

Supporting information

Luminescent, Freestanding Composite Films of Au_{15} for Specific Metal Ion Sensing

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Supporting information 1

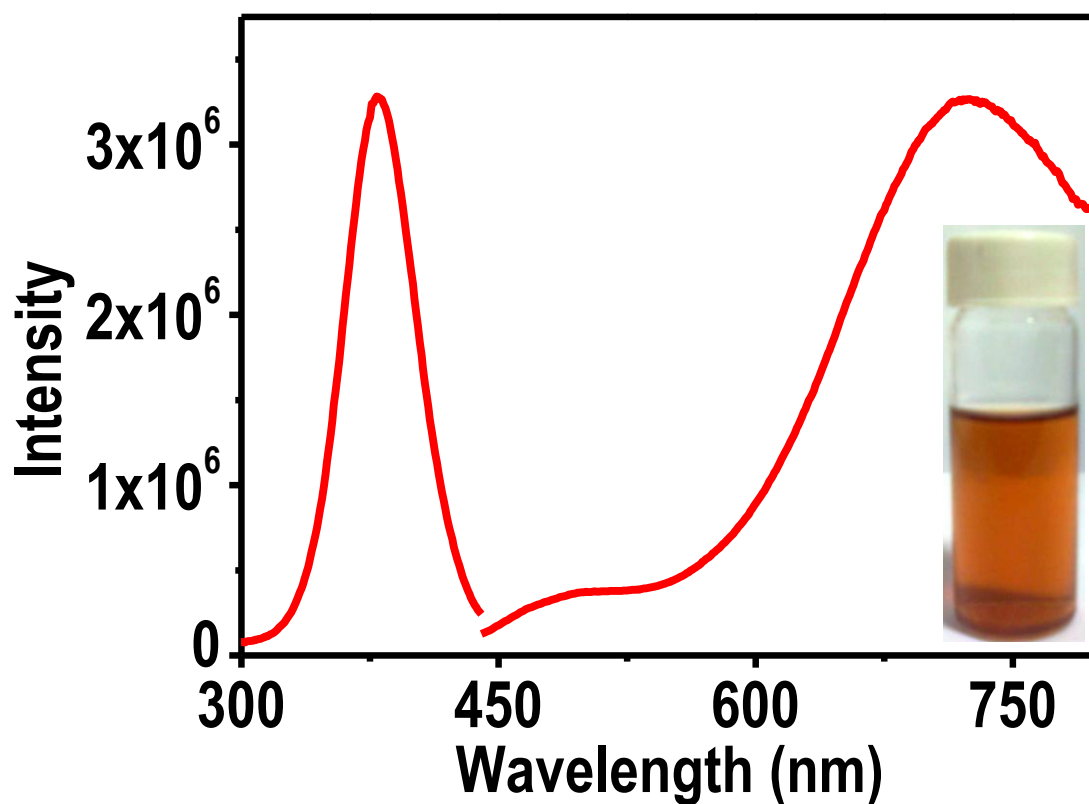


Figure S1. Excitation and emission spectra of Au₁₅ solution. Inset shows the photograph of Au₁₅ in solution phase under visible light. A photograph in UV light is given in Figure 3.

