

[Supplementary Information]

# Thermo-plasmonic gold nanofilm for simple and mass-producible photothermal neural interfaces

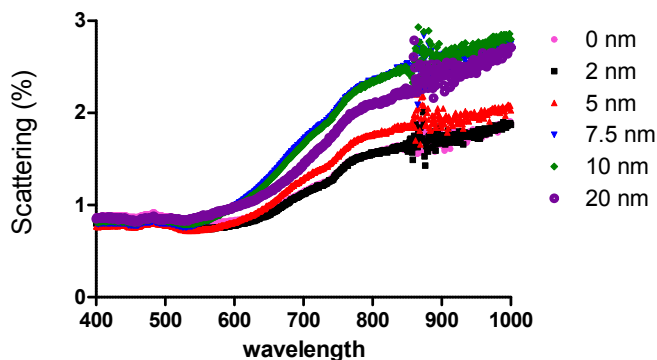
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((The manuscript was written with contributions from all authors. All authors have given approval to the final version of the manuscript. <sup>‡</sup>These authors contributed equally))

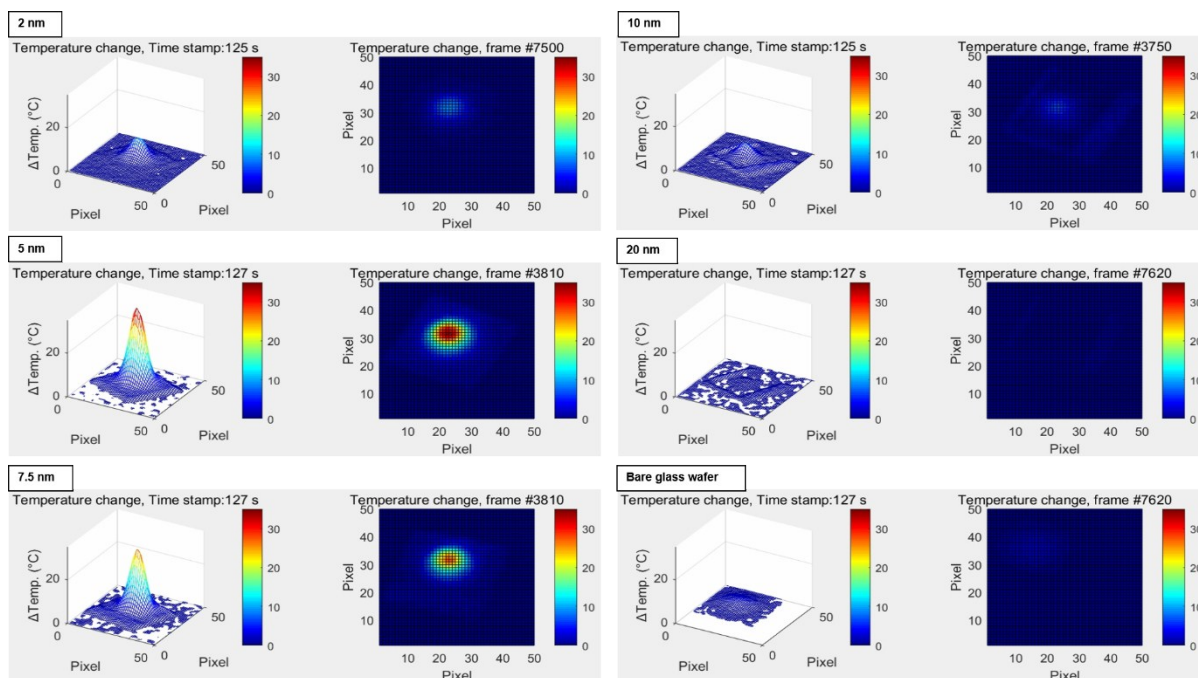
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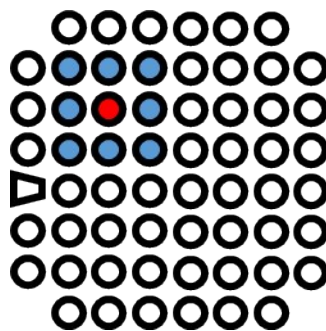
Here, we provide supporting information including three figures that help understanding of the provided work in the manuscript.



**Figure S1.** Scattering spectra of evaporated gold nanofilm samples.



**Figure S2.** Maximum temperature change profile upon NIR light illumination. The data were taken approximately 60 seconds after the NIR light is turned on.



**Figure S3.** Scheme of electrode-to-electrode impedance. In dry condition, impedance of the eight neighboring electrodes (blue) with respect to the channel #33 (red) was measured.