



## SDI Review Form 1.6

Journal Name:	<a href="#">Journal of Materials Science Research and Reviews</a>
Manuscript Number:	Ms_JMSRR_46530
Title of the Manuscript:	Bi2Te3 Thin Film for Sensitive Broadband Photodetector: A First Principles Calculations Within Cooper's Exchange Potentials
Type of the Article	Original Research Article

### General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

### PART 1: Review Comments

	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)
<b>Compulsory</b> REVISION comments	This manuscript focused on "Bi2Te3 Thin Film for Sensitive Broadband Photodetector: A First Principles Calculations" which is very interesting and useful in photoelectrical field. It is recommended to accept after major revision. However, some parts need to revise, which are listed below as follows. The main points need to revise before publication. [1] The new relate references are needed to add in the revised manuscript. [2] Theoretical calculations how to set the initial conditions or parameters to get close to the actual situation. [3] Can theoretical calculations and practical applications be compared to each other? [4] What are the important applications in this study? Please add in the revised manuscript. [5] The authors investigate many parameters in this study. What is optimal condition in this work? Please explain and add it in the revised manuscript. [6] Why do the authors only study [100] directions? Please explain the reason. [7] Why do Figures 3 and 4 show this trend? Please explain the reasons in details.	[1] Thank you very much for your suggestion to improve the quality of our paper. New related references have been added to the revised version of the manuscript. [2] Correction has been made in the revised manuscript as suggested and highlighted [3] Theoretical calculations and practical applications has been compared in the revised version of the manuscript [4] Important applications of this study has been added in the revised version of the manuscript [5] All calculations are performed at room-temperature [6] The computational cost of First-Principles calculations of second generation topological insulator thin films is very expensive that is why we considered only polarization along parallel direction[100]. [7] The trend of Figure 3 (a) describes how much material polarized as a result of induced electric dipole creation when electric field is applied while Figure 3(b) indicates how much material absorption photon energy. Also Figure 4(a) describe the extent which a material absorbs photon energy while Figure (b) describing the loss in energy of a fast-moving electron traversing the material.
<b>Minor</b> REVISION comments		
<b>Optional/General</b> 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)	We thank the reviewer's fruitful and helpful comments and suggestions for improving our manuscript. We have revised the manuscript accordingly