Electronic Supplementary Information

Synthesis of Multifunctional Plasmonic Nanopillar Array Using Soft Thermal Nanoimprint Lithography for Highly Sensitive Refractive Index Sensing

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**Fig. S1** Experimental setup for measuring the transmission spectrum of the PNPA for various refractive index liquids. The experiments were performed with a SolidSpec-3700DUV spectrophotometer (SHIMADZU).

**Fig. S2** Simulated reflectance spectrum of the metal nanodisk array supported by the nanopillars. The structure shows a high reflection for wavelengths of 750–850 nm.
**Fig. S3** Simulated reflectance spectra of PNPA structures with Ti (1 nm)/Au (23 nm) and Ti (1 nm)/Ag (20 nm)/Au (3 nm) layers. The PNPA with the Ag layer exhibited a higher reflectance and a distinct spectrum within the visible range; this resulted in better visual perception.
**Fig. S4** Experimentally determined transmissions of the PNPA with the light incident from both sides. No noticeable difference was observed in the transmissions.
**Fig. S5** Experimentally determined transmissions of the PNPA for liquids with refractive indices of 1.30–1.39 in steps of 0.01 RIU.
**Fig. S6** Experimentally determined transmission spectra of the PNPA without nanodisks for liquids with refractive indices of 1.3, 1.36, and 1.39. In the case of the structure composed of a resist nanopillar array and a perforated metal film, the sensitivity of $\text{WA}(1.0)_{\text{medium}}$ and SRSPP was only 125 and 225 nm/RIU, respectively. The sample was realized by removing the top metal layer with adhesive tape.