Supporting Information

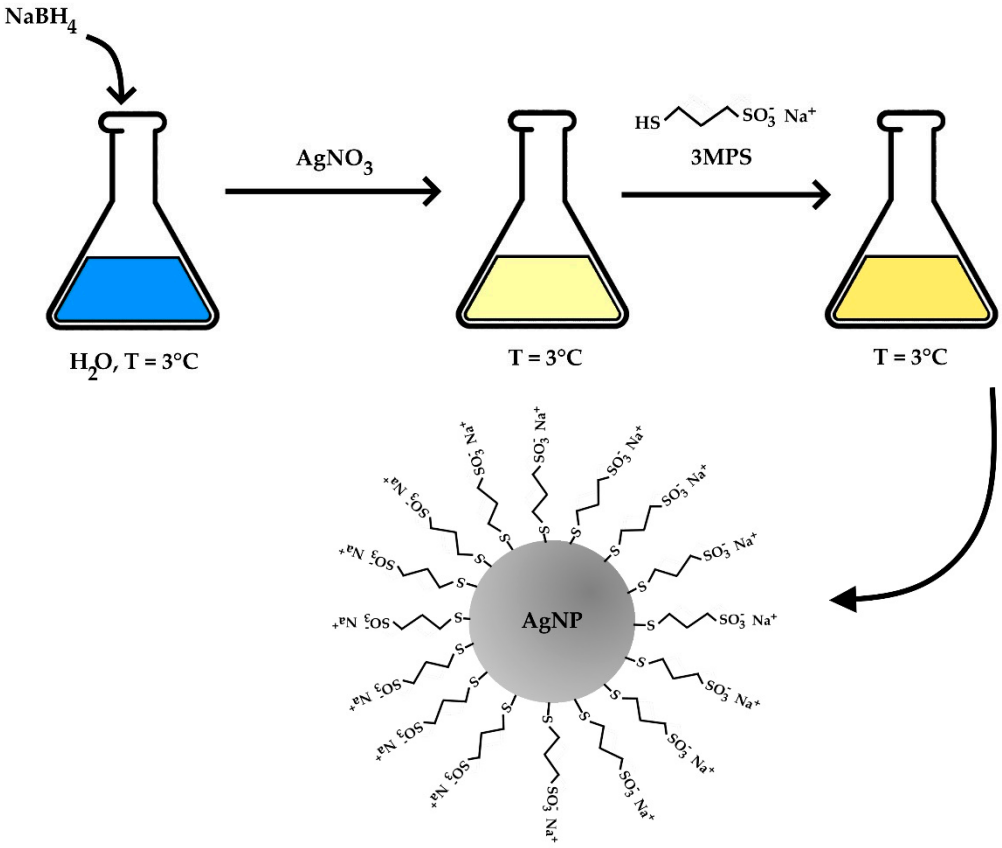

Figure S1. Schematic representation of the synthesis of AgNPs-3MPS.

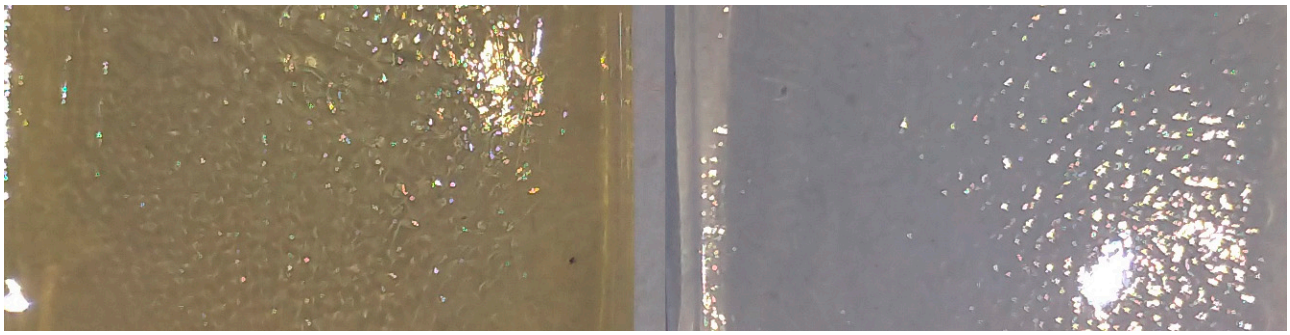

Figure S2. Picture of PEGDA-based hydrogels with AgNPs-3MPS: without Hg(II) interaction, left side, and after 24 h of interaction with Hg(II), right side.

