I appreciate the authors' great efforts to respond to my comments and improve the article. I have some follow-up comments.

Response to Page 4, "…because of its operational factor optimization capacity": The information of the merit is quite brief. Please show more details.

We appreciate the recognition of the effort expended in revising the manuscript. In response to this concern the opening paragraph of section 3.5 was modified to include more details about the advantages of conducting an orthogonal design. The changes are highlighted in red fonts in the updated manuscript.

Response to Page 5, Table 1: You showed coded and actual values, but there are three columns. It is very confusing. Please improve the table.

Table 1 has been updated to address the reviewer's comment.

Response to Page 5, Table 2: Since you now display predicted and experimental values both in the Results section. It is not good to split them. Please combine them together to become a single table.

Tables 4 and 5 are now combined into Table 4 and all subsequent table numbering was updated throughout the revised manuscript.

Response to Page 5, "The UV–vis spectra of CS-KAC-Ag are shown in Figure 1, the changes in color of the CS-KAC-Ag sample after 15 minutes (Inset Figure 1a) and 40 minutes…": You have not addressed all comments. Can you show instrumental measurements of colour, rather than the pictures judged by eyes?

Ans: Thank you for your suggestion. We have removed Figure 1a (photoirradiation at 15 minutes) so that now the result after 40 minutes photoirradiation is consistent with the graph.

Response to Page 8, "The resulting regression expression is provided in Eq. (8) used to predict the response variable Ypred in Table 2 considering the coded variables to preserve the orthogonality of the design": I may not express my meaning clearly. I mean that the fitted equation based on your results can only be valid in this specific situation. For other researchers, it cannot be used (while the method is applicable). In this case, the demonstration of the equation is not so important. If possible, you can make discussion and recommendations based on your results to show audience the key findings from your results, which could be utilized in other circumstance.

We appreciate the reviewer letting us know that we were not sufficiently clear. Eq. 8 is included to show the fitted model equation that is used to calculate the predicted values Ypred in Table 4. The results in the ANOVA regression support the external validity of the results (i.e., generalizability from this particular sample / situation to the larger population / all situations). The discussion was modified and presented in sections 4.2 and 4.3. The key findings are the

statistical significance of the X1, X2, X3 factors (i.e., main effects), and of the combination of factors X1*X3 and X2*X3 (i.e., interactions). The recommendation is presented in section 4.4 where we suggest that an optimal combination of factors does exist that maximizes the %, and that this combination can be calculated as we have shown in section 4.4, based on our sample data. To better clarify this material for the reader we have added similar verbiage in the manuscript shown in red fonts in sections 4.2 and 4.3. We hope that these answers would satisfactorily address the reviewer's concern.

Response to Page 10, Figure 4: A set of plots in a single figure usually requires a compound figure title, where you can describe each plot. Please refer to other papers.

[CD] The figure was changed as suggested by the reviewer.

Response to Page 10, Figure 4c: You can edit the plot as a picture. This allows you to wipe A, B, C and insert new letters.

[CD] The figure was changed as suggested by the reviewer.

Response to Page 12, "The optimum coded values for the initial metal concentration…which delivered a removal rate of 97.9 %": Please allow me to clarify my meaning. If you see X2 and X3, you will found they are between -1 and 1, which means the optimal values lie in the range you tested. However, X1 is -1. That is why I think the optimal value is out of the range of test. In this case, I think you need to set a broader range for X1, at least for the lower limit.

[CD]: The variables were coded between -1 and 1 inclusively (i.e., they can take the values -1 and 1). The optimum values were calculated using Minitab software and the result is presented in Figure 7 (in red fonts near the top). The optimum value for X1 came out to be -1 (or 10 mg/L) and this is a valid result since the coding scheme allowed values between -1 and 1 inclusively.

Response to Page 14, "Table 5 showed that the R2 values of pseudo-first-order and pseudo-second-order models…": I am sorry that I cannot find where you made such revision. Did previous studies report that such a process follows second-order kinetics? Please make discussion on this.

Ans : The discussion in paper was modified and **Table -5** was changed to **Table- 6.** Table 6 shows that the R^2 values of pseudo-first order and pseudo-second-order models were 0.850 and 0.998, respectively. The higher R^2 value for the pseudo-second order for Cd^{2+} indicated that the kinetic adsorption fitted well with the pseudo-second-order model. The adequacy of the pseudo-second-order model to explain the adsorption kinetic data was also established by comparing q_e, (exp: 47.12 mg/g) and q_e (cal:46.95 mg/g) values.
The revised manuscript also includes a **new subsection as** '3.1.1 **Effect of Initial Cd Concentration and Time**' (Experiment Section)- Metal removal (%) by CS-KAC-Ag was determined at different initial concentrations of Cd2+ (10, 20 and 30 mg.L-1)mg/L) at constant

pH 6, with 20 mg of adsorbent at room temperature. The aqueous solutions were shaken at 150 rpm and filtered with a Whatman filter paper (0.3 µm).

The Title of the Figure 8 is changed to Removal of cadmium at different concentrations (10 mg.L^{-1} , 20 mg. L^{-1} and 30 mg. L^{-1}) with the change in contact time (20-120 minute at 20 mg of adsorbent dosage).

3.2. Reusability Study of CS

Response to Page 16, "It was observed that the adsorption efficiency of our synthesized material was high…": Have you already shown the results of KAC? If so, please remove Figure 11b to avoid repetition. Such a comparison can be described in text.

Ans: We have removed Figure 11a and now Figure 11b is numbered as Figure 11 where Figure 11 shows a comparison of the removal efficiency of KAC with nanobiocomposite CS-KAC-Ag.