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| Book Name: | [**Current Research Progress in Physical Science**](https://www.bookpi.org/bookstore/product/current-research-progress-in-physical-science-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_3471** |
| Title of the Manuscript:  | **Buffer standards for the physiological pH of the zwitterionic buffer 3-[N-tris(hydroxymethyl)methylamino]-2-hydroxypropanesulfonic Acid (TAPSO) From (278.15 to 328.15) K** |
| 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 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 provides a valuable contribution to the scientific community by offering precise pH data for TAPSO buffer across a wide temperature range, a parameter essential for accurate biochemical and biophysical experimentation. Reliable buffer systems with known pH-temperature dependencies are crucial for a wide array of research applications, and this study's focus on TAPSO buffer fills an existing gap in the literature. I appreciate the manuscript’s detailed approach to systematically investigating temperature effects on buffer behavior, as it can enhance the reliability of experimental protocols where temperature fluctuations impact results. By supporting researchers in achieving greater consistency and control over their experimental environments, this work has practical significance and the potential to facilitate further studies in related fields.** |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | **Yes** |  |
| 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. | **Clarity and Detail: While the abstract provides an overview, it could be strengthened by more directly stating the scientific objective, primary findings, and their broader implications. Consider restructuring it to better highlight the importance of determining pH values for TAPSO buffers across this temperature range.** |  |
| **Are subsections and structure of the manuscript appropriate?** | **yes** |  |
| **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.** | **This manuscript demonstrates scientific correctness by employing established electrochemical methods to determine pH values of TAPSO buffer across a range of temperatures, ensuring reliable and reproducible data. The use of a carefully referenced electrode setup and attention to calibration details contribute to the technical soundness of the approach, as these are essential for accurate pH measurements in varying thermal conditions. Additionally, the inclusion of data over multiple ionic strengths and temperatures reflects a thorough investigation, allowing for broad applicability in experimental settings. This meticulous experimental design and adherence to standardized techniques enhance the robustness and credibility of the findings, making the study a dependable resource for researchers.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **Yes** |  |
| Minor REVISION commentsIs the language/English quality of the article suitable for scholarly communications? | Language Consistency: Minor typographical errors (e.g., “op-erational,” “ca-lomel”) should be corrected for clarity. |  |
| Optional/General comments | The manuscript presents a comprehensive study on determining the pH values of TAPSO buffer across a range of temperatures, which is both relevant and valuable to the field. However, certain areas of the manuscript would benefit from revisions to meet the publication standards typically expected in a good book. Here are some detailed suggestions to help improve clarity, reproducibility, and presentation.Abstract:Clarity and Detail: While the abstract provides an overview, it could be strengthened by more directly stating the scientific objective, primary findings, and their broader implications. Consider restructuring it to better highlight the importance of determining pH values for TAPSO buffers across this temperature range.Specific Results: Including key pK₂ values or notable trends observed in the buffer solutions across temperatures would make the abstract more informative and impactful.Language Consistency: Minor typographical errors (e.g., “op-erational,” “ca-lomel”) should be corrected for clarity.Experimental Section:Detailed Methodology: While details on cell design and electrode preparation are referenced, please ensure that any novel techniques or modifications to established methods are fully described in the manuscript.Reproducibility and Data Presentation: Verify that all details necessary for reproducibility are included. This should encompass the specific models of the equipment, experimental conditions, and calibration steps if they are not fully covered in the referenced works.Results and Discussion:Trends Analysis: The data tables present detailed measurements over a broad temperature range, which is highly valuable. However, adding an explanation of observed trends, such as changes in pK₂ values with temperature and ionic strength, would deepen the readers’ understanding of the results.Statistical Analysis: Consider adding a summary of any error analysis or statistical methods employed to verify data reproducibility. This would enhance the robustness of your findings.General Writing and Formatting:Formatting and Reference Consistency: Ensure uniform formatting throughout the manuscript, and check that all references are correctly formatted according to journal guidelines.Clarity in Scientific Terms: Double-check for clarity in scientific terminology and correct typographical errors (e.g., “paH” should be “pH”).Overall Assessment: With these revisions, the manuscript chapter will be more in line with publication standards expected in chemistry and biochemistry book. Addressing these points will improve the paper’s clarity, reproducibility, and impact for readers in the field. Thank You |  |

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| **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)* |  |

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| **Reviewer Details:** |
| Name: | **Hari Shankar Biswas** |
| Department, University & Country | **Surendranath College, India** |