Review Form2

Book Name:	Current Approaches in Engineering Research and Technology
Manuscript Number:	**Ms_BPR_1874**
Title of the Manuscript:	**The Use of Machine Learning in Oil Well Petrophysics and Original Oil in Place Estimation: A Systematic Literature Review Approach**
Type of the Article	**Book chapter**

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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 few sentences regarding the importance this manuscript for scientific community. Why do you like (or dislike) this manuscript? Minimum 3-4 sentences may be required for this part.	**I find this manuscript highly valuable as it systematically consolidates and evaluates a decade of research on the application of machine learning in oil well petrophysics and oil estimation. The meticulous analysis of different machine learning algorithms and their effectiveness provides clear insights into their practical applications and challenges. This manuscript is particularly appealing due to its comprehensive approach and the potential it holds for guiding future research directions in the integration of advanced computational techniques in the oil and gas industry.**	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**The current title of the article, "The Use of Machine Learning in Oil Well Petrophysics and Original Oil in Place Estimation: A Systematic Literature Review Approach," is descriptive and gives a clear indication of the manuscript's content. However, it could be more concise while still capturing the essence of the study. Here is an alternative title suggestion:** **"Machine Learning Applications in Oil Well Petrophysics and Oil Estimation: A Systematic Review"**	
Is the abstract of the article comprehensive? Do you suggest addition (or deletion) of some points in this section? Please write your suggestions here.	Machine learning, a form of artificial intelligence, is increasingly applied in various fields, including the oil and gas industry. This systematic literature review examines the application of machine learning techniques in oil well petrophysics and original oil in place (OIP) estimation from 2011 to 2021. The review aims to identify the most effective machine learning algorithms, their strengths, and limitations as reported in the literature. A total of 3127 articles were initially collected from four major databases, and after applying rigorous inclusion and exclusion criteria, 104 relevant articles were selected for detailed analysis. The results reveal that machine learning, particularly artificial neural networks (ANN), has been widely used for predictions and estimations in the industry, with 2019 having the highest number of publications. The study finds that machine learning can perform reserves estimation with speed and accuracy, especially where data is insufficient. However, challenges such as data inadequacy and algorithm under-performance were also noted. This review provides valuable insights into the current state of machine learning applications in oil well petrophysics and OIP estimation, guiding future research and practical applications in the industry .	
Are subsections and structure of the manuscript appropriate?	**Evaluation and Suggested Changes to Subsections** **Abstract**: Ensure it includes specific details about the methodologies and key results. **Introduction**: Clearly state the research questions and objectives. **Literature Review**: Summarize key themes and findings. **Materials and Methods**: Use subheadings for better organization. **Results and Discussion**: Link results to research questions and discuss implications. **Conclusion**: Highlight practical implications and future research directions explicitly. This structure will enhance the clarity and flow of the manuscript, making it more accessible and informative for readers.	

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Please write few sentences regarding the scientific correctness of this manuscript. Why do think that this manuscript is scientifically robust and technically sound?Minimum 3-4 sentences may be required for this part.	This manuscript is scientifically robust and technically sound because it employs a systematic literature review (SLR) methodology, which is a well-established approach for synthesizing research findings across numerous studies. The comprehensive search strategy and rigorous inclusion/exclusion criteria ensure that only relevant and high-quality studies are included in the review. Additionally, the use of a large dataset (104 journal articles) allows for a thorough analysis of trends and patterns in the application of machine learning in oil well petrophysics and oil estimation. The manuscript also provides detailed insights into the strengths and limitations of various machine learning algorithms, which adds depth and reliability to the findings, making it a valuable resource for both researchers and industry professionals.	
Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. **-**	**The manuscript's references are well-selected, covering a broad spectrum of relevant studies. However, including a few more recent references from 2022 and 2023 would enhance the review's timeliness and provide a more up-to-date perspective on the advancements in the field.** **By incorporating these suggestions, the manuscript will maintain its scientific robustness and remain a valuable resource for both academic researchers and industry professionals.**	
Minor REVISION comments **Is language/English quality of the article suitable for scholarly communications?**	The manuscript is scientifically robust and technically sound, and with minor revisions to improve readability and precision, it can meet the standards of scholarly communication effectively. If you need specific sentences or sections reviewed for language improvements, feel free to point them out, and I can provide more detailed suggestions.	
Optional/Generalcomments	the manuscript can be further refined to meet high scholarly standards and make a significant contribution to the field of machine learning applications in the oil and gas industry	

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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