Review Form 3

Journal Name:	**Physical Science International Journal**
Manuscript Number:	**Ms_PSIJ_126634**
Title of the Manuscript:	**Comprehensive assessment of Ferroresonance and its Effects in Selected Distribution Substations in Nasarawa State, Nigeria**
Type of the Article	**Original Research Article**

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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.	This manuscript addresses the critical issue of ferroresonance in low-voltage distribution transformers, which is an understudied area in power systems, especially in the Nigerian context. By focusing on transformer design optimization to mitigate ferroresonance risks, the study provides valuable insights into improving grid resilience and equipment lifespan in regions with limited access to stable electricity. The findings contribute to advancing transformer design, especially in regions with challenging power reliability issues. The methodology also sets a foundation for future studies on adaptive control strategies for ferroresonance mitigation.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	Yes, the title "Comprehensive Assessment of Ferroresonance and its Effects in Selected Distribution Substations in Nasarawa State, Nigeria" is suitable as it accurately reflects the study's scope and objectives. No change is necessary.	
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 generally comprehensive, but adding a brief mention of specific results would improve clarity and relevance. Highlighting these findings would provide a stronger overview of the study's contributions and key outcomes**.**	
Are subsections and structure of the manuscript appropriate?	Yes, the manuscript's structure is appropriate. Each section is logically organized, providing a clear flow from introduction to conclusion.	
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 manuscript is scientifically sound, as it integrates both experimental and simulation methods to analyse ferroresonance impacts comprehensively. The detailed modelling and analysis, supported by empirical data, demonstrate the robustness of the study's methodology. The inclusion of both Delta and Star-Grounded configurations provides a realistic assessment of different transformer setups, ensuring that the results are applicable to real-world scenarios. Additionally, the findings on THD and voltage fluctuations support the study's conclusions on transformer stability under ferroresonant conditions.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	The references are mostly sufficient and recent, covering key studies on ferroresonance in transformers and power systems. Including a few additional references related to recent advancements in adaptive control systems for power quality and ferroresonance mitigation could further strengthen the literature review.	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	The language is generally suitable, though minor grammatical improvements can enhance readability. For example, rephrasing complex sentences in the methodology section would improve clarity for international audiences.	
Optional/General comments	The manuscript is well-organized, and the research focus on Nigerian substations adds valuable regional context to the global discourse on power quality and transformer resilience. REVIEW COMMENTS 1. The methodology could benefit from further clarification, especially regarding the setup of experimental and simulation parameters. A more detailed explanation of how specific configurations were chosen would enhance reproducibility. 2. Although the paper includes a comprehensive literature review, adding a section comparing findings with more recent studies, especially in regions with similar conditions, would make the paper more robust. 3. It would be beneficial to include a discussion of the study's limitations, particularly regarding the experimental setup and the specific transformers tested. Acknowledging these limitations would strengthen the paper and suggest areas for future research. 4. The conclusion could be more comprehensive by highlighting the most critical findings and their implications for future work. Explicitly suggesting avenues for continued research, such as investigating different substation configurations or control mechanisms, would provide a clear path forward. 5. The paper's technical analysis is commendable.	

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)*	

Reviewer Details:

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