Supporting information 2

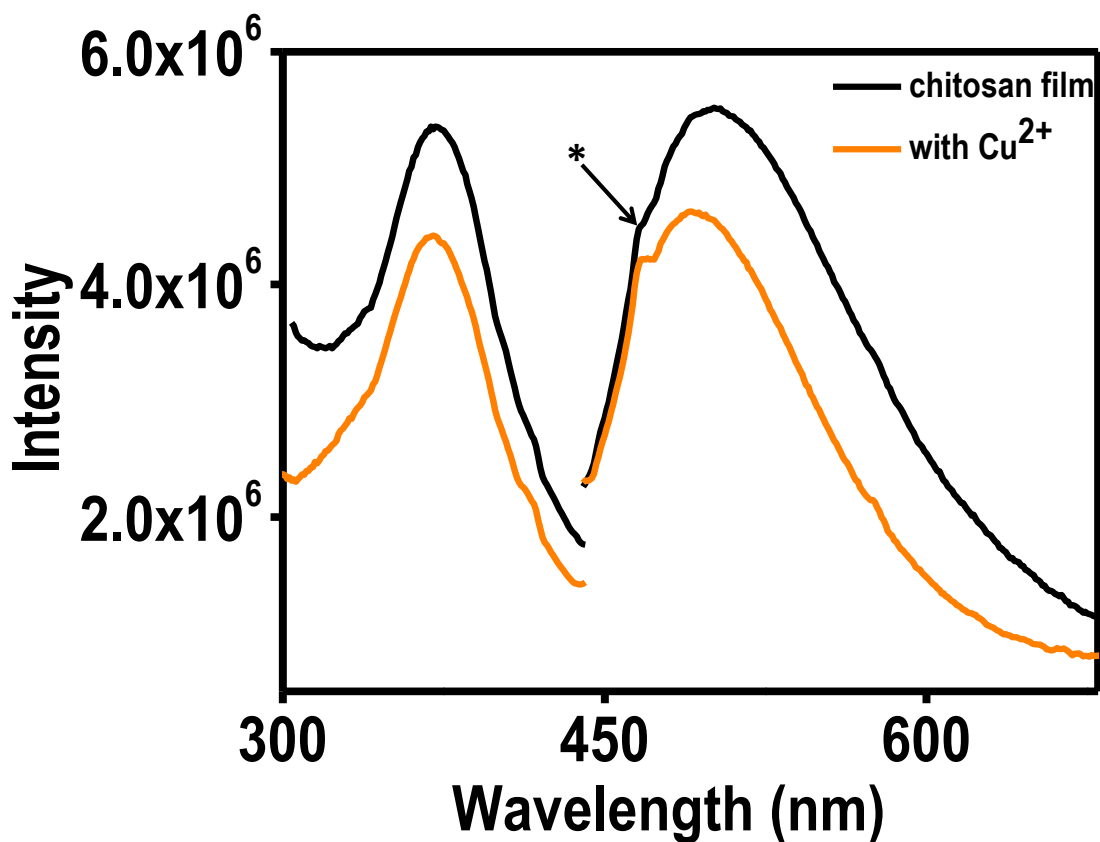


Figure S2. Photoluminescence spectra of parent chitosan film with and without Cu^{2+} ion (5 ppm). Peaks in UV and visible regions correspond to excitation and emission, respectively. The feature indicated with (*) is due to an unidentified impurity.

