

Supporting Information

Surface-Enhanced Raman Scattering Spectra of Adsorbates on Cu₂O Nanospheres: Charge-Transfer and Electromagnetic Enhancement

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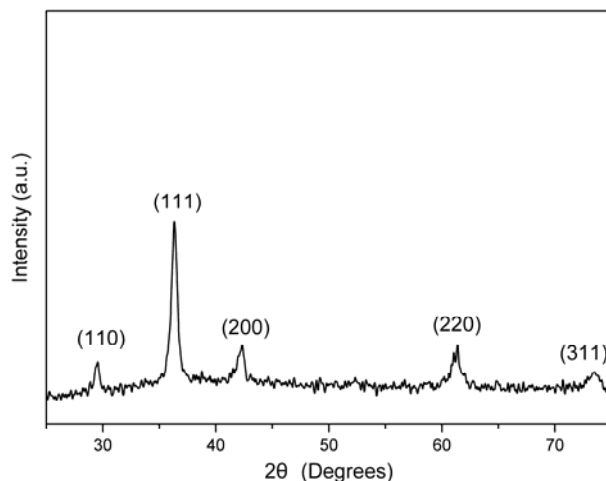


Fig. S1 XRD pattern of the as-synthesized Cu₂O nanospheres.

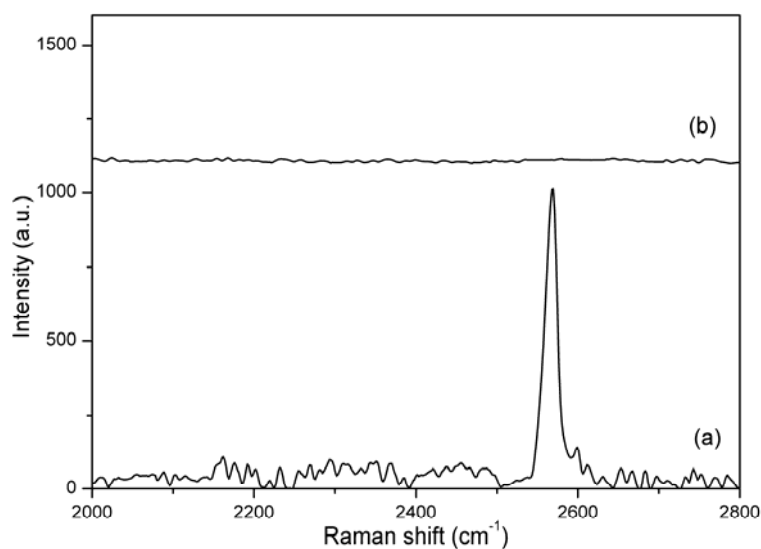


Fig. S2 (a) Raman spectra of 4-MBA powder with SH stretching mode at 2570 cm⁻¹, (b) 4-MBA adsorbed onto Cu₂O, the above mode disappeared.

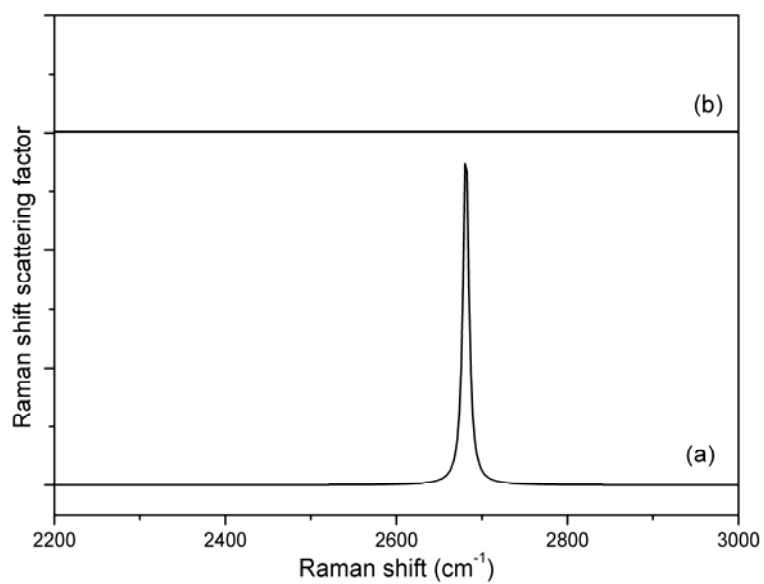


Fig. S3 Simulated results of (a) Raman spectra of pure 4-MBA with SH stretching mode at 2681 cm⁻¹, (b) 4-MBA adsorbed onto Cu₂O.

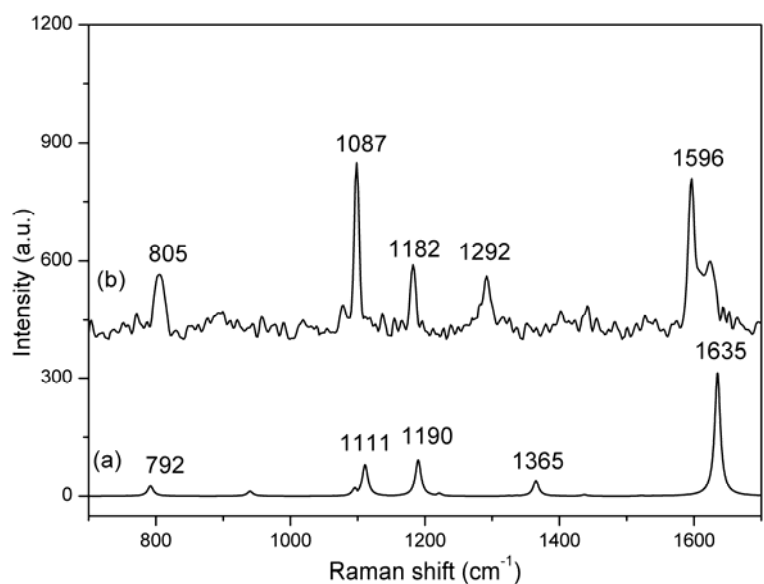


Fig. S4 calculated (a) and measured (b) normal Raman spectrum of the solid 4-MBA.

Table S1 Assignments of vibrations of solid 4-MBA and 4-MBA molecules adsorbed onto Cu₂O surfaces.

| Cal solid | Exp solid | Cal sers | Exp sers | assignment |
|-----------|-----------|----------|----------|---------------------------------|
| 792 | 805 | 791 | 851 | γ_{CCC} |
| 1111 | 1087 | 1089 | 1084 | <i>ring-breath</i> + ν_{CS} |
| 1190 | 1182 | 1189 | 1184 | δ_{CH} |
| | 1292 | 1216 | | δ_{CH} |
| 1365 | | 1363 | 1410 | γ_{COH} |
| | | 1516 | 1489 | δ_{CH-as} |
| 1635 | 1596 | 1630 | 1586 | $\nu_{CC-ring}$ |