# Support Layer Influencing Sticking Probability: Enhancement of Mercury Sorption Capacity of Gold

*Ylias M. Sabri, Samuel J. Ippolito\*, Suresh K. Bhargava\**

Centre for Advanced materials & Industrial chemistry (CAMIC), School of Applied Sciences, RMIT University, Melbourne, VIC 3001, Australia

E-mail: samuel.ippolito@rmit.edu.au, suresh.bhargava@rmit.edu.au,

## Supporting Information
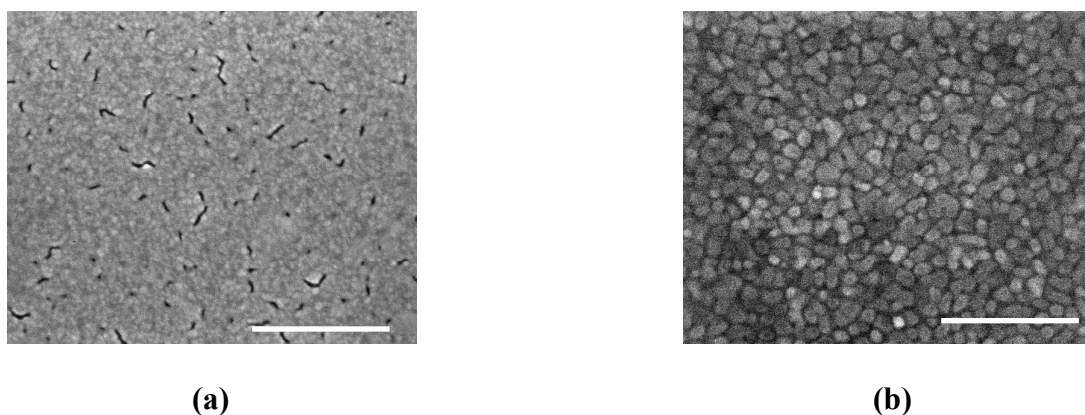


(a)                                        (b)

Figure S1

**Figure S1.** SEM images showing 40 nm thick Au film deposited on 20 nm $SiO_2$ support layer (a) and 20 nm Ti support layer (b). Scale bars represent 500 nm. The image in (a) shows much smaller grains and surface voids which could potentially have high number density of surface defects and therefore $Hg^0$ sorption sites resulting in its enhanced mercury sorption capacity.
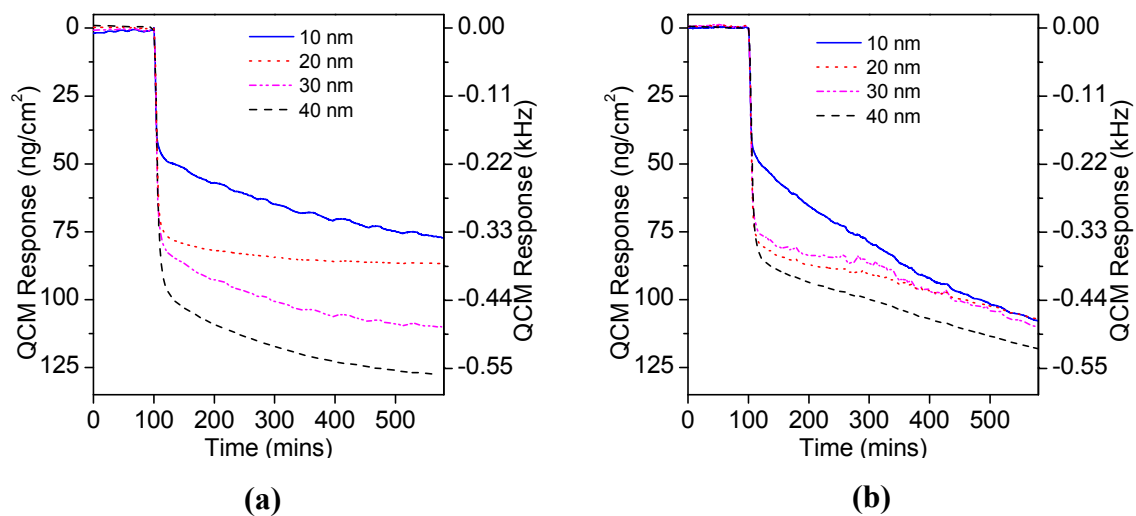
Figure S2

**Figure S2.** QCM response showing the elemental mercury sorption capacity of Au films having a thickness of 10, 20, 30 and 40 nm with $SiO_2$ as the support material, exposed to $Hg^0$ concentrations of a) 3.65 mg/m$^3$ and b) 5.70 mg/m$^3$ at and operating temperature of 90°C.