Surface-enhanced Raman scattering (SERS) spectroscopy on localized silver nanoparticles decorated porous silicon substrate

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Figure S1. Image binarization of porous silicon (PS) FE-SEM images

Figure S2. (a) Schematic illustration and fluorescent image of the coffee-ring shape and uniform analyte distribution after sample (R6G) drying. (b) three (boundary, transition, and central) distribution regions and their corresponding SERS spectrum of 10 µL, $10^{-5}$M R6G sample. The 2x2 cm² Ag-PS surface is generated by 5 mins MACE.
(a) Hydrophobic coating (Ultra-Ever Dry)

Figure S3. Schematic illustration of using (a) hydrophobic coating and (b) Teflon film to constatin the droplet from spreading on a hydrophilic Ag-PS surface and SER spectrum. The hydrophobic coating process starts with first attaching an 800 μm radius shadow mask on the PS surface. We then coat with a bottom adhesive layer followed by a top hydrophobic layer. For Teflon film, we use needle tip punching the Teflon film generating ~600 μm radius opening. Then attach to the PS surface.

(b) Teflon hydrophobic film

Figure S4. x1.8k (left) and x10k FE-SEM images showing partial deposition of silver nanoparticles in the transition region on porous silicon surface.
Figure S5. Photograph images of sample (water) droplets deposit on the LocAg-PS pad on (a) 5 mins (b) 10 mins and (c) 15 mins PS base substrates with 1µL and 2µL Ag-Drop deposition condition.