

Review Form 1.7

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	Ms_IRJPAC_115430
Title of the Manuscript:	Synthesis and properties of the LiMn₂O₄ cathode material for lithium-ion batteries
Type of the 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>	<p>The study examines spinel LiMn_2O_4 as a lithium-ion battery cathode material synthesized through a high-temperature solid-state method. Characterization confirms uniform particle size distribution (80-200 nm). The LiMn_2O_4 sample sintered at 700 °C displays promising electrochemical performance, achieving a first charge-discharge specific capacity of 158.0 $\text{mAh} \cdot \text{g}^{-1}$ and a first discharge capacity of 138.4 $\text{mAh} \cdot \text{g}^{-1}$ at 0.1 $\text{A} \cdot \text{g}^{-1}$. Cycling stability is demonstrated with a discharge specific capacity of 114 $\text{mAh} \cdot \text{g}^{-1}$ maintained after 60 cycles.</p> <p>Recommendation: Based on these findings, the article is deemed suitable for publication pending minor revisions.</p> <p>Note: Article can be accepted after addressing the comments, no need send back to the reviewer</p> <p>Comments:</p> <ol style="list-style-type: none"> 1. It is suggested that the authors consider rephrasing the primary segment of the abstract to emphasize problem identification, hypothesis formulation, and the justification of the current work, rather than focusing primarily on the synthesis method. 2. In the material synthesis procedure, there is a sentence fragment: "To compensate for losses during calcination, Li excess of 0.05 mol." It is advisable to complete this sentence for clarity. 3. The term "cv" for cyclic voltammetry should be corrected to "CV" for consistency and accuracy. 4. Considering contemporary requirements for energy storage devices, practical applications often necessitate stability over 2,000 to 5,000 cycles. However, the current report indicates that the fabricated CR2032 batteries experience a significant decline in performance, losing half of their capacity within 350 cycles. The authors should provide justification for this observation. 	

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Minor REVISION comments		
1. Is language/English quality of the article suitable for scholarly communications?		
Optional/General comments		

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?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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