

[ReviewForm 1.7](#)

JournalName:	AsianJournalofPhysicalandChemicalSciences
ManuscriptNumber:	Ms_AJOPACS_115469
Titleof theManuscript:	DeterminationofThermo-AcousticalPropertiesin ViewtoExhibittheNatureandInteractionofAscorbic AcidinAqueousGlycineandGlucoseMedia
Typeof the Article	

[ReviewForm 1.7](#)

PART1: ReviewComments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that an author should write his/her feedback here)
Compulsory REVISION comments 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. <u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u>	1. Yes. This research may offer valuable insights into the nature of molecular interactions in aqueous solutions containing Vitamin C, glucose and glycine, which could have broad implications across multiple scientific disciplines. 2. The title looks good but can be improved and the suggested one "Thermo-Acoustical Study of Ascorbic Acid Interactions in Aqueous Solutions with Glycine and Glucose". This title concisely conveys the main elements of the study: the utilization of thermo-acoustical methods, the investigation into molecular interactions centered around ascorbic acid and the examination of particular aqueous solutions containing glycine and glucose. It is more straightforward. 3. The abstract effectively outlines the study's main points but the objectives are missing. It briefly describes the methodology but lacks detail on experimental procedures. While it mentions parameters evaluated, it could provide more specific results or trends observed. Other than these, it could be better if it highlights the research's significance and potential applications. 4. Introduction: The introduction covers various aspects related to the research, such as the importance of ultrasonic waves in studying molecular interactions, the significance of vitamins like Vitamin C in human health and the choice of solvents for the study. While it provides relevant background information, the objectives of the research could be stated more explicitly and the organization of the introduction could be improved for better clarity. Additionally, including more detail on the experimental methods and procedures, along with smoother transitions between sections, will be better. Material and Method: This section about Materials and Method gives a lot of details about how the experiments were done, but it could be shorter and more organized to make it easier to understand. Breaking down complicated steps into simpler ones would help the reader to follow. It is crucial to make sure that other researchers can repeat the experiments by clearly explaining the methods. Adding exact measurements, instrument settings and how data was analyzed would give more specific information. Also, the standard methods or protocols for the experiments are missing. Results and Discussion: This section presents detailed findings regarding the volumetric and thermoacoustic parameters of aqueous solutions containing Vitamin C with glucose or glycine at various concentrations and temperatures. Figures 1 to 17 illustrate the findings. The ultrasonic velocity as shown in Figure 1, increases with higher concentration and temperature, indicating stronger intermolecular attraction between the components. Similarly, the density of the solution rises with increasing molar concentration, as depicted in Figure 2, suggesting enhanced packing structure due to solute-solvent association. Adiabatic compressibility decreases with rising concentration, which indicates strong intermolecular forces, as shown in Figure 3. Acoustic impedance rises with increasing concentration, which indicates powerful association due to hydrogen bonding or dipole-dipole forces, as seen in Figure 4. Specific heat ratio values increase with concentration but decrease with temperature rise, indicating closer molecule packing due to hydrogen attraction as shown in Figure 5. Relative association increases with concentration, suggesting closer molecular relations and stronger intermolecular forces, as shown in Figure 6. Relaxation strength decreases with concentration and temperature, indicating solute-solvent attraction, as shown in Figure 7. Change in adiabatic compressibility rises with concentration, indicating increased cohesive forces, shown in Figure 8. Internal pressure decreases with concentration and temperature, indicating cohesive forces between solute and solvent, as shown in Figure 10. Wada's constant and Rao's constant both increase with concentration and temperature, indicating molecular association and less solute-solvent interaction due to additional components, shown in Figures 11 and 12. Isobaric thermal expansion coefficient decreases with concentration, indicating decreased fluidity due to strong solute-solvent interaction, shown in Figure 13. Intermolecular free length decreases with concentration, indicating notable attraction among solution mixtures,	

ReviewForm 1.7

	as seen in Figure 14. Lenard-Jones potential decreases with concentration and temperature, indicating molecular interaction and attractive force between solute and solvent molecules, shown in Figure 15. Enthalpy decreases with increased concentration and temperature, revealing intermolecular forces in the system, as depicted in Figure 16. These findings provide valuable insights into the thermodynamic behavior and molecular interactions within the studied systems. However, it could be easier to follow with a clearer structure. Grouping similar results together and using consistent language and units throughout would help make it clearer. It could also benefit from explaining the meaning of the results in more detail. It's important to mention any limitations or possible mistakes in the experiments to make sure the findings are interpreted correctly. Also, adding brief explanations of each figure directly into the text would improve how the information is presented. Conclusion: The conclusion summarizes the study's findings on Vitamin C interactions in aqueous solutions, but it could be improved in a few areas. Firstly, it lacks specificity in discussing the implications of the findings beyond general health benefits. Need to provide more detailed applications or potential practical uses of the results to enhance its usefulness. Also, the conclusion could be better if acknowledging any limitations of the study or areas where further research is needed to fully understand the implications of the findings. 5. Yes 6. Acceptable	
Minor REVISION comments 1. Is language/English quality of the articles suitable for scholarly communications?	Moderate	
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?	(If yes, Kindly please write down the ethical issues here in details)	

Reviewer Details:

Name:	Ewe Lay Sheng
Department, University & Country	The Energy University, Malaysia