

Review Form 3

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| Journal Name: | Journal of Materials Science Research and Reviews |
| Manuscript Number: | Ms_JMSRR_126730 |
| Title of the Manuscript: | Improving the Photo-catalytic Efficiency of TiO2 by incorporation of Cobalt For Removal of Micropollutants from Wastewater |
| Type of the Article | Original Research 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 '**l a c k o f N o v e l t y**', 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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Important Policies Regarding Peer Review

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PART 1: Review Comments

| <u>Compulsory</u> REVISION comments | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her</i> |
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| 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. | This manuscript presents a significant advancement in environmental remediation, specifically in wastewater treatment. The incorporation of cobalt in TiO ₂ nanocrystals enhances photocatalytic efficiency, making it a sustainable solution for degrading harmful pollutants like methylene blue. I appreciate the methodical approach in synthesizing and characterizing the Co-doped TiO ₂ , as well as its focus on | |
| Is the title of the article suitable? (If not please suggest an alternative title) | The title is suitable and clearly reflects the core subject of the research. It effectively highlights the improvement in photocatalytic efficiency through cobalt doping, which directly addresses the issue of wastewater micropollutant removal. | |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions | The abstract is mostly comprehensive but could benefit from a clearer statement of the environmental impact of the study, especially in addressing wastewater pollutants. Additionally, including a brief mention of the significance of reduced band gap in enhancing photocatalytic activity would | |
| Are subsections and structure of the manuscript appropriate? | The manuscript is well-structured, with each section logically flowing into the next. However, minor reorganization within the Results and Discussion sections could enhance readability, such as placing all characterization results (XRD, FTIR, UV) before discussing photocatalytic activity. | |
| 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 | The study is scientifically robust, with detailed analysis and consistent methodology. The Sol-gel synthesis and Co-doping of TiO ₂ nanocrystals are well-documented, and the conclusions are strongly supported by experimental data. The discussion of how Co-doping impacts band gap and photocatalytic | |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :- | The references are adequate and recent. However, adding a few more recent studies on Co-doped TiO ₂ in photocatalysis would strengthen the manuscript's foundation. Suggested additions: □ Papers on recent advances in TiO ₂ doping for visible light absorption. □ Comparative studies with other metal-doped TiO ₂ nanocrystals for similar applications | |
| <u>Minor</u> REVISION comments Is the language/English quality of the article suitable for scholarly communications? | Language Quality: The language is mostly suitable for scholarly communication, though a few minor grammatical corrections and rephrasing could improve clarity. For example, in the Introduction, phrases like "toxic organic compounds such as pesticides, dyes, phenols" could be streamlined for readability. Additional Suggestions: In the Conclusions section, consider adding a sentence or two on future directions for | |
| <u>Optional/General</u> comments | | |

PART 2:

| | Reviewer's comment | Author's comment <i>(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)</i> |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

Reviewer Details:

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|----------------------------------|---------------------------|
| Name: | Aloke Verma |
| Department, University & Country | Kalinga University, India |