Supporting Information for

Current generation of vertically aligned ZnO nanowires by photo-induced deformation of matrix polymer

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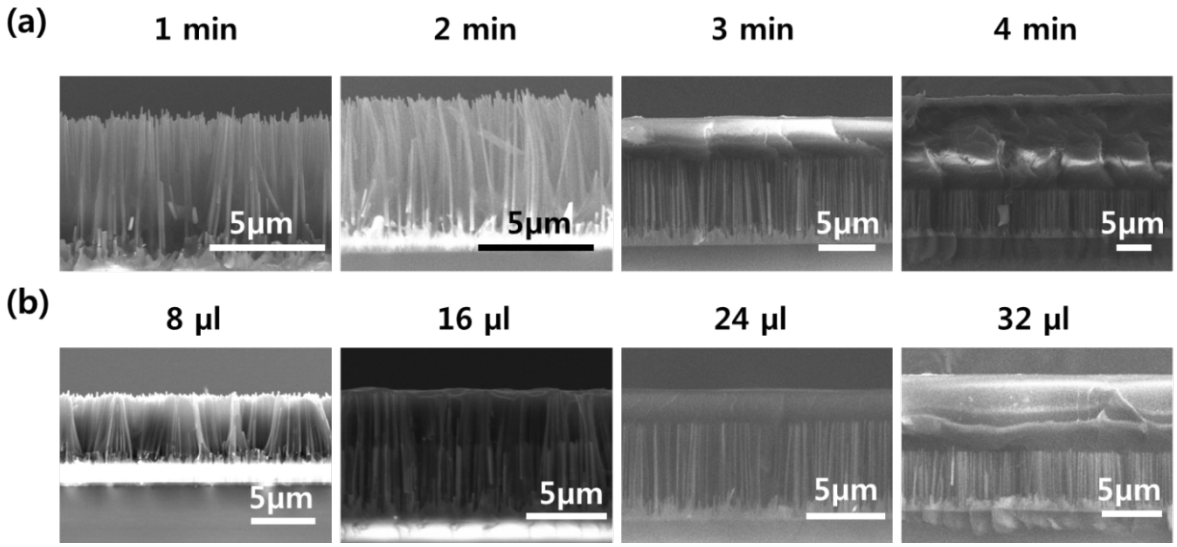

Figure S1. Various SEM images of vertically aligned ZnO NWs taken after coating of photosensitive P4VP-CMC solution. (a) with change of the residence time in a desiccator after coating of 24 μl solution and (b) with various amount of coating solution after residence in a desiccators for 3 min.

