Electronic Supplementary Material (ESI) for Journal of Materials Chemistry
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ESI

Microwave-assisted, surfactant-free synthesis of air-stable copper nanoparticles and their SERS study

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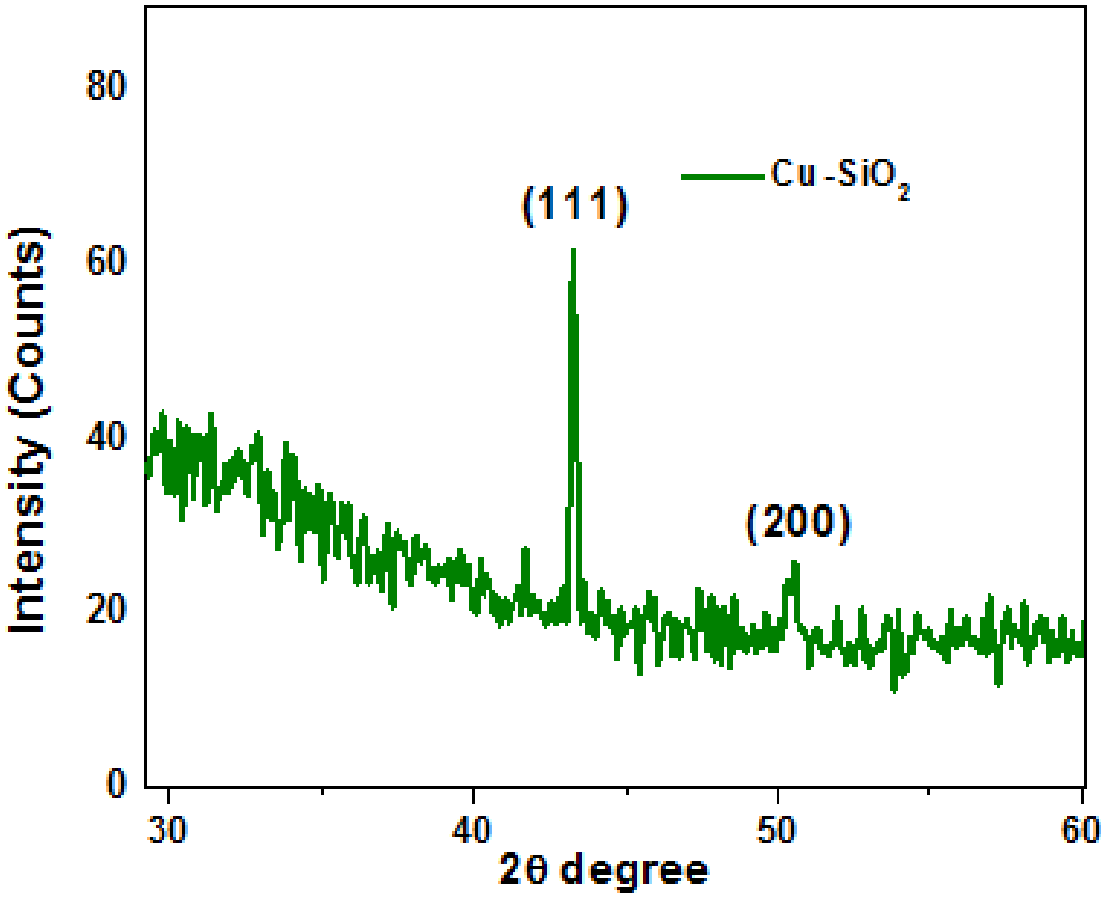

