

Fast gold recovery from aqueous solutions and assessment of antimicrobial activities of novel gold composite

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The structure of tetrachloroaurate anion

Tetrachloroaurate consists of the square-planar $[\text{AuCl}_4]^-$ anion. In order to gain an insight into the structural parameters, the structure of this complex anion was extracted from the crystal structure with refcode DUMGIC (structure of bis(tribenzylammonium) tetrachloro-gold(III) chloride), which is archived in the Cambridge Structural Database (CSD) [1,2]. Au-Cl bond lengths range from 2.258 to 2.288 Å (Figure S1), while the distances of chlorine atoms in trans positions are about 4.6 Å. Calculation of Solvent Accessibility for $[\text{AuCl}_4]^-$ anion was performed with probe radius of 1.4 Å, by using the software BIOVIA Discovery Studio Visualizer (v 17.2.0.16349). For the examined anion, it was calculated that its Surface Area is 146.296 Å² while the volume of the ion is 156.94 Å³.

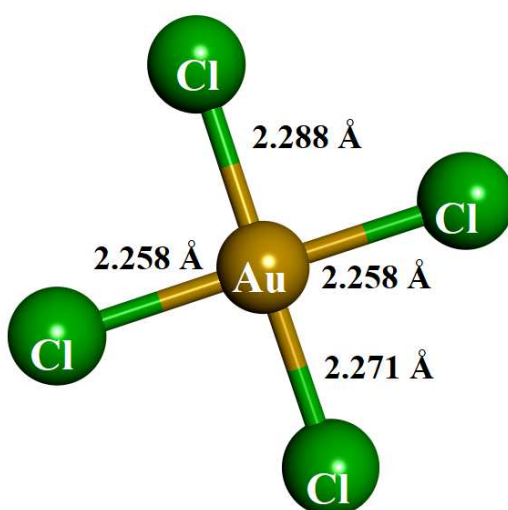


Figure S1. The structure of the $[\text{AuCl}_4]^-$ anion, with measured Au-Cl bond lengths.

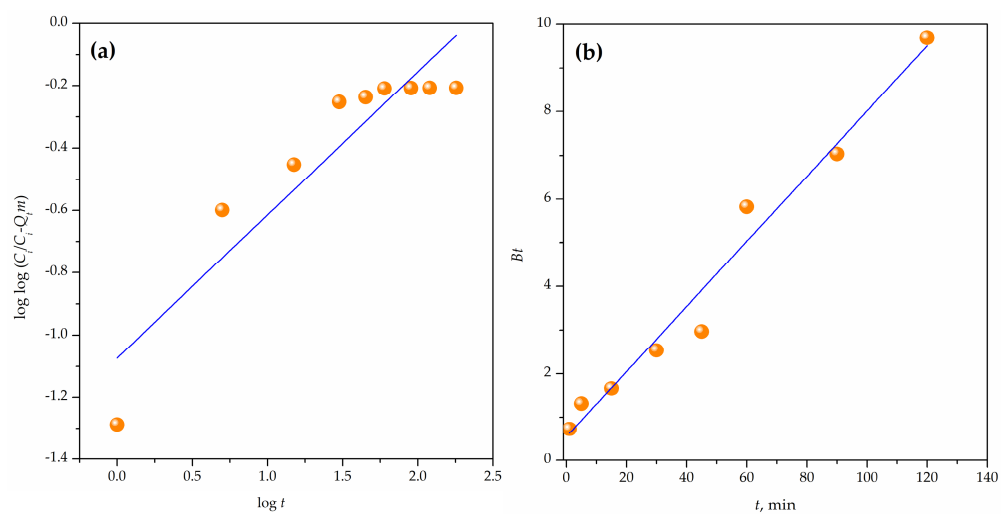


Figure S2. (a) Bangham and (b) Boyd plots for Au adsorption on pGME-en.

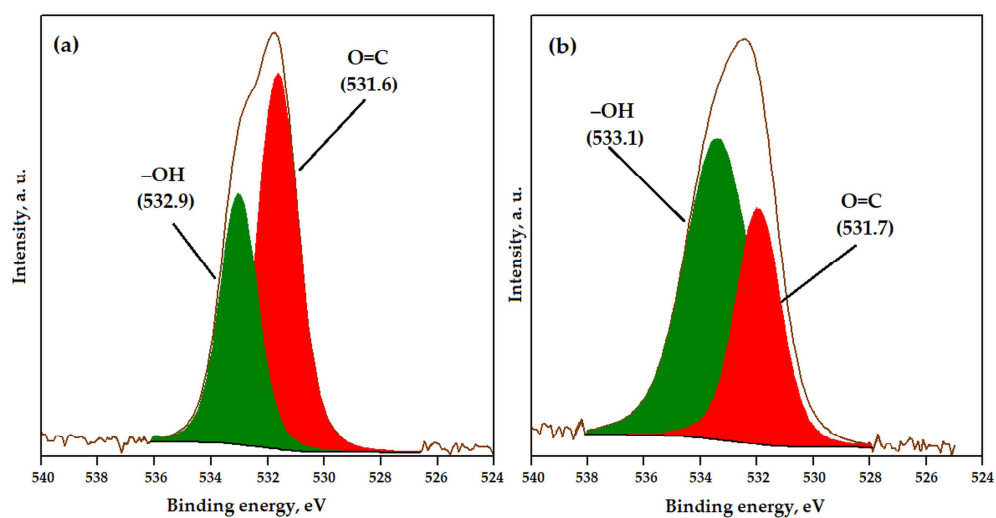


Figure S3. HRES O 1s spectra of pGME-en (a) before and (b) after gold adsorption.

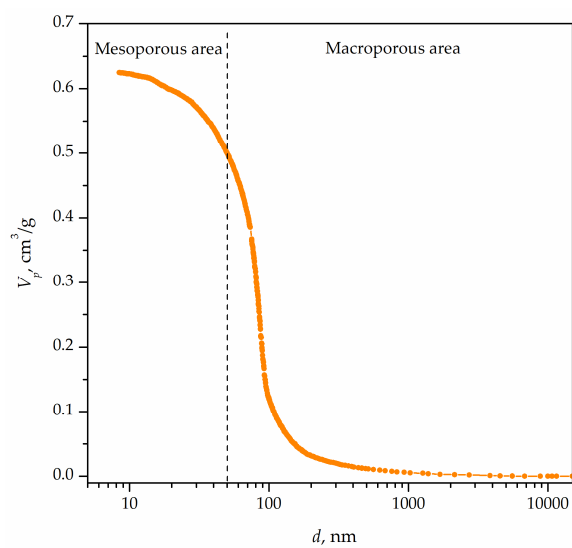


Figure S4. Cumulative pore size distribution curve for pGME-en/Au.

References

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2. Groom, C.R.; Bruno, I.J.; Lightfoot, M.P.; Ward, S.C. The Cambridge Structural Database. *Acta Cryst. B*, **2016**, *72*, 171-179.