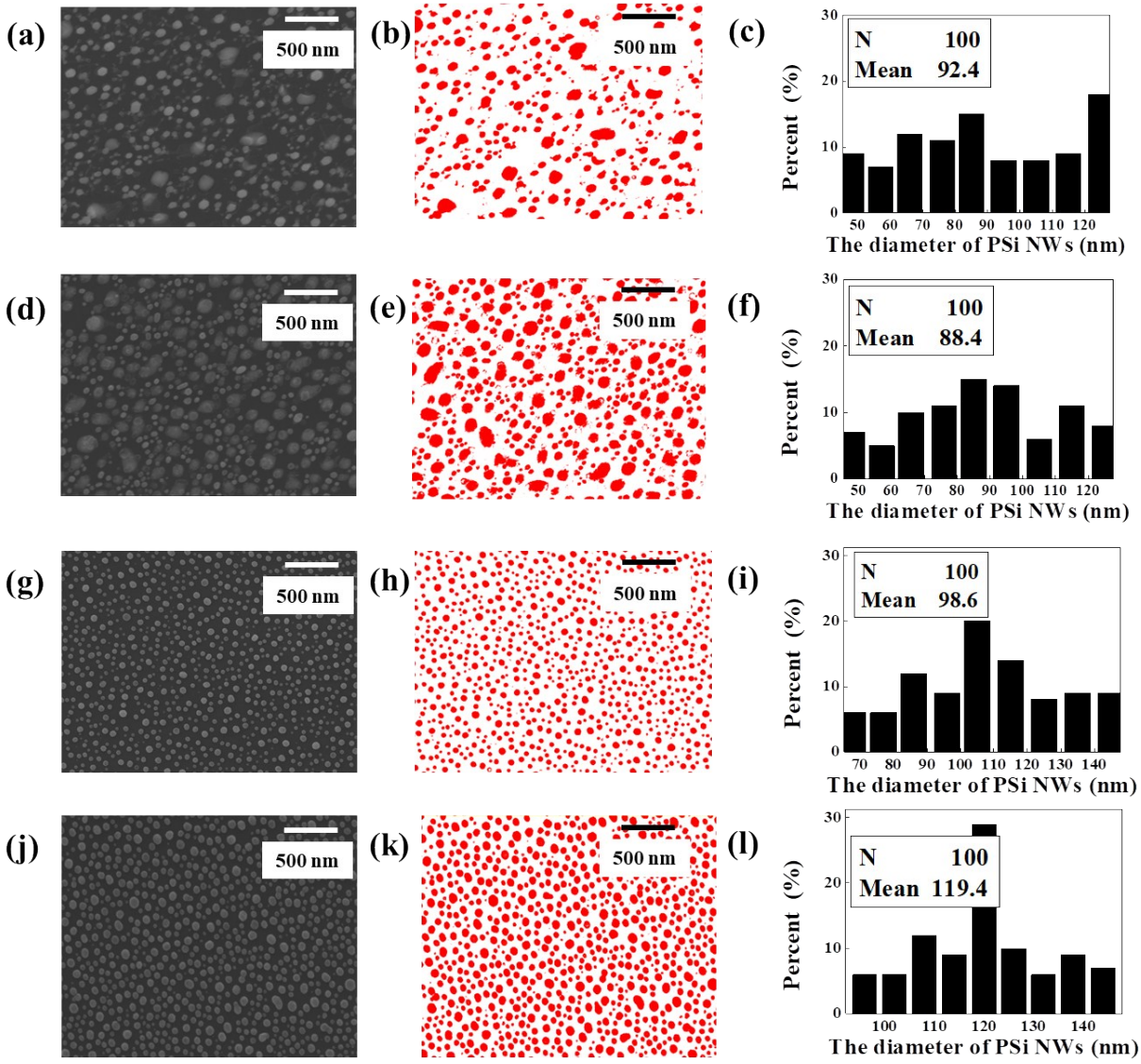

Fig. S2. SEM images of the Ag mesh generated by RTA with (a) 4, (d) 6, (g) 8, and (j) 10 nm thick Ag films; corresponding image analysis patterns with (b) 4, (e) 6, (h) 8, and (k) 10 nm thick Ag films; and size distributions of the Ag NPs generated by RTA with (c) 4, (f) 6, (i) 8, and (l) 10 nm thick Ag films.

