# Investigation of dual plasmonic core-shell Ag@CuS nanoparticles for potential SERS guided photothermal therapy

# Supplementary information

# Synthesis of Ag@CuS NPs with different shell thicknesses.

In order to get different CuS shell thickness we varied the CuSO4.5H2O and thioacitamide concentration and total six samples were prepared. The details of the used concentrations are given below.

s1 : CuSO4.5H2O (4.2 × 10-6 mol) and thioacetamide (1.2 × 10-6 mol)

s2 : CuSO4.5H2O (5.4 × 10-6 mol) and thioacetamide (1.8 × 10-6 mol)

s3 : CuSO4.5H2O (7.2 × 10-6 mol) and thioacetamide (2.4 × 10-6 mol)

s4 : CuSO4.5H2O (9.0 × 10-6 mol) and thioacetamide (3.0 × 10-6 mol)

s5 : CuSO4.5H2O (10.8 × 10-6 mol) and thioacetamide (3.6 × 10-6 mol)

s6 : CuSO4.5H2O (12.6 × 10-6 mol) and thioacetamide (4.2 × 10-6 mol)

Out of six samples in the present work, we have adopted only Ag@CuS NPs with better core-shell morphology i.e. sample s3. (figure S1(c))