

**Review Form 3**

Journal Name:	<a href="#">Asian Journal of Research and Reviews in Physics</a>
Manuscript Number:	Ms_AJR2P_127103
Title of the Manuscript:	Influence of Quantum Effects on Amplitude Modulation in n-InSb Semiconductor
Type of the Article	Original Research Article

**PART 1: Review Comments**

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>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.</b>	The work is especially significant because it employs quantum hydrodynamic models to explore modulation characteristics that are crucial for applications in ultrasmall electron devices and laser-plasma interactions - a topic that has not been extensively studied according to the authors' literature review. What makes this manuscript particularly valuable is its methodical approach of combining theoretical modeling with practical applications, demonstrated through the use of CO <sub>2</sub> laser illumination on n-InSb crystals. However, one area where the manuscript could be strengthened is in providing more explicit comparisons between classical and quantum models to better highlight the magnitude of the quantum effects' influence on modulational characteristics.	
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>	The title is suitable because it accurately reflects the main focus of the research and it is clear and concise.	
<b>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.</b>	The abstract is well-written and comprehensive. I have only a few minor suggestions for language improvements.	
<b>Are subsections and structure of the manuscript appropriate?</b>	The structure of the manuscript is appropriate.	
<b>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.</b>	The manuscript demonstrates strong scientific technical soundness through several key aspects. First, it builds upon well-established foundational theories, appropriately citing historical developments from Brillouin's predictions of light diffraction by sound waves and linking these to modern quantum mechanical considerations, showing a clear understanding of the field's theoretical evolution. The authors' use of the quantum hydrodynamic model, developed by respected researchers like Manfredi and Haas, provides a robust theoretical framework for analyzing quantum effects in semiconductor plasmas, particularly when the de Broglie wavelength of charge carriers becomes comparable to plasma dimensions.	
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b> =	The manuscript contains an adequate number of references. While many sources are from earlier years, this is appropriate given the historical nature of the topic. <b>However</b> , I noticed that references #13 and #26 appear to be identical citations. This should be consolidated to avoid duplication.	

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Minor REVISION comments		
<b>Is the language/English quality of the article suitable for scholarly communications?</b>	There are some suggestions for language improvements detailed in the accompanying .docx document.	
<b>Optional/General</b> comments		

**PART 2:**

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

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