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| Book Name: | [**Chemistry and Biochemistry: Research Progress**](https://www.bookpi.org/bookstore/product/chemistry-and-biochemistry-research-progress-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4421** |
| Title of the Manuscript: | **Photocatalytic Degradation of DiflouroTriazole Aceto- phenone using Ag-Fe codoped TiO2: Statistical Modeling and Optimization** |
| Type of the Article | **Book Chapter** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | 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. A minimumof 3-4 sentences may be required for this part.** | **Novelty and Relevance:**  **The study addresses a significant environmental issue—water pollution caused by pharmaceutical effluents, particularly non-biodegradable organic compounds like DTA.**  **The use of Ag-Fe codoped TiO2 as a photocatalyst is innovative, and the study provides a comparative analysis of solar and UV photocatalysis, which is valuable for practical applications.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **Yes** |  |
| 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. | **Yes** |  |
| **Is the manuscript scientifically, correct? Please write here.** | **Yes** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | **Yes** |  |
| Is the language/English quality of the article suitable for scholarly communications? | Good |  |
| Optional/Generalcomments | Expand on the Mechanism:  Include a more detailed discussion on the photocatalytic mechanism, particularly the role of Ag and Fe in enhancing the activity of TiO2. This could involve a discussion of bandgap engineering, electron-hole separation, and the generation of reactive oxygen species.  Analyze By-products:  Conduct a detailed analysis of intermediate by-products formed during the photocatalytic degradation of DTA. This would ensure that the process leads to complete mineralization and does not produce harmful intermediates.  Address Scalability:  Discuss the challenges and potential solutions for scaling up the process for industrial applications. This could include pilot-scale studies, reactor design considerations, and energy efficiency analysis.  Compare with Other Photocatalysts:  Provide a comparison of Ag-Fe CT with other advanced photocatalysts (e.g., ZnO, g-C3N4) or commercial TiO2 to highlight its advantages and limitations.  Enhance Statistical Discussion:  Provide a more detailed discussion on the significance of interaction terms in the RSM model and the limitations of the model. This would help readers understand the robustness of the statistical analysis.  Include Environmental and Economic Analysis:  Conduct a cost-benefit analysis comparing solar photocatalysis with conventional methods. This would provide a clearer picture of the economic and environmental advantages of the proposed method.  Correct Formatting Errors:  Ensure that all tables and figures are correctly formatted and free from redundancy. For example, Tables A4 and A5 should be reviewed and corrected. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **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)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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| **Reviewer Details:** | |
| Name: | **Zaid H. Mahmoud** |
| Department, University & Country | **University of Diyala, Iraq** |