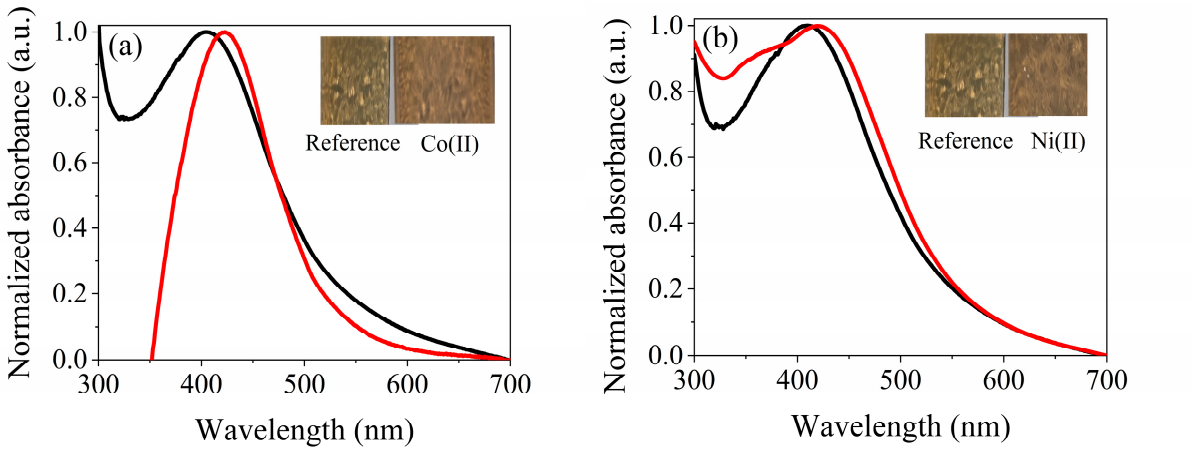

Figure S3. Normalized absorption spectra of PEGDA/AgNPS-3MPS matrices without contamination black curves and in presence of 1 mg/L of Co(II) (a) and Ni(II) (b), red lines.