Fig. S1: Powder XRD pattern of Cu-SiO_2

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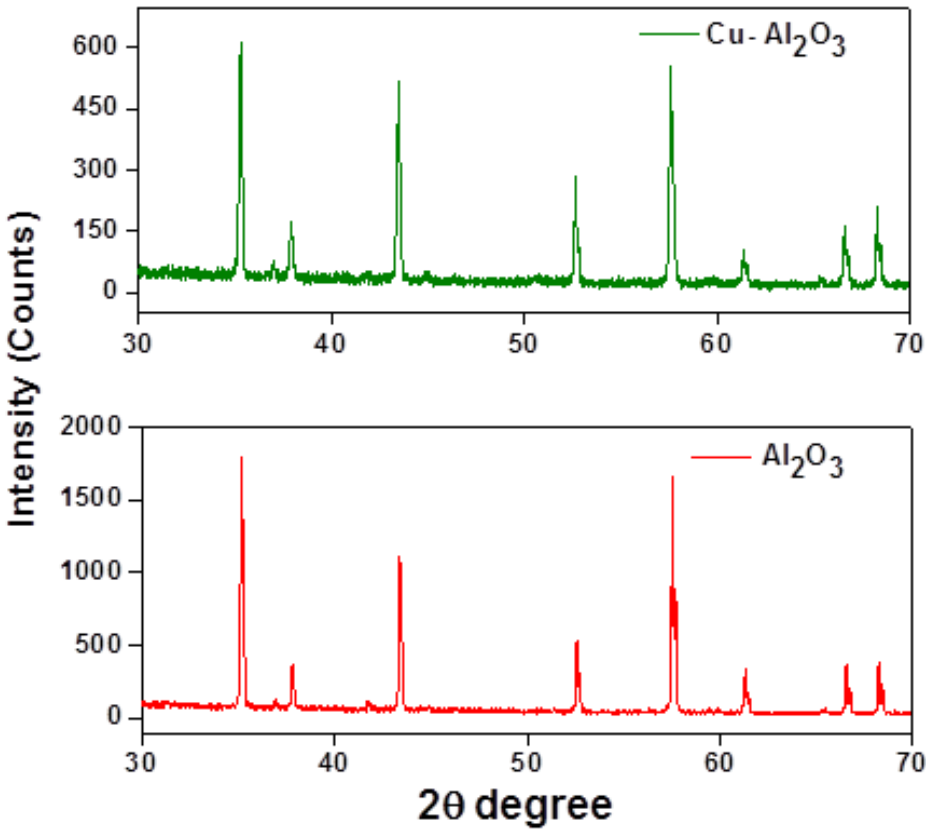

Fig. S2: Powder XRD pattern of Al_2O_3 and Cu-Al_2O_3

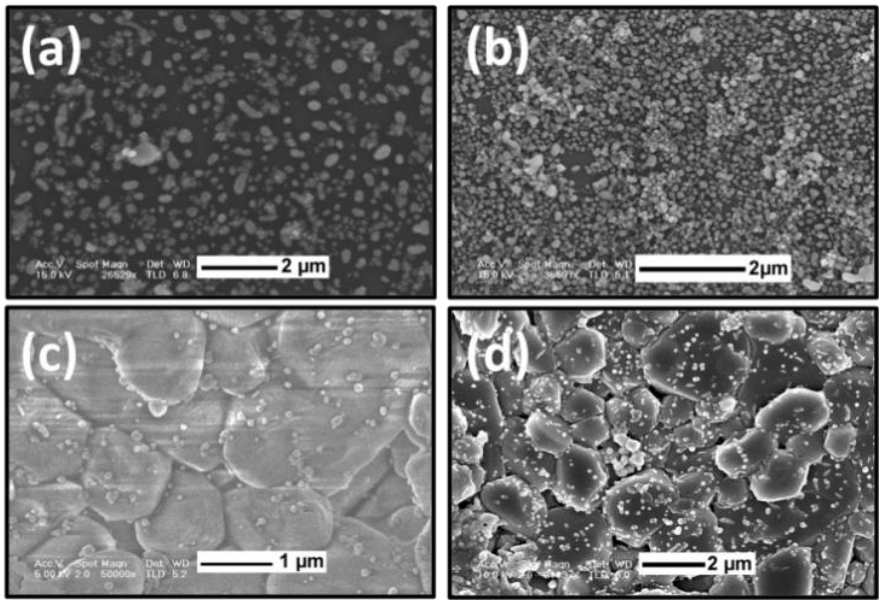

Fig. S3: FESEM images (a & b) Cu / SiO_2 and (c & d) Cu / Al_2O_3 nanostructures. (a & c are obtained after 5 minutes) and (b & d are obtained after 10 minutes)