Supporting information 3

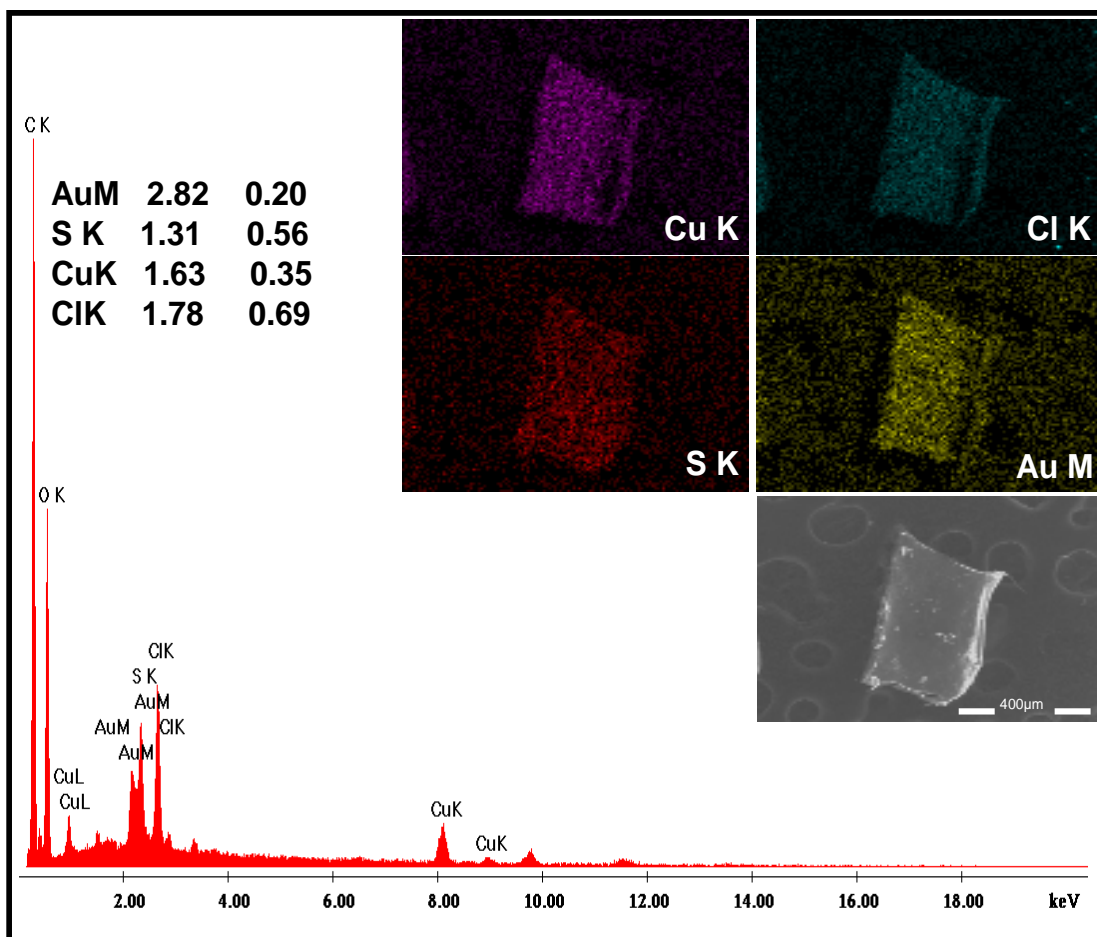


Figure S3. EDAX spectrum of the composite film exposed to CuCl_2 . Inset shows the SEM and EDAX image of the composite film which shows uniform elemental distribution of copper, gold, sulfur and chlorine in the exposed composite film.

Supporting information 4

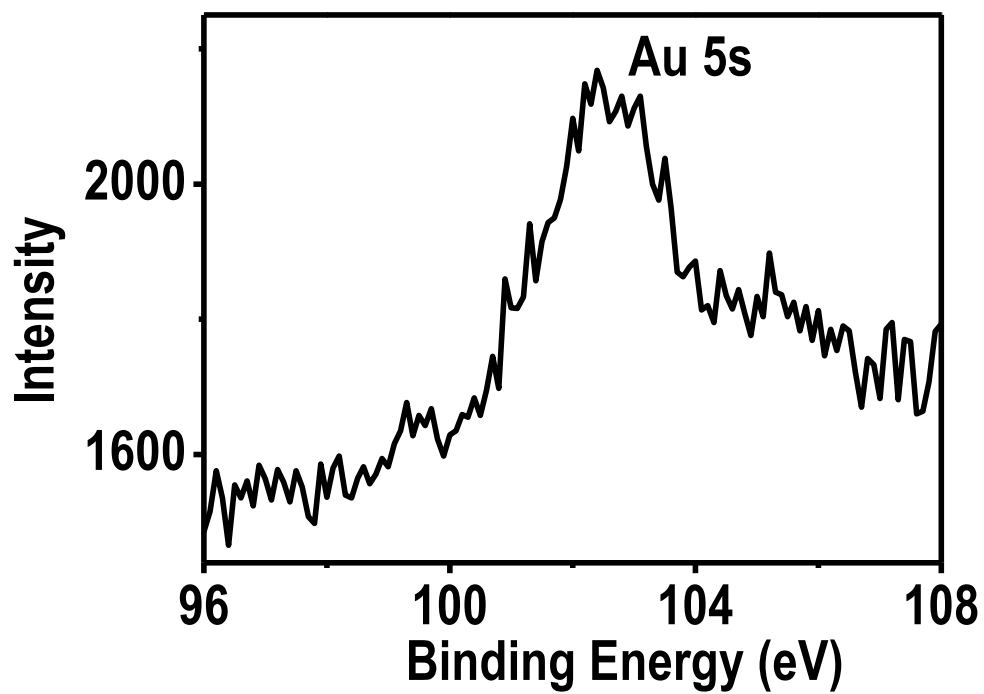


Figure S4. XP spectrum of Au₁₅@SG-βCD+Hg²⁺ sample in Hg 4f region. A peak corresponds to Au 5s is noticed whereas no Hg 4f feature is seen.