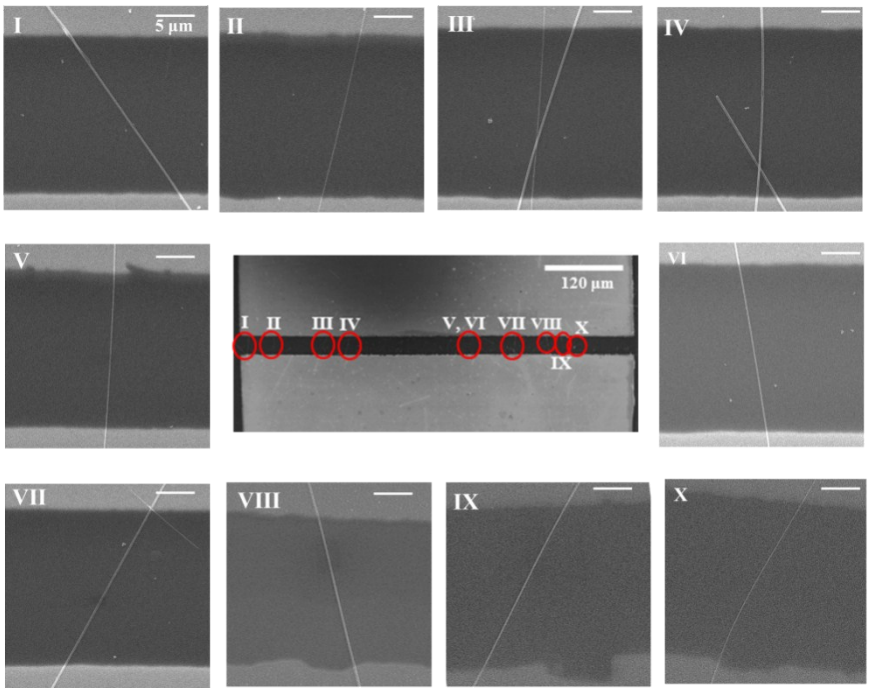

Fig. S3. SEM images of the 10 PSi NWs spanning the Al electrodes.

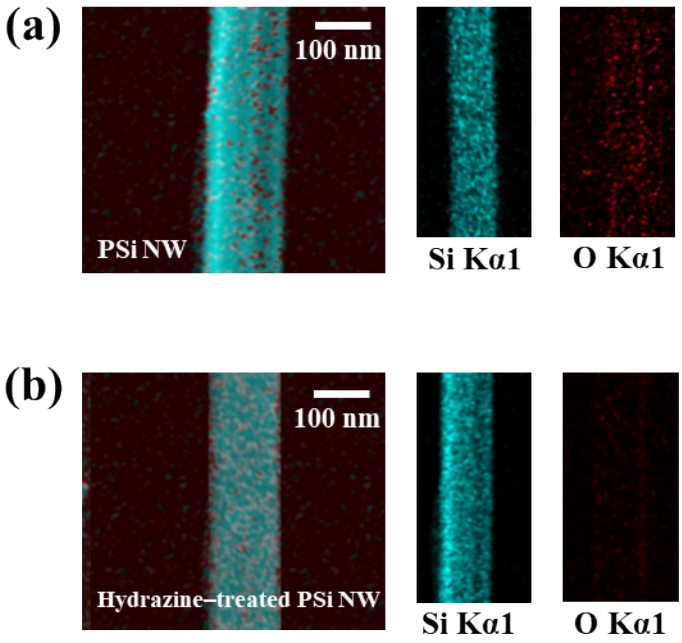

Fig. S4. TEM-EDS element mapping images of (a) pristine PSi NW and (b) hydrazine–treated PSi NW.

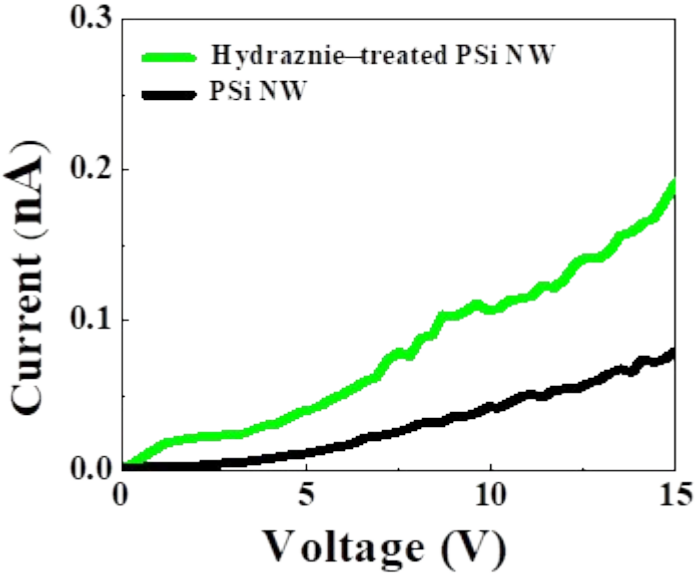

Fig. S5. *I-V* behaviors of pristine PSi NW and hydrazine–treated PSi NW.