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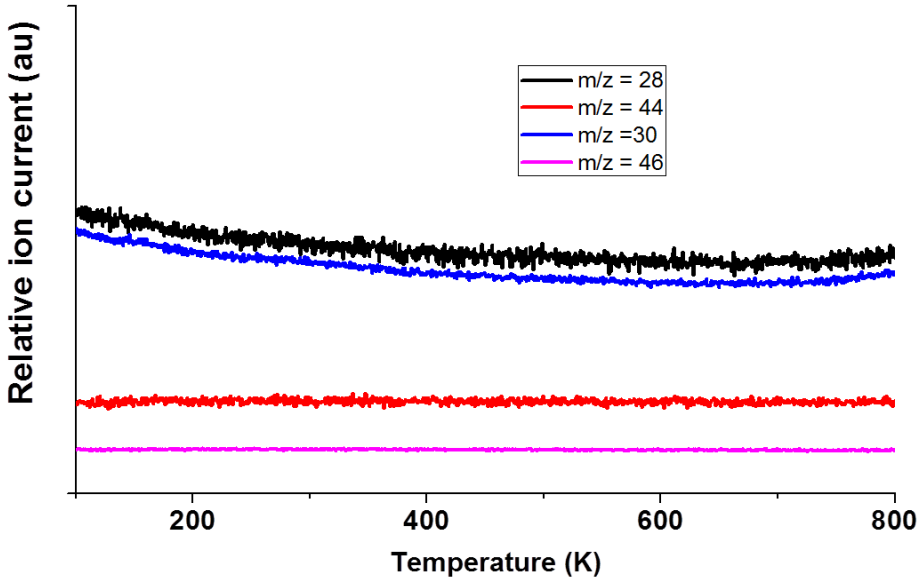

Fig. S4: Mass spectra of copper nanostructures under oxygen ambient

Synthesis of PVP stabilised Copper nanoparticles: In a round bottom flask, 50 ml reaction mixture of 26.2 mg $Cu(acac)_2$ and 0.05 g of PVP , dissolved in benzyl alcohol was exposed to microwaves at 800 watt (100%) for a duration of two minute under reflux condition. The TEM sample was prepared directly from the colloidal solution of PVP stabilized copper nanoparticles.

