Review Form2

Book Name:	Current Approaches in Engineering Research and Technology
Manuscript Number:	**Ms_BPR_2827**
Title of the Manuscript:	**Adaptive Charging System for PEM Fuel Cells Using a 4-Switch Buck-Boost Converter**
Type of the Article	**Book chapter**

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 minimumof 3-4 sentences may be required for this part.	**This manuscript employs an adaptive 4-switch buck-boost DC-DC converter design and its control method to charge batteries from Proton Exchange Membrane (PEM) fuel cells.It addresses an issue in the integration ofPEM fuel cells with energy storage systems, particularly in hybrid electric vehicles. By presenting an adaptive 4-switch buck-boost converter, the authors provide a solution that enhances the efficiency and operational lifespan of fuel cells, which is essential for advancing clean energy technologies.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**The title of the article "Adaptive Charging System for PEM Fuel Cells Using a 4-Switch Buck-Boost Converter" is suitable.**	
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 comprehensive and gives the importance of maintaining the fuel cell at its peak performance point and mentions the benefits of the interleaved design in terms of ripple reduction and thermal management.However, I suggest a few enhancements for clarity and completeness:** **Specific Results:** Include key simulation results or performance metrics to strengthen the abstract by providing quantitative evidence of the converter's effectiveness. **Applications:** Include relevance of hybrid electric vehicles or renewable energy systems. **Future Implications:** A sentence on the potential future research directions or implications of this work could enrich the abstract, indicating how this study could influence subsequent developments in the field.	
Are subsections and structure of the manuscript appropriate?	**Overall, the structure facilitates a clear understanding of the research objectives, methods, and outcomes, making it accessible to readers in the scientific community.**	
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 minimumof 3-4 sentences may be required for this part.	**The authors employ established principles of power electronics, specifically in the design of the adaptive 4-switch buck-boost converter, which is grounded in well-documented theories of DC-DC conversion. The use of LTspice for simulations adds credibility, as it is a widely recognized tool in the field for validating theoretical designs against practical performance metrics. Furthermore, the manuscript provides detailed comparisons with single-phase topologies, highlighting significant improvements in charging current ripple and overall efficiency, which are critical for the effective integration of PEM fuel cells with battery systems. I, suggest to include technical specifications of Power converter, fuel cell and battery to understand the significance of results.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	**To enhance the manuscript, I suggest including more recent studies from the last five years that focus on:**	

-	• **Advances in interleaved DC-DC converter designs and their applications in renewable energy systems.** • **Recent developments in PEM fuel cell technology and efficiency improvements.** • **Current trends in hybrid energy systems, particularly those integrating multiple energy sources.**	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	• **The language/English quality of the article is suitable for scholarly communications. However, there may be areas where the clarity could be improved, such as ensuring that all technical terms are defined upon first use and that complex sentences are structured for better readability. (e.g.** ripple reduction factor (RF) or RRF- first letter of each word should be capital, LTspice?) • Figures in **SIMULATION & RESULTS** section needs to be enhanced.	
Optional/Generalcomments	While the paper is strong, it could benefit from incorporating more recent references to reflect the latest developments in the field. Overall, the research contributes valuable insights to the ongoing discourse on Fuel cell technology, battery, and power electronics, making it a relevant addition to the literature. The keyword 'ultracapacitor' is used in the paper but is not applied in the system.	

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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