## Periodic planar Fabry–Perot nanocavities with tunable interference colors based on filling density effects: supplement

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## Supplementary Information for

## Periodic Planar Fabry-Pérot Nanocavities with Tunable

## **Interference Colors Based on Filling Density Effects**

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Increasing diameter D

**Fig. S1.** Optical micro-images of the fabricated circular-shaped F-P nanocavity arrays at the fixed exposure dose but with varying diameter *D* and period *P* before (a) and after (b) the deposition of the top 6-nm Ni layer. Each  $20 \times 20 \ \mu\text{m}^2$  tile was spaced 5  $\mu\text{m}$  away from the neighboring square-shaped tile. The diameter *D* varies from 200 nm to 500 nm with an increment of 20 nm in the horizontal axis and the period *P* ranges from 220 nm to 600 nm with an increment of 20 nm and then from 600 nm to 1  $\mu\text{m}$  with an increment of 40 nm in the vertical axis. Scale bars: 50  $\mu\text{m}$ .



**Fig. S2.** (a) Schematic illustrating the architecture of Al-based plasmonic colors. Isolated Al nanodisks with the thickness of 20 nm sit atop HSQ nanopillars. The substrate is coated with 100-nm-thick Al backreflector. The diameter and gap size of the Al nanodisks are denoted as D and g, respectively. (b) Bright-field optical micrograph of the generated full-color palette by patterning a series of nanodisk arrays with diameters of 50 to 240 nm and interdisk gaps of 30 to 260 nm at a same exposure dose (the thickness of HSQ is ~ 90 nm).