Supporting information 5

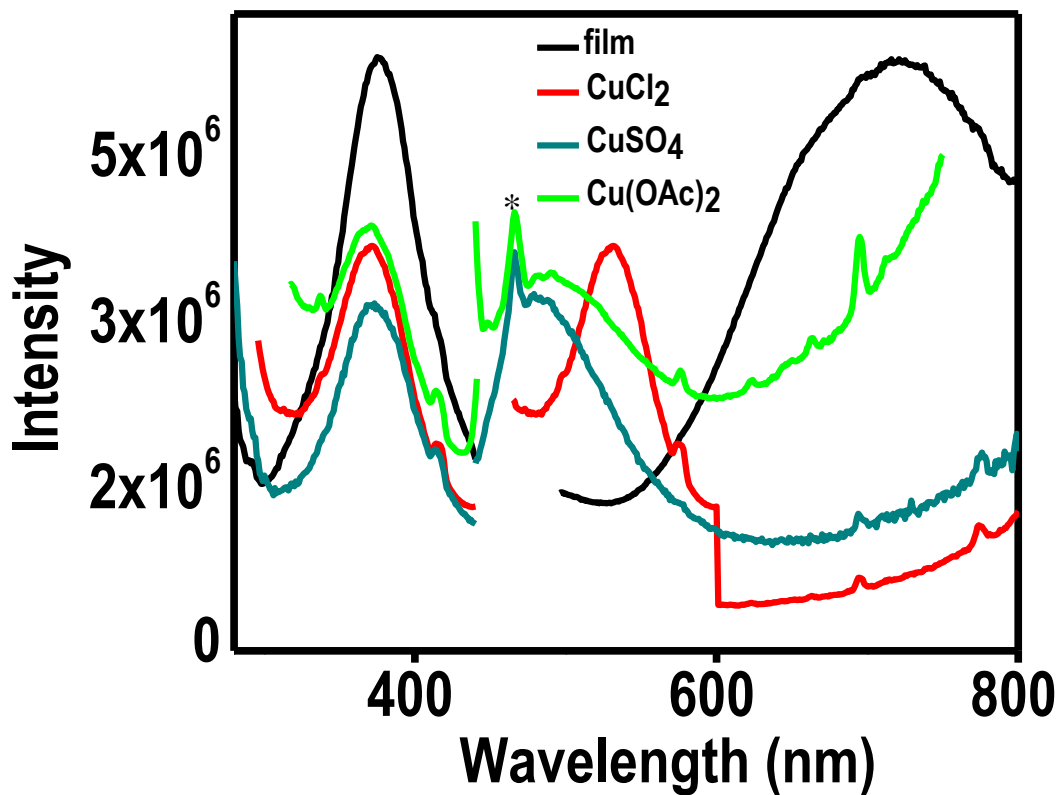


Figure S5. Photoluminescence spectra of the composite film exposed to different salts of Cu^{2+} ion in 1 ppm concentration. Peaks in UV and visible regions correspond to excitation and emission, respectively. Chloride, sulphate, acetate salts of copper shows a similar shift in their emission wavelength. The feature indicated with (*) is due to an unidentified impurity.

Supporting information 6

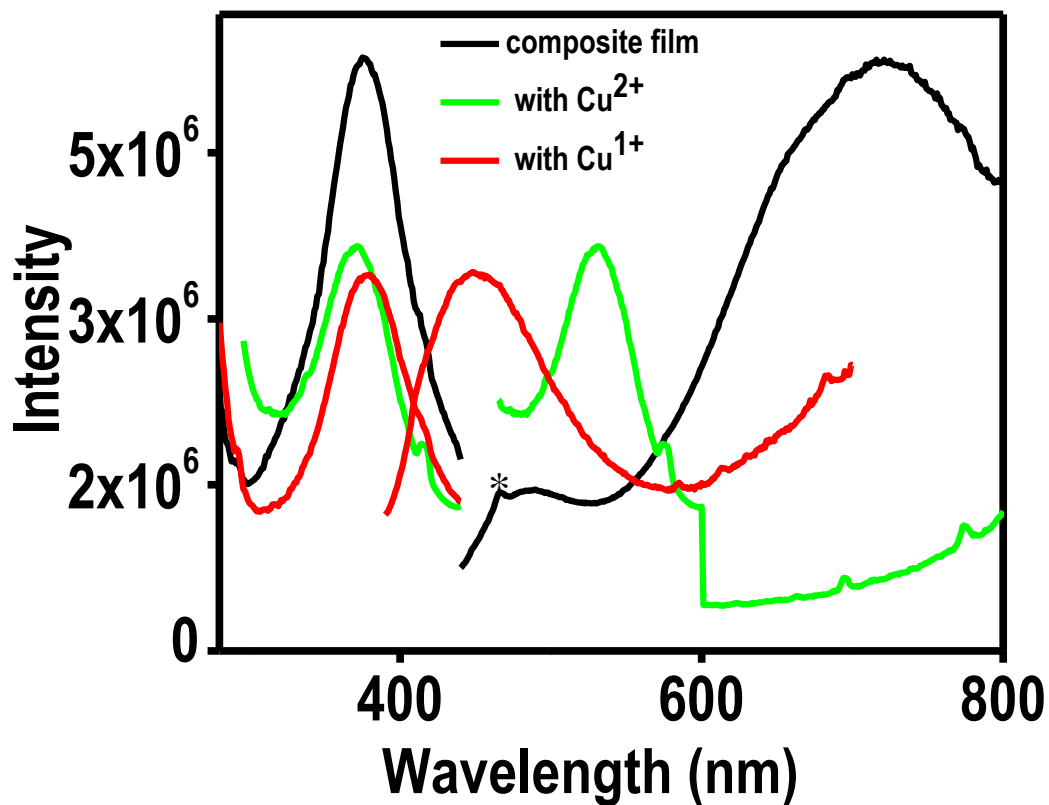


Figure S6. A comparison of the photoluminescence spectra of the composite film with chloride salt of Cu^{2+} and Cu^{1+} metal ions at 1 ppm concentration. Peaks in UV and visible regions correspond to excitation and emission, respectively. The feature indicated with (*) is due to an unidentified impurity.