Nanosphere Monolayer on a Transducer for Enhanced Detection of Gaseous Heavy Metal

Ylias M. Sabri[†], Ahmad Esmaielzadeh Kandjani[†], Samuel J. Ippolito and Suresh K. Bhargava*

Centre for Advanced Materials and Industrial Chemistry (CAMIC), School of Applied Sciences, RMIT

University, GPO Box 2476V, Melbourne, VIC 3001 (Australia).

*Email: <u>suresh.bhargava@rmit.edu.au</u>

Phone: +61 3 99252330

RECEIVED DATE (to be automatically inserted after your manuscript is accepted if required according to the journal that you are submitting your paper to)





Figure S1 High resolution electron microscope image (SEM) of a) Au-control and b) Au-MNM showing the difference in the obtained topology due to the underlying PSNS spherical shape. The circled area points out the metal edges that stick out of the sides of the PSNS, which may contain surface defects that have high affinity towards Hg⁰ vapor [59].



Figure S2 XPS spectra of Ag-MNM for Ag 3d core level a-1) before and a-2) after Hg⁰ exposure; Au-MNM for Au 4f core level b-1) before and b-2) after Hg⁰ exposure; and Hg 4f core level of c-1) Ag-MNM and c-2) Au-MNM after Hg⁰ exposure.