## Ultrasensitive Detection of Cytokines Enabled by Nanoscale ZnO Arrays

Viktor Adalsteinsson<sup>1</sup>, Omkar Parajuli<sup>1</sup>, Stephen Kepics<sup>1</sup>, Abhishek Gupta<sup>1</sup>, W. Brian Reeves<sup>2</sup>, and Jong-in Hahm<sup>1,\*</sup>

- 1) Department of Chemical Engineering, The Pennsylvania State University, 160 Fenske

  Laboratory, University Park, Pennsylvania 16802.
- 2) Division of Nephrology, The Pennsylvania State University College of Medicine, Milton S.

  Hershey Medical Center, Hershey, Pennsylvania 17033.

## **Supporting Information**

Fluorescence images of IL-18 and TNF $\alpha$  multiplexing assays performed on a 20  $\mu$ m striped ZnO NR platform. The ZnO NR platform was treated firstly with a mixture of primary IL-18 and TNF $\alpha$  antibodies. After carrying out BSA blocking, a mixture of IL-18 and TNF $\alpha$  with a predetermined concentration ratio was introduced to the assay platform. Then, a secondary, labeled IL-18 and TNF $\alpha$  antibodies were reacted on the platform. Panels shown in A and B were obtained from the same ZnO NR platform area when the concentration ratio between IL-18 and TNF $\alpha$  used in the assay was 20:1 and 2:1, respectively. Top and bottom panels show fluorescence from the IL-18 and TNF $\alpha$  channels, respectively.

