

Electronic Supplementary Information for

Flexible Transparent Film Heaters Using Ternary Composite of Silver Nanowire, Conducting Polymer, and Conductive Oxide

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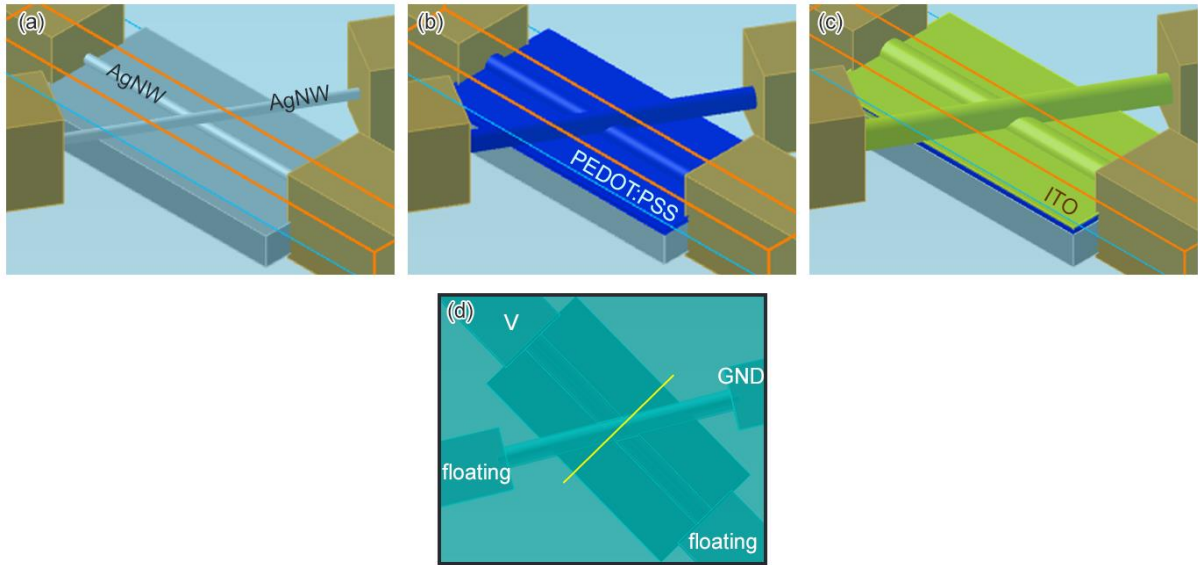


Fig. S1. Device simulation configuration in Lumerical DEVICE for (a) AgNW, (b) AgNW–PEDOT:PSS, and (c) AgNW–PEDOT:PSS/ITO. The length of each AgNW was set to 1 μm . (d) Yellow line shows the cross-section position for the heat distribution displayed in Fig. 4 in the main text. To make the current flow from the V electrode to GND electrode in the figure, the remaining electrodes were set to floating electrodes.

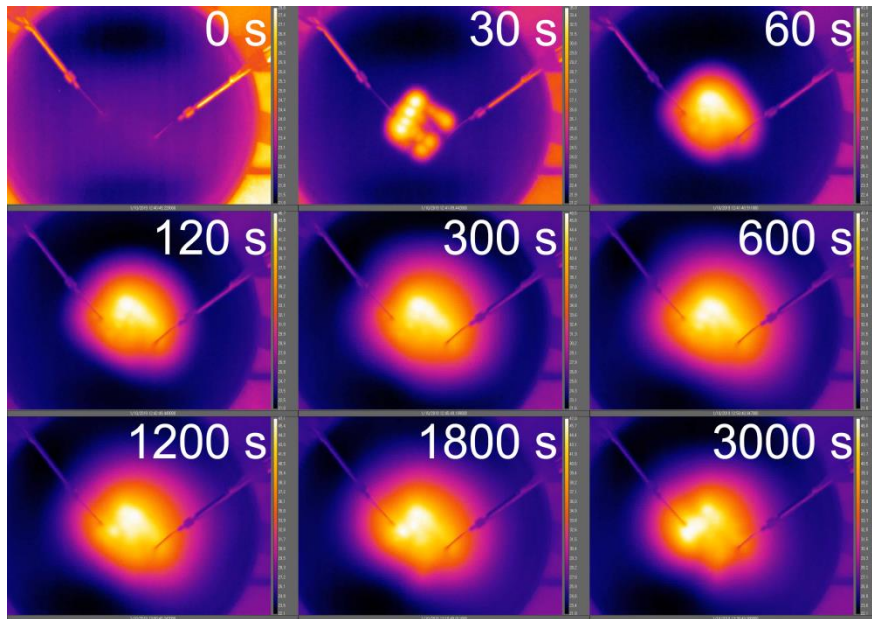


Fig. S2. Operation of the flexible thin film heaters (TFHs) based on the AgNW–PEDOT:PSS/ITO composite film in water over time.