Review Form 3

Journal Name:	**Physical Science International Journal**
Manuscript Number:	**Ms_PSIJ_121314**
Title of the Manuscript:	**Modeling heat and mass transfer in laminar forced convection in a vertical channel: influence of Reynolds number**
Type of the Article	**Numerical work**

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PART 1: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	**The present numerical work focusses on heat and mass transfer in laminar forced convection in a vertical channel. The application in desalination and cooling of electronic devices is the importance of the manuscript which I like.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**There is no issue to the 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.	**The abstract needs some addition. It should clearly indicate the present work and mention of significant outcomes (qualitative or quantitative) of the present work.**	
Are subsections and structure of the manuscript appropriate?	**The structure is fine.**	
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.	**The manuscript is scientifically and technically correct but some error in the mathematical formulation has been stated in Point-3 of the comments section. The assumptions states that the radial pressure gradient term is neglected, kindly clarify it. Further I believe there should be a body force term in the momentum equation which is not present here.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :	**Few of the important published work must be cited mentioned as follows:** **1. Cherif, A. S., Kassim, M. A., Benhamou, B., Harmand, S., Corriou, J. P., & Ben Jabrallah, S. (2011). Experimental and numerical study of mixed convection heat and mass transfer in a vertical channel with film evaporation. *International Journal of Thermal Sciences, 50*(6), 942–953. https://doi.org/10.1016/j.ijthermalsci.2011.01.002.** **2. Tian, C., Wang, J., Cao, X., Yan, C., & Ala, A. A. (2018). Experimental study on mixed convection in an asymmetrically heated, inclined, narrow, rectangular channel. *International Journal of Heat and Mass Transfer, 116,* 1074–1084. https://doi.org/10.1016/j.ijheatmasstransfer.2017.09.099.**	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	**The English language quality is acceptable.**	
Optional/General comments	**The numerical work by the authors focusses on heat and mass transfer in laminar forced convection in a vertical channel. The numerical work is not that extensive to showcase major outcomes. However, the following comments will add a constructive understanding in the present work.** **1. The abstract should include some significant outcomes (qualitative or quantitative) of the present work.** **2. After a detailed literature review, the introduction section should highlight the objective of the present work at the last paragraph/part of it.** **3. The radial pressure gradient term is neglected in the Eq. 3, why it has been done so? Further I believe there should be a body force term in the momentum equation which is not present here. Clarify the reason.** **4. Section 3.1, the model validation should also include comparison with experimental available results. Some available results on forced convection through channels can be used for the comparisons, for example the work by Shah and London (1978), Shah (1978) and corelations of a plane Poiseuille flow etc. How the authors will justify the present study limits to the case of forced convection only. Why not mixed convection?** **5. If the authors have assumed the fully developed condition at the channel outlet, how the present results can be compared with the thermally developing flow (Othmane [19]) as authors have mentioned in the section 3.1. Give explanation.** **6. I appreciate the authors have checked the grid independency test, but they should go for one more higher grid size (X×Z).** **7. While analysing the heat transfer results (Nu), it would be better if the local Nu values were plotted against a non-dimensional number (Z^*) instead of a dimensional one (Z).** **8. The outcome of the present numerical work is very basic and obvious. Some critical analysis would enhance the quality of the present study.**	

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:	**Somenath Gorai**
Department, University & Country	**Manipal University, India**