

Peer Review

Review of: "A Brief Review of the Optoelectronic Properties of Delafossite Materials for Solar Cell Applications"

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This work reports a Brief Review of the Optoelectronic Properties of Delafossite Materials for Solar Cell Applications. I have significant concerns regarding the sufficiency and interpretation of the study. In my opinion, this manuscript is not suitable for publication before the authors address the following queries:

1. Check the whole manuscript for typos and grammatical mistakes; the authors should carefully check before resubmission.
2. The structural and optoelectronic properties of these materials are already extensively reported, so there is no novelty in this work.
3. Write a proper motivation for the work.
4. Little study was given on the thermoelectric properties of these compounds, so the authors should perform TE simulation to show their efficiency in thermoelectric energy harvesting conversion.
5. In the conclusion section, the authors claim: "It is clear from this report that delafossite materials could be a promising candidate for an absorber material in solar cells and could potentially be the solution for pressing global challenges in energy." Whereas in the literature, most delafossites are considered as Transparent Conducting Oxides (TCOs), which represent a group of materials that shows high electrical conductivity, wide bandgap semiconductors ($E_g \geq 3.1$ eV) as well as optical transparency around 90% in the visible region. Consequently, they are used extensively as transparent electrodes and as front contacts in solar cells and not as absorbers.

Declarations

Potential competing interests: No potential competing interests to declare.