

Review Form 3

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| Journal Name: | Chemical Science International Journal |
| Manuscript Number: | Ms_CSIJ_127372 |
| Title of the Manuscript: | Photochemical removal of methylene blue in aqueous solution |
| 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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Important Policies Regarding Peer Review

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PART 1: Review Comments

| Compulsory 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 feedback here)</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 paper is important for the scientific community as it tackles a crucial environmental concern: the breakdown of synthetic dyes in wastewater, particularly methylene blue (MB), which endangers aquatic ecosystems and human health. The research utilizes sun radiation for direct photolysis, offering a sustainable and economical approach for dye elimination, especially pertinent in areas with restricted access to sophisticated wastewater treatment equipment. I commend this work for its practical implications and creative approach; nonetheless, it might benefit from a more thorough examination of the underlying mechanisms driving the observed outcomes. | |
| Is the title of the article suitable? (If not please suggest an alternative title) | The title "Photochemical Removal of Methylene Blue in Aqueous Solution" is suitable as it accurately reflects the study's focus on the degradation of methylene blue through photochemical processes. | |
| 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. | The abstract is thorough, encapsulating the study's aims, methods, and principal results. Nonetheless, it might be improved by incorporating particular ramifications of the findings for wastewater treatment methodologies or environmental policies. Furthermore, highlighting the importance of the kinetic model analysis may elucidate the study's contributions more effectively. | |
| Are subsections and structure of the manuscript appropriate? | The subsections and overall structure of the manuscript are appropriate for a scientific article. The logical flow from introduction to methodology, results, discussion, and conclusion aids reader comprehension. However, ensuring that each section is clearly delineated with headings would improve readability. | |
| 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. | The work demonstrates scientific rigor and technical soundness through its thorough examination of the photodegradation of methylene blue. The application of factorial design to assess various variables (exposure duration, solution volume, dye concentration) exemplifies a comprehensive experimental approach. The kinetic analysis consistent with first-order kinetics is substantiated by data, demonstrating that the authors have complied with established scientific norms. Furthermore, the findings correspond with established literature on dye degradation, hence substantiating their validity. | |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. : | The references cited in the manuscript are relevant but may not be sufficiently recent. Including more up-to-date studies on similar photodegradation methods or recent advancements in wastewater treatment technologies would strengthen the literature review. Suggested references could include recent articles from journals focused on environmental science and pollution control. 1- https://doi.org/10.1007/s11270-023-06839-y 2- https://doi.org/10.1080/00222348.2023.2266278 3- DOI: 10.22036/pcr.2023.400270.2350 | |

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| <p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p> | <p>Language Quality: The language quality is generally suitable for scholarly communication; however, there are instances of awkward phrasing and grammatical errors that need revision for clarity and professionalism.</p> <p>Technical Terminology: While technical terms are necessary, consider providing definitions or explanations for less common terms to enhance accessibility for a broader audience.</p> | |
| <p>Optional/General comments</p> | <p>The language is predominantly formal and suitable for a scientific audience. Nevertheless, there are occurrences of clumsy language and grammatical inaccuracies that may be changed for clarity.</p> <p>Abstract Comments: The abstract concisely encapsulates the aims, methodologies, and principal results of the research. Nonetheless, it may be enhanced by elucidating the broader ramifications of the research.</p> <p>The stated maximum removal rate of 6.8 mg/L is explicit; nonetheless, incorporating a comparative analysis with alternative approaches would augment its relevance.</p> <p>What particular hurdles do you anticipate in using this strategy on a broader scale? Could you elucidate how the outcomes may fluctuate under varying environmental conditions?</p> <p>Introduction Remarks: The introduction presents a compelling justification for tackling water contamination; nevertheless, it would be enhanced by include more recent sources to underscore contemporary issues.</p> <p>1- https://doi.org/10.1007/s11270-023-06839-y 2- https://doi.org/10.1080/00222348.2023.2266278 3- DOI: 10.22036/pcr.2023.400270.2350</p> <p>The flow of ideas is generally logical, but some sentences are long and could be broken down for better readability.</p> <p>Questions: 3-What specific features of Côte d'Ivoire's wastewater treatment systems contribute to the urgency of this study? 4-How does your study relate to the existing literature on dye degradation?</p> <p>Materials and methods Comments: The methodology is detailed, which facilitates reproducibility. However, some technical terms may need clarification for a wider audience.</p> <p>The description of the factorial design is well structured, but it would be helpful to include how the factors were chosen based on preliminary studies.</p> <p>Questions: 5-Can you explain in detail the rationale for choosing the specific concentrations and volumes used in your experiments? 6-How might variations in solar intensity affect your results?</p> <p>Results and discussion 7-What were the criteria for determining significant factors in your analysis? 8-How do you interpret the observed decrease in removal efficiency with increasing dye concentration? 9-What specific interactions between factors did you anticipate that were not observed? 10-How do you explain the low degradation rates under solar radiation compared to other studies? 11-What future studies do you recommend based on your findings? 12-How could your research inform policy decisions regarding wastewater treatment in textile industries? 13-Were there any considerations regarding the compatibility of materials (e.g., vials wrapped in aluminum foil) used to store methylene blue solutions, especially concerning potential reactions or degradation over time?</p> | |

PART 2:

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| | <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> | |

Reviewer Details:

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| <p>Name:</p> | <p>Zennaki med el amine</p> |
| <p>Department, University & Country</p> | <p>Abou bekr balkaid, Algeria</p> |