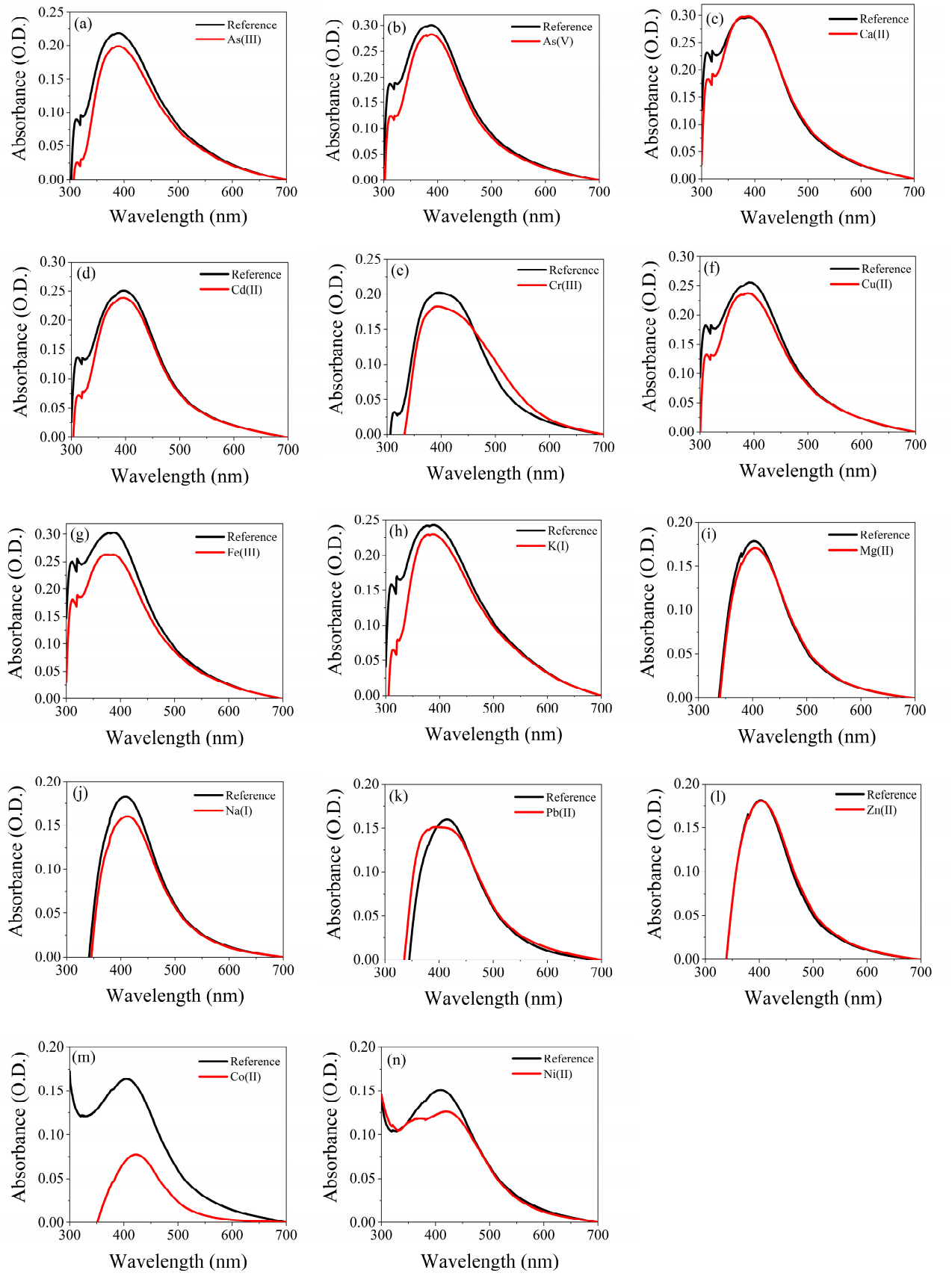

Figure S4. UV-Vis spectra of PEGDA/AgNPs-3MPS hydrogels with different metal ions at the concentration of 1 mg/L: (a) As(III); (b) As(V); (c) Ca(II); (d) Cd(II); (e) Cr(III); (f) Cu(II); (g) Fe(III); (h) K(I); (i) Mg(II); (j) Na(I); (k) Pb(II); (l) Zn(II), (m) Co(II); and (n) Ni(II).

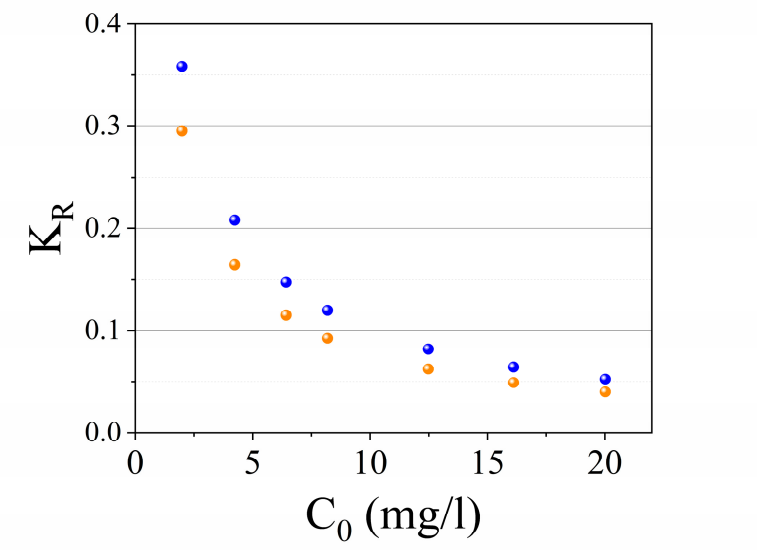

Figure S5. Separation factor as a function of initial concentration of Hg(II), and the blue points refer to undoped hydrogel, while orange points represent the AgNPs-3MPS-doped hydrogel.

Determination of the Limit Of Detection (LOD, 3σ)

To obtain the limit of detection, we started form determining the error (standard deviation, σ) of the blank, namely the value of the maximum of the adsorption band. By measuring several times the absorption spectrum, the standard deviation (σ) is calculated on the values of the maximum absorption. By definition, LOD is equal to 3σ, thus the standard deviation is triplicate and put into a system with the equation of the linear equation that coming from the linear fit. In our case, σ = 0.003, now exploiting the linear equation, we obtain 3σ = 1.147x -0.376, resolving for x we obtain a limit of detection equal to 0.3 mg/L.