## Supplementary Information

Multi-layered stacks of fluorescent dye-doped silica nanoparticles decorated by gold nanoparticles for solid-phase optical biosensing

Seong Yoon Lim<sup>a</sup>, Jae Hong Kim<sup>a</sup>, Joon Seok Lee<sup>a</sup>, Junhyoung Ahn<sup>b</sup>, Min-Gon Kim<sup>b</sup>, and Chan Beum Park<sup>a</sup>,\*

"Advanced Photonics Research Institute and Graduate Program of Photonics and Applied Physics, Gwangju Institute of Science and Technology, Gwangju 500-712, Republic of Korea

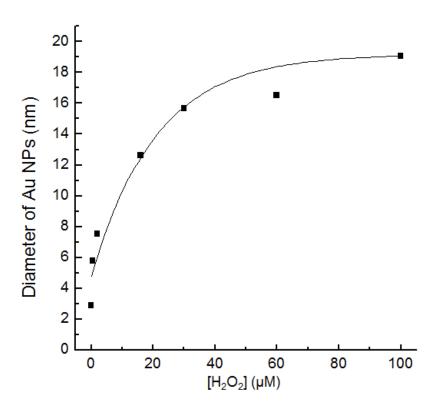


Fig. S1. The diameter of Au NPs on FSN-Au NP probes after the growth reaction with different  $\rm H_2O_2$  concentration. The diameter was determined by calculating the average diameter of 30 Au NPs grown on single FSN according to TEM images. For the Au NP growth reaction, FSN-Au NPs and HAuCl<sub>4</sub> (0.2 mM) in 10 mM phosphate buffer (pH 7.0) were reacted with  $\rm H_2O_2$  from 0 to 100  $\mu$ M at 37 °C for 20 min.

<sup>&</sup>lt;sup>a</sup> Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology 335 Science Road, Daejeon 305-701, Republic of Korea <sup>b</sup> Advanced Photonics Research Institute and Graduate Program of Photonics and Applied