

Review Form 1.7

Journal Name:	Asian Journal of Chemical Sciences
Manuscript Number:	Ms_AJOCS_118605
Title of the Manuscript:	Synthesis, Characterization and Performance Evaluation of Castor oil-based additives for Lubricating oil
Type of the Article	Research Article

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PART 1: Review Comments

	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)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<ol style="list-style-type: none"> 1. Importance for the Scientific Community The manuscript presents a significant contribution to the scientific community, particularly in the field of sustainable materials and lubrication technology. The development of castor oil-based additives for lubricating oils addresses the critical issues of environmental sustainability and the reduction of dependency on petroleum-based products. The study provides valuable insights into the synthesis, characterization, and performance evaluation of these bio-based additives, which can potentially lead to more environmentally friendly and effective lubrication solutions. 2. Title Suitability The current title, "Synthesis Characterization and Performance Evaluation of Castor oil based additives for Lubricating oil," is clear but could be more concise and focused. A suggested alternative title is: "Development and Evaluation of Castor Oil-Based Additives for Sustainable Lubricating Oils" 3. Abstract Comprehensiveness The abstract is comprehensive but could benefit from being more concise and focused on the key findings. It provides a good overview of the study's aims, methods, and results but should include specific data on the improvements achieved in the viscosity index and pour point to better highlight the significance of the findings. 4. Subsections and Structure The manuscript is well-structured with appropriate subsections, including an introduction, experimental section, results and discussion, and conclusion. Each section is clearly delineated and follows a logical progression. However, the addition of more detailed methodological steps and clearer subheadings within the results and discussion section would enhance readability. 5. Scientific Correctness The manuscript appears to be scientifically correct, presenting a well-conducted study with thorough experimental procedures and robust data analysis. The use of various characterization techniques like FT-IR, NMR, TGA, and GPC is appropriate and provides a comprehensive evaluation of the synthesized polymers. 6. References Sufficiency and Recency The references are mostly sufficient and relevant, covering key studies in the field. However, there are some areas where more recent literature could be incorporated to reflect the latest advancements. Additional references from the past five years on bio-based lubricants and the specific applications of castor oil in polymer chemistry would strengthen the manuscript. <p>Suggested Additional References J. C. H. Wong, A. C. Grimmer, "Recent Advances in Bio-based Lubricants," Renewable and Sustainable Energy Reviews, 2020.</p> <p>S. H. Tabatabaei, "Biodegradability and Performance Enhancement of Vegetable Oil-Based Lubricants," Journal of Cleaner Production, 2021.</p>	

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<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Ensure consistent use of technical terms and units throughout the document. Example: Ensure that temperature units (°C), concentration units (% w/w), and other measurements are uniformly presented.</p> <p>Use precise scientific terminology consistently and avoid repetition</p> <p>Remove unnecessary words or phrases to make sentences more direct</p>	
<p>Optional/General comments</p>	<p>Can Publish, but changes need to be made to the article as specified in this review</p> <ol style="list-style-type: none"> 1. Title Clarity: <ul style="list-style-type: none"> ○ Current: "Synthesis Characterization and Performance Evaluation of Castor oil based additives for Lubricating oil" ○ Suggested: "Synthesis, Characterization, and Performance Evaluation of Castor Oil-Based Additives for Lubricating Oil" 2. Abstract: <ul style="list-style-type: none"> ○ Add specific results to make the abstract more informative. Mention key data points or findings from the study. ○ Improve clarity and conciseness. Break down long sentences for better readability. 3. Introduction: <ul style="list-style-type: none"> ○ Provide more background on the environmental and economic issues with petroleum-based lubricants. ○ Clearly state the research gap this study aims to fill. ○ Mention specific advantages of castor oil and acrylates briefly. 4. Literature Review: <ul style="list-style-type: none"> ○ Integrate more recent studies to support the claims. ○ Highlight how this research differs from previous work. 5. Experimental Section: <ul style="list-style-type: none"> ○ Clarify the procedures with more step-by-step details. ○ Include justifications for the chosen methodologies (e.g., why specific concentrations were chosen). 6. Results and Discussion: <ul style="list-style-type: none"> ○ Present data in a clearer manner, such as through more detailed tables and figures. ○ Discuss the implications of the findings in more depth. Compare results with existing literature. ○ Explain any anomalies or unexpected results. 7. Conclusion: <ul style="list-style-type: none"> ○ Summarize the key findings succinctly. ○ Emphasize the practical applications and potential impact of the research. ○ Suggest future research directions based on the findings. 8. References: <ul style="list-style-type: none"> ○ Ensure all references are up-to-date and relevant. ○ Follow a consistent citation style throughout the paper. 9. General Suggestions: <ul style="list-style-type: none"> ○ Proofread for grammatical errors and improve sentence structure. ○ Use subheadings to organize sections better and make it easier for readers to follow. ○ Ensure that all tables and figures are clearly labeled and referenced in the text. 10. Formatting: <ul style="list-style-type: none"> ○ Follow the journal's specific formatting guidelines for headings, subheadings, and 	

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	references. ○ Use consistent formatting for chemical compounds and formulas. By implementing these suggestions, the paper can be made more coherent, detailed, and impactful for its intended audience.	
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PART 2:

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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