

Review Form 3

Journal Name:	Chemical Science International Journal
Manuscript Number:	Ms_CSIJ_124952
Title of the Manuscript:	Removal of residual phosphorus and nitrates from sewage treatment plants by a fine sand filter
Type of the Article	

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The study emphasizes the need to lower phosphorus, a limiting nutrient, in order to stop algae from growing too much. Additional tertiary treatment procedures are frequently required because traditional sewage treatment techniques, including activated sludge, are frequently insufficient for phosphorus removal. The authors of this study evaluated the efficiency of several sand kinds and arrangements for wastewater filtration. They investigated the effects of sand type, particle size, sand height, and water volume on the rates of phosphorus and nitrate removal using an experimental approach.	
Is the title of the article suitable? (If not please suggest an alternative title)	The research's title is concise and clear, but you might want to include more details about it, including the kind of sand filter that was used (e.g., "Removal of Phosphorus and Nitrate from Wastewater using a Natural Sand Filter").	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	There is some repetition in the abstract. The phrase "Studies on eutrophication affirm that phosphorus is the limiting factor..." may be reduced to: "Phosphorus is a key factor in eutrophication, leading to algal biomass production." The results are not emphasized in the second half of the abstract. "This study found that [insert sand type] was the most effective in removing phosphorus and nitrates under [insert conditions]." is one example of how the results may be emphasized more effectively. Keywords: While the keywords are relevant, you might want to add "sand filtration" or "tertiary treatment" for improved indexing.	
Are subsections and structure of the manuscript appropriate?	Although it gives a solid backdrop, the introduction should be shorter. It is stated again, "In most aquatic systems, phosphorus is the primary cause of eutrophication." Take into account eliminating duplication. Although the report notes the gap with relation to WWTPs, further information about how this research advances the current approaches would be helpful. This would be a better background if there was a quick literature comparison.	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	Experimental Procedure: It's unclear why particular sands and particle sizes were selected. Could you please clarify the selection of SH and SO sands and their importance in the removal process? Simplify the "Calculation of removal rate" section's explanation. For example, deconstruct the equation and define each variable (e.g., C _{in} , C _{out}) precisely. Results and Discussion: Graphs that visually depict the data trends could improve the way the results are presented. For instance, think about incorporating a graph that contrasts the rates at which nitrates and phosphorus are removed in various sand kinds. A brief comparison is made with the research conducted by Qili et al. (2023) and Asmaa et al. (2024). By emphasizing how your data concur with	

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	<p>or deviate from these earlier conclusions, you can further the conversation.</p> <p>Conclusion: The practical applications of your findings should be emphasized more in the conclusion. Think about extending the implications of the findings to larger wastewater treatment plants (WWTPs) or to other regions. Mention any study constraints you are aware of, such as issues with scalability or possible regional variations in sand quality.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>-</p>		
<p><u>Minor</u> REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>There are a few difficult sentences that may be made simpler. For example, "The parameters that are: the type, grain size and height of the sand, and the volume of effluent passing over the filter are parameters that influence the efficiency" might be changed to: "The type, grain size, height of the sand, and effluent volume significantly influence filtration efficiency." There are some minor grammar errors throughout the work. Take the sentence "it can be clearly seen from figure 3..." as an example. Capitalize "figure" to become "Figure 3."</p>	
<p><u>Optional/General</u> comments</p>	<p>Although the statistical techniques are clearly explained, some readers might not be familiar with concepts like "R2" or "Cook's distance." For these statistical concepts, please provide definitions or references in the techniques section. The important findings may be introduced earlier in the discussion to quickly introduce the reader to the study's major conclusions, even though the experimental design is sound. Minor sentence structure problems could be resolved with the aid of a professional language review, improving the manuscript's polish and readability.</p>	

Editorial Comments (This section is reserved for the comments from journal editorial office and editors):

	<p>Author's Feedback</p>
<p>You are hereby suggested to include following recent references to improve the quality of the manuscript.</p> <ol style="list-style-type: none"> Gong X, Yu D, Wang X, Yuan M, Bi C, Du Y, Zhao J. Feasibility of reinforced post-endogenous denitrification coupling with synchronous nitrification, denitrification and phosphorus removal for high-nitrate sewage treatment using limited carbon source in municipal wastewater. Chemosphere. 2021 Apr 1;269:128687. Berkessa YW, Mereta ST, Feyisa FF. Simultaneous removal of nitrate and phosphate from wastewater using solid waste from factory. Applied Water Science. 2019 Mar;9:1-0. 	

PART 2:

	<p>Reviewer's comment</p>	<p>Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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