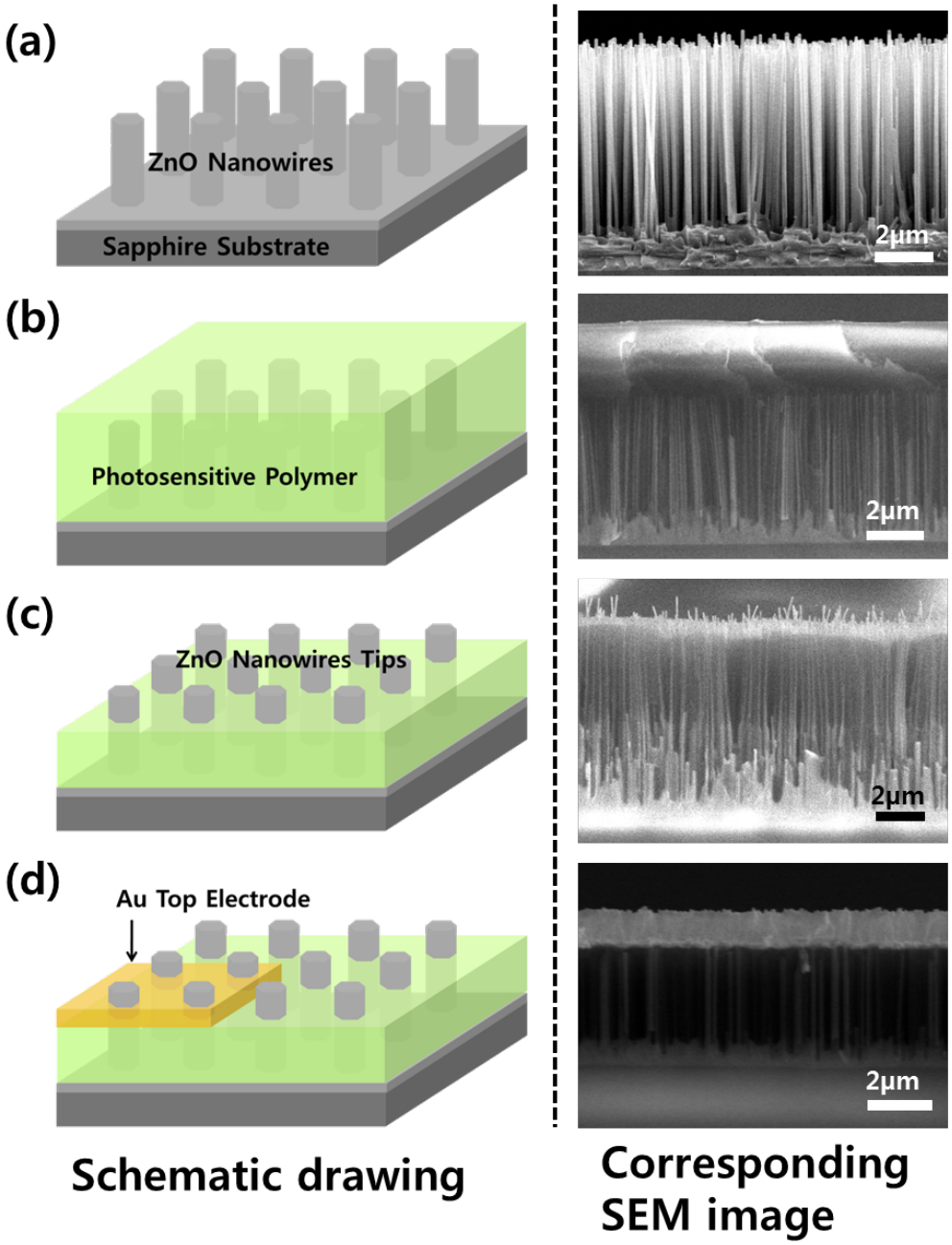

Figure S2. Fabrication steps of the device consisting of vertically aligned ZnO nanowires embedded in photosensitive polymer matrix (left) and corresponding SEM images (right). (a) As-grown vertically aligned ZnO nanowires. (b) After coating of the photosensitive polymer. (c) After reactive ion etching. (d) After deposition of Au top electrode.

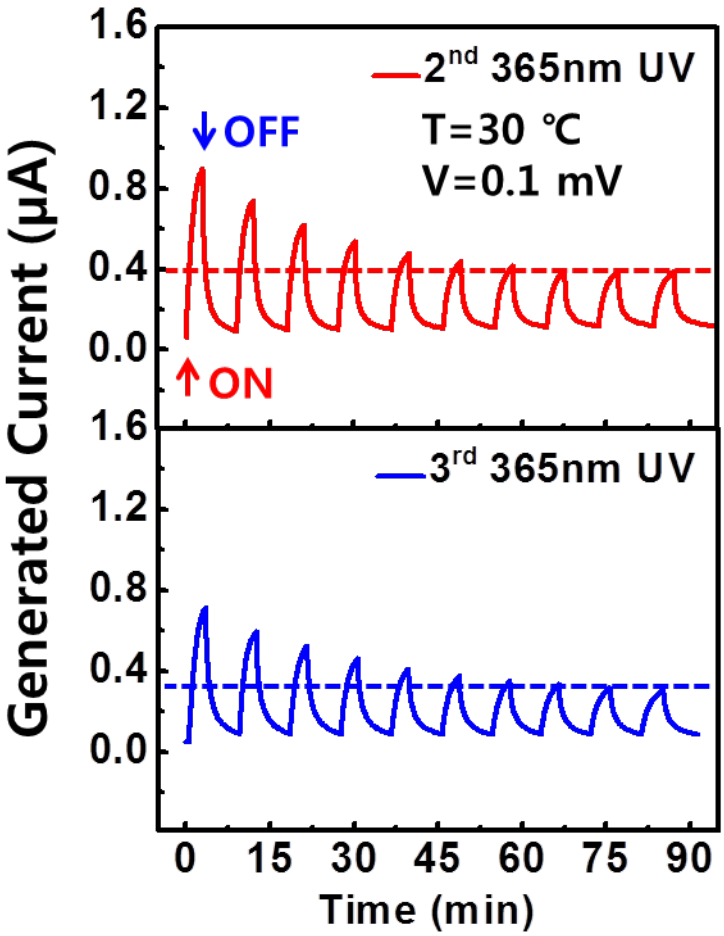

Figure S3. I-t curves of the device measured at a bias of 0.1 mV under 356 nm UV irradiation at 30 °C in the 2nd and 3rd cycle of the reversible deformation of polymer matrix.