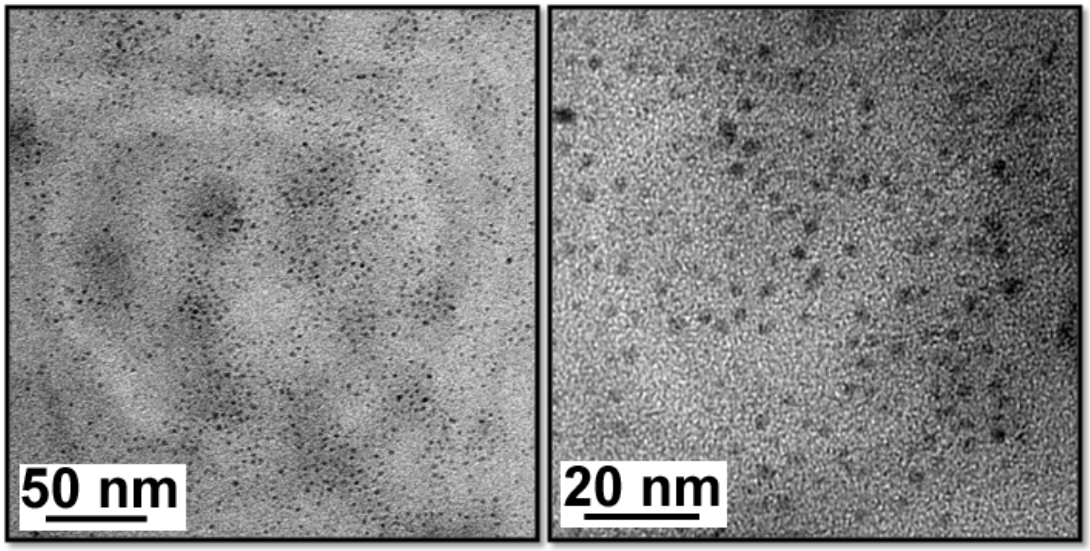

Fig. S5: TEM image of PVP stabilized copper nanoparticles

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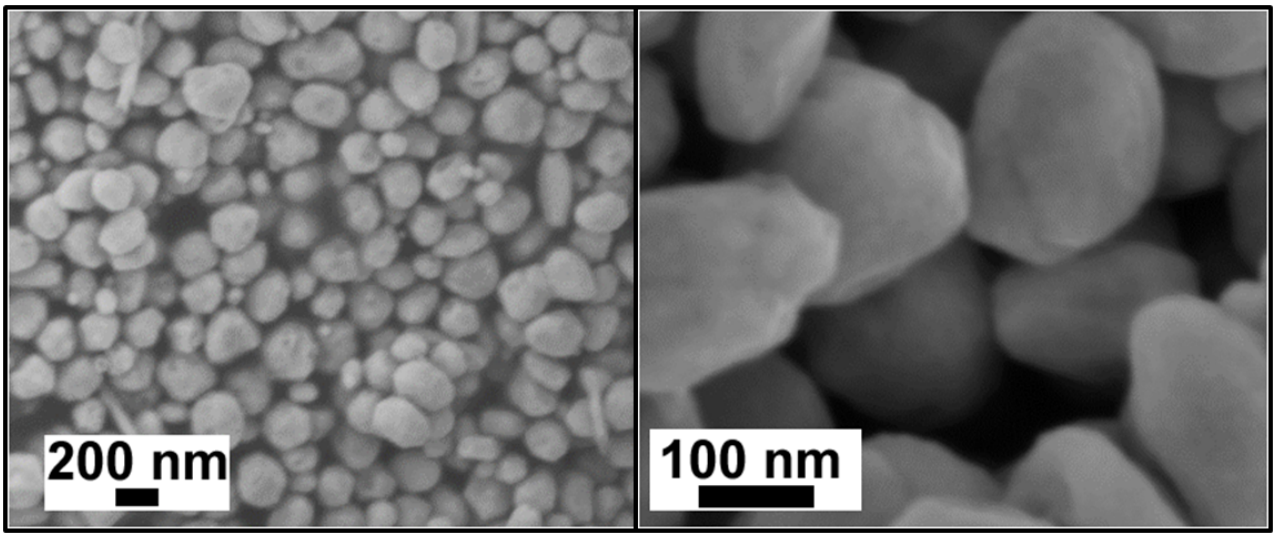

Fig. S6: FESEM (Low and High magnification) images of Cu(0) nanostructures

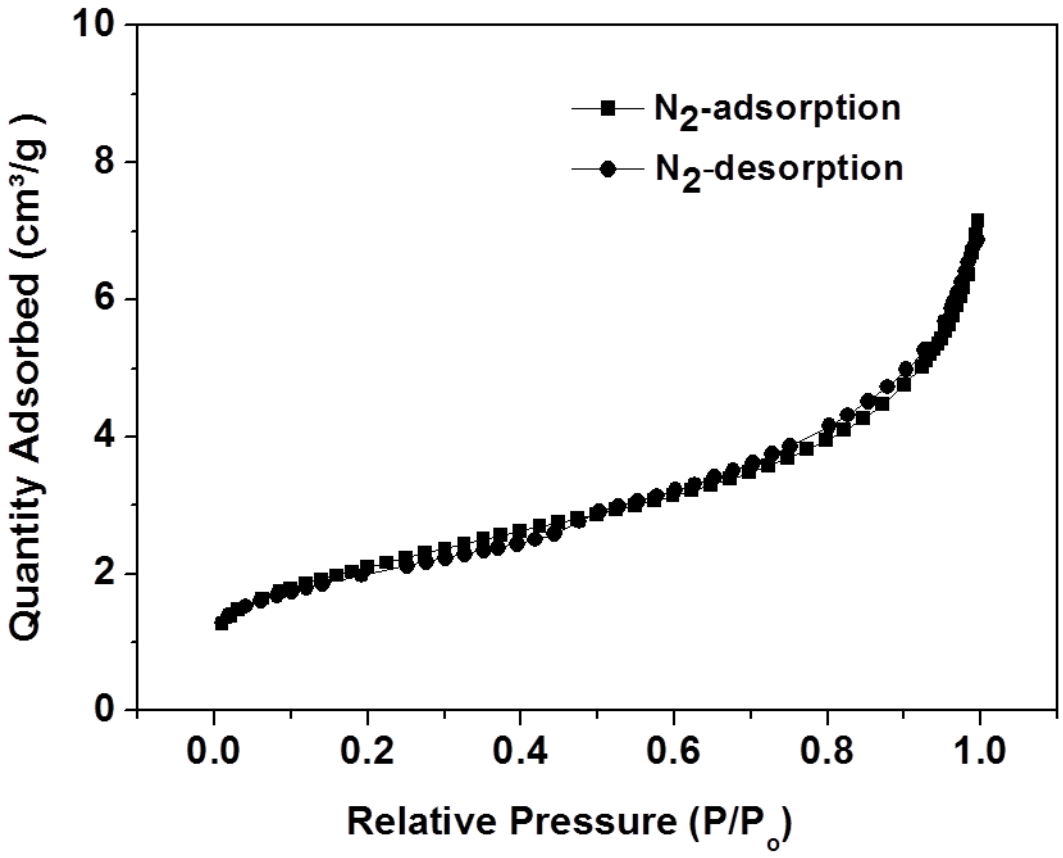

Fig. S7 N_2-physisorption isotherm for Cu nanostructures (powder)