

**[Supporting Information Available]**

**Sol-gel derived nanoporous compositions for entrapping small molecules and its outlook towards aptamer screening**

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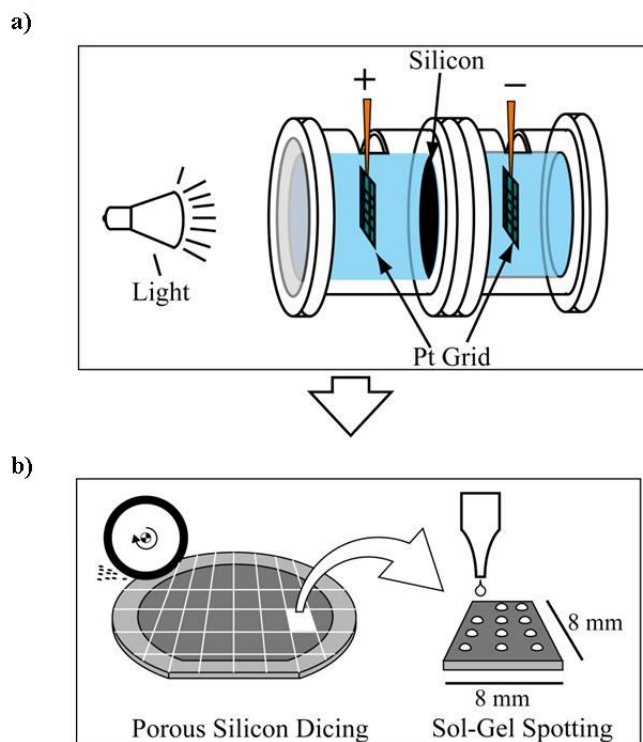
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## Supplementary Figure 1.

### Preparation of sol-gel droplet-integrated porous silicon chip

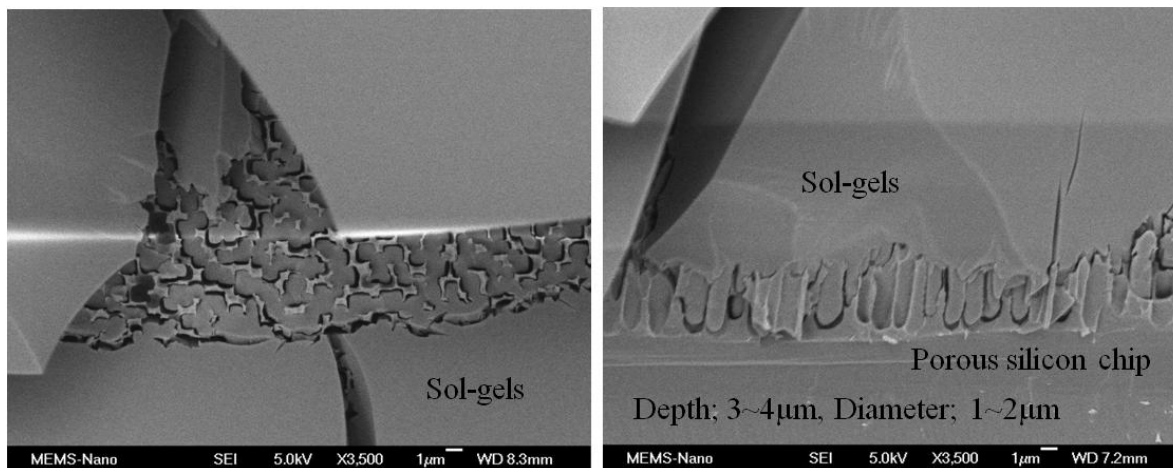


Porous silicon surfaces were fabricated by anodic etching of monocrystalline silicon in hydrofluoric acid (HF). To prepare a sol-gel integrated assay chip, porosified silicon wafers were manufactured by dicing. The target chemical mixed with sol-gel mixture was spotted in arrays onto the chip surface with 4 nl per single spot.

[S2]

## Supplementary Figure 2.

### Super-porous surface structure



Thinner voids between the condensed sol-gel matrix and the surface of the micropores in the porous silicon were observed homogeneously in the super-porous surface.

### Supplementary Table 1.

Yield of spots after washing and scratching on the porous Si and PMMA surface

**Table 1. Yield of spots after washing and scratching on the porous Si and PMMA surface**

	Spotting	Washing	Scratching
Porous Si	64 (8x8)	64 (100%)	63 (98.4%)
PMMA	64 (8x8)	0 (0 %)	0 (0 %)

\*Spotting : number of sol-gel spots arrayed

\*\*Washing : number of sol-gel spots attached/remained after washing with buffer

\*\*\*Scratching : number of sol-gel spots attached/remained after scratching with pipett tips.

Table 1 shows adhesiveness of sol-gel spots on porous silicon surfaces after washing sol-gel spots by buffer solution and scratching them by a pipett tips. Using 64 sol-gel spots both on porous Si surface and PMMA surface, while all of spots were washed out or detached on PMMA surface, on porous silicon surface, over 98 percent of sol-gel spots were still attached. This supplementary table 1 shows that sol-gel adhesiveness is greatly improved on porous silicon surface.