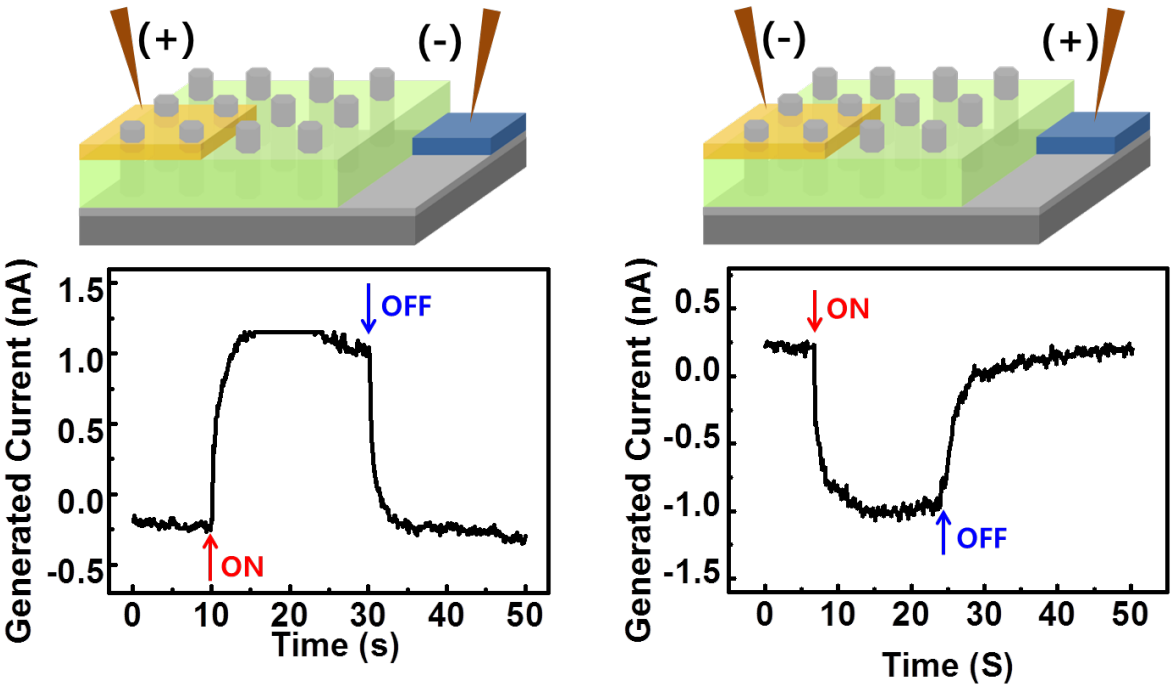

Figure S4. Generated current at 0 bias voltage measured when the polarity of the bias voltage to Au and Ag electrodes was reversed as shown in the schemes.

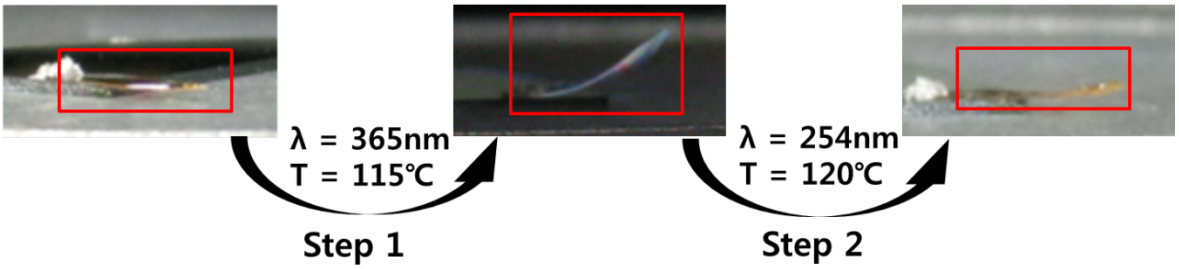

Figure S5. Optical microscope images of the photosensitive polymer taken after irradiation of UV light with different wavelengths.