

The manuscript entitled 'Efficient and selective adsorption of gold ions from wastewater with polyaniline modified by trimethyl phosphate: adsorption mechanism and application' by Wang et al. describe the synthesis of polyaniline based materials for the sequestration of gold metals from water. The manuscript needs careful revision of language and grammar, in the present state manuscript is not acceptable for publication in 'Polymers'. The scientific comments on the manuscript are given below:

1. The experimental section needs significant improvement. The amount in grams for all the materials needs to be converted into moles. The amount in grams has not much scientific significance for a chemical reaction.
2. For the synthesis of polyaniline, the schematics of polyaniline synthesis do not match with experimental details. In the experimental details, authors mention a second addition of aniline in reaction flask, after the addition of aniline, formaldehyde and HCl in iPrOH. Is this correct? If so why the first addition of aniline was not sufficient for the reaction? Again molar ratios of reactants are required to understand this reaction in detail.
3. The description of figure 1 in results and discussion section is wrong. FTIR cannot be expressed in eV!!! See line 107-111. The units of FTIR are cm^{-1} .
4. For SEM image in figure 2, the authors explain that modification with phosphate does not change the morphology of polyaniline. Why would authors expect a change in morphology by simply adding a functional group to a polymer? FTIR results do show the presence of phosphate in polyaniline, but what is the degree of modification? Have authors performed an NMR or other amine detecting tests such as Kaiser assay or TNBS assay to find the degree of modification of amine in polyaniline? If so what is the role of amine modification in gold sequestration?
5. The explanation of figure 3 is very vague. What is the net apparent charge of materials at different pH in the absence of gold? How does this change in the presence of gold at different pH? How does polyaniline behave differently than phosphate modified polyaniline?
6. What were the conditions (pH, salt presence, any organic waste presence) used for kinetics study? How does experimental data obtained for pseudo second order kinetics match with chemistry of the materials? How does the data correlate with polyaniline based materials alone? Are phosphate modified materials any better than polyaniline itself?
7. How does experimentally obtained q_m value correlated with predicted values of Langmuir isotherm?
8. The quality of SEM image in figure 9b is very poor, and needs to be improved for publication. Gold provide striking phase contrast in SEM or TEM and should be easy to capture than polyaniline alone
9. Are these materials recyclable? Recyclability of materials is important for their potential applications in field of water purification.