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| Book Name: | [Science and Technology: Developments and Applications](https://www.bookpi.org/bookstore/product/science-and-technology-developments-and-applications-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_** **4078** |
| Title of the Manuscript:  | **Comprehensive Analysis of Electronic Band Structure, Structural Phase Stability, and Optical Properties in AgMX2 Compounds (M = Al, Ga, In; X = S, Se, Te)** |
| Type of the Article | **Book chapter** |

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| PART 1: 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. A minimum of 3-4 sentences may be required for this part.** |  |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** |  |  |
| 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. |  |  |
| **Is the manuscript scientifically, correct? Please write here.**  |  |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** |  |  |
| **Is the language/English quality of the article suitable for scholarly communications?** |  |  |
| Optional/General comments | The study focused on analyzing the electronic band structure, structural stability, and optical properties of AgMX₂ compounds, where M represents Al, Ga, or In, and X represents S, Se, or Te. Using the **tight-binding linear muffin-tin orbital (TB-LMTO)** method, the researchers investigated the electronic structure and structural stability, while the **full-potential linear augmented plane wave (FPLAPW)** method was utilized to study the optical properties at ambient conditions. The calculations involved estimating the **c/a ratio** and **k-points** for the **ambient body-centered tetragonal (BCT)** phase of the AgMX₂ compounds.The work is consistent and well-presented; however, it lacks **a physical interpretation of the results**. The authors describe the structural and electronic properties without providing insight into the physical contributions of the **M atom**, which is systematically varied throughout the study.**Suggestions for Improvement:**1. **Abbreviations:**
	* Technical abbreviations like **TB-LMTO** and **FPLAPW** must be defined at their **first appearance** in the text to ensure clarity for the reader.
2. **Introduction:**
	* The introduction mainly describes the **technical details** of previous works on these materials but lacks a clear **motivation for the study**.
	* The **physical properties of the materials** and the **objective of the work** should be explicitly stated to guide the reader.
3. **Figure Citations:**
	* All figures should be **explicitly cited and discussed in the text** to ensure they are integrated into the narrative and support the findings presented.
4. **Physical Parameters Not Defined:**

The authors employed the **full-potential linear augmented plane wave (FP-LAPW)** method, which revealed important parameters such as the **critical point**, **static dielectric constants**, **refractive index**, **degree of anisotropy**, and **zero crossing point** for the AgMX₂ compounds.However, these parameters are **not properly defined** in the text, nor is their **physical significance** or **relevance to the study** explained.In summary, I suggest a **revision** to enhance the overall quality of the manuscript. The authors should:* Provide **clear definitions** and **physical interpretations** of the key parameters extracted from their calculations.
* Ensure that each parameter’s **importance to the study's objectives** is explicitly discussed.
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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: | **Halima Zaari** |
| Department, University & Country | **University Mohammed V -Agdal, Morocco** |