

## Supplementary Information

### In situ controlled sputtering deposition of gold nanoparticles on MnO<sub>2</sub> nanorods as surface-enhanced Raman scattering substrates for molecular detection

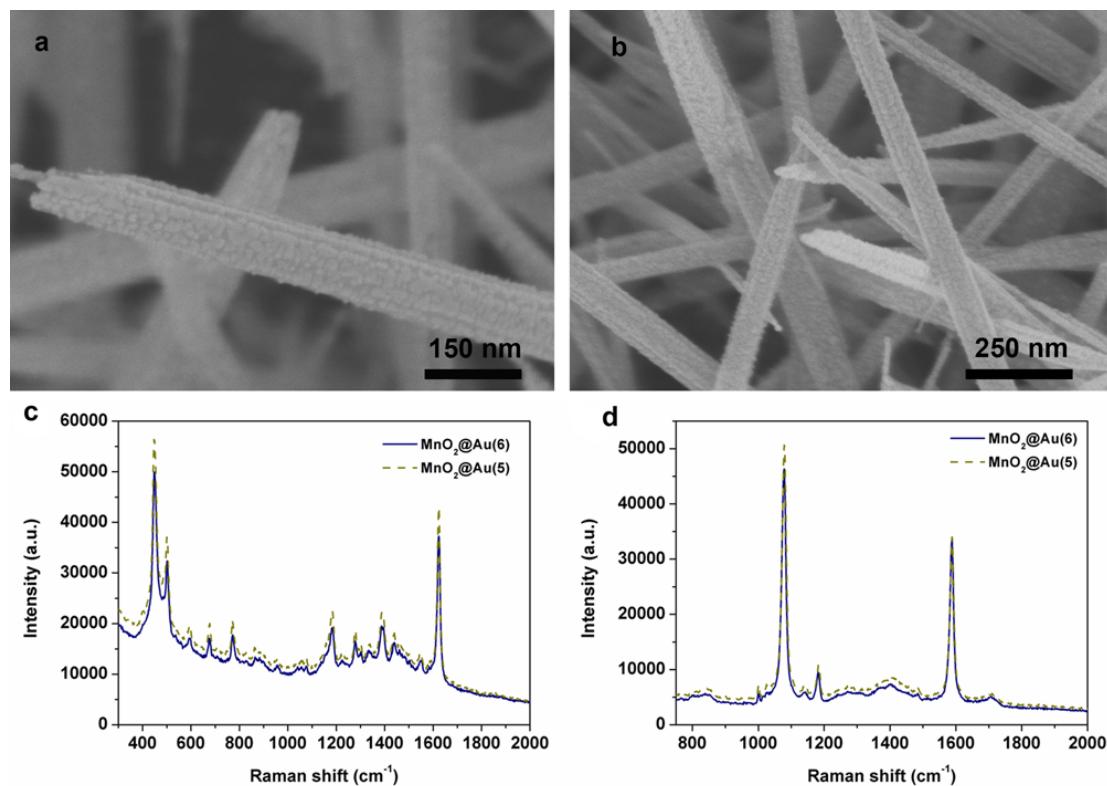
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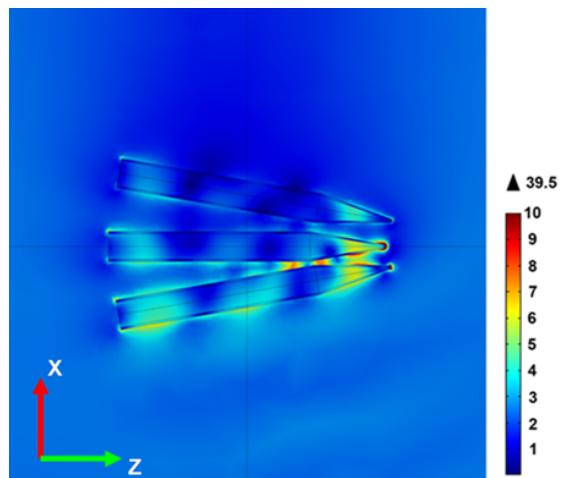
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**Fig. S1** (a), (b) SEM images of the sample MnO<sub>2</sub>@Au (6) and Raman spectra of (c) MB and (d) 4MBA on MnO<sub>2</sub>@Au (5) and MnO<sub>2</sub>@Au (6).



**Fig. S2** FEM simulation of the E-field intensity distribution of gold decorated  $\alpha\text{-MnO}_2$  nanorods with incident laser wavelength of 532 nm.