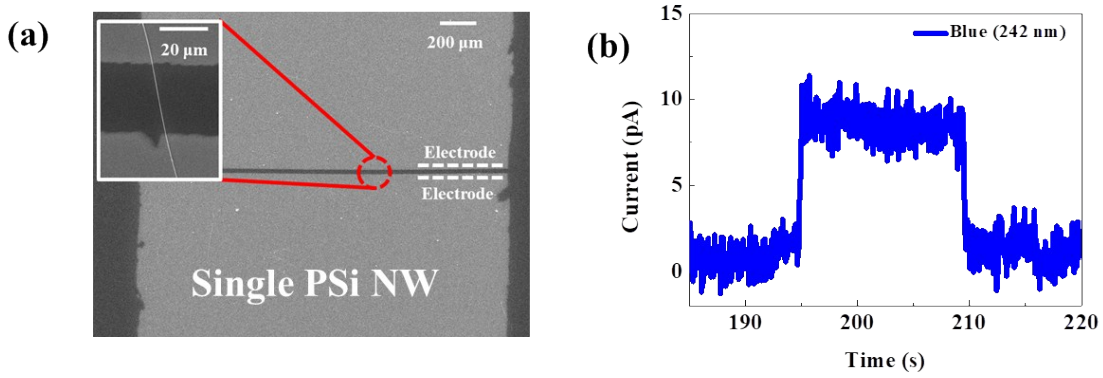

Fig. S6. (a) SEM image of the single PSi NW spanning the Al electrodes. (b) Photocurrent through the photo-sensing device composed of single PSi NW with illumination of visible light of the wavelength of 424 nm (blue).

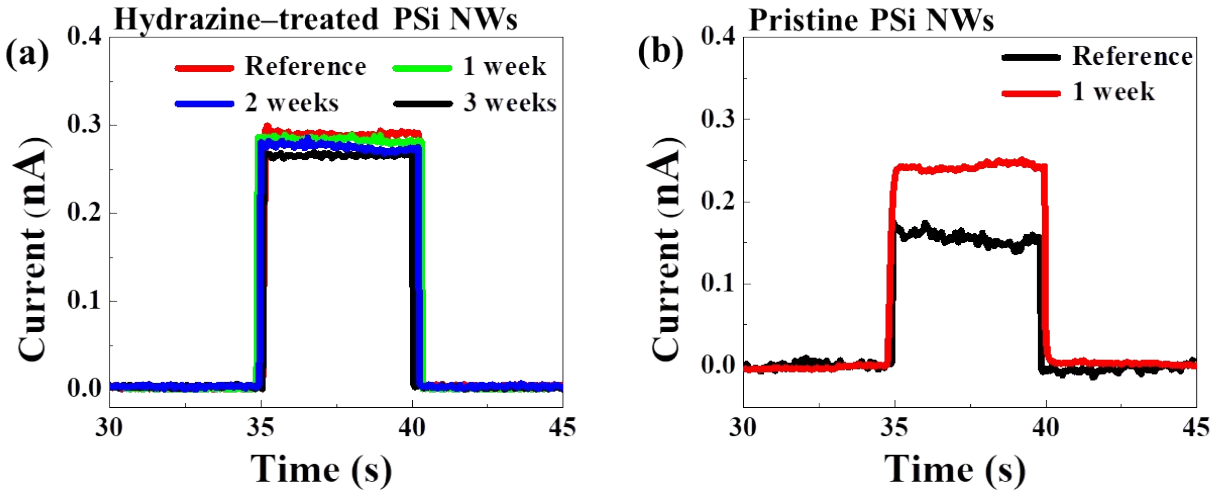

Fig. S7. Environmental stability test of the photo-sensing device composed of (a) hydrazine–treated PSi NWs and (b) pristine PSi NWs as reflected in the changes in the photocurrent upon exposure to ambient air up to three weeks (with illumination of visible lights of the wavelengths of 424 nm).