**For research article**

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| Response to Reviewer 4 Comments | | |
| **1. Summary** |  |  |
| Thank you very much for taking the time to review this manuscript. We appreciate and are indebted for each sentence of your comments, which guided us to scan and improve our work again and to make major corrections. Please find the detailed responses below and the corresponding revisions/corrections highlighted/in track changes in the re-submitted files*.* | | |
| **2. Questions for General Evaluation** | **Reviewer’s Evaluation** | **Response and Revisions** |
| Does the introduction provide sufficient background and include all relevant references? | Must be improved | *Agreed. For improvement, we added some more research information into introduction. We organized the introduction so that our purpose is stated better and linked to other parts of the paper.* |
| Are all the cited references relevant to the research? | Can be improved | *Agreed. For improvement, all references were checked again for their relevance with our research. Some were deleted. New cited references that support our work were added and their significance was discussed clearly.* |
| Is the research design appropriate? | Can be improved | *Agreed. For improvement, steps of our methodology were stated much clearly in “Materials and Methods” part. References with similar methodologies were cited.* |
| Are the methods adequately described? | Must be improved | *Agreed. For improvement, we added additional statements for describing our methods clearly and in coherence with other sections.* |
| Are the results clearly presented? | Must be improved | *Agreed. For improvement, all graphics are redrawn in better styles and professional look.* |
| Are the conclusions supported by the results? | Can be improved | *Agreed. For improvement, we added additional research for benchmarking of FinFETs and related these with our work. Also we added more statements for discussion of the graphics presented.* |
| **3. Point-by-point response to Comments and Suggestions for Authors** | | |
| **Comments 1:** The paper describes the TCAD simulation of functional graded material for the gate dielectric in a Fin-FET geometry. The use of stacks of different high-k materials allows the tailoring of the effective dielectric constant. The authors use the simulations to determine a figure of merit, which seems to have been arbitrarily derived, without any reasoning of the various constants used in the equations. | | |
| **Response 1**: Thank you for pointing this out. We agree with this comment. Therefore, we have*….[Explain what change you have made. Mention exactly where in the revised manuscript this change can be found – page number, paragraph, and line.]*  *“[updated text in the manuscript if necessary]”* | | |
| **Comments 2:** Furthermore, there is no mention of the physical limitation that would prevent this simulated system from being physically made. The device structure as proposed here raises a number of questions:  1. At distance of 1 nm, how accurate would the deposition be, small variations in thicknesses will create large variations in k.  2. How constant are your constants, you would expect some migration of species that will alter the properties of the interface. At 1 nm thicknesses this might be quite a significant effect. | | |
| **Comments 3:** There are some major issues with the results graphs. The Silvaco figures are impossible to read as the font is too small and the lines are too thin. At the same time the rest of the results show a dashed line, that has no explanation and is physically impossible. It appears that the authors have simply connected the various points with a smoothed curve. | | |
| **Response 1**: Thank you for pointing this out. We agree with this comment. Therefore, we have*….[Explain what change you have made. Mention exactly where in the revised manuscript this change can be found – page number, paragraph, and line.]*  *“[updated text in the manuscript if necessary]”*  **Comments 4:** The introduction needs to be rewritten, it is currently a single paragraph which covers completely different areas. At the same time, the justification of the work is not found until line 152 and is completely missing from the introduction.  **Response 4**: Thank you for pointing this out. We agree with this comment. Therefore, we have*….[Explain what change you have made. Mention exactly where in the revised manuscript this change can be found – page number, paragraph, and line.]*  *“[updated text in the manuscript if necessary]”*  **Comments 5:**   - There should be a space between a value and the unit  -        - The decimals should be indicated using a . rather than a ,  In all the work has merit, but the paper requires some serious attention.  **Response 5**: Thank you for pointing these out. We fully agree with these points. Therefore, we have*….[Explain what change you have made. Mention exactly where in the revised manuscript this change can be found – page number, paragraph, and line.]*  *“[updated text in the manuscript if necessary]”*  **4. Response to Comments on the Quality of English Language** | | |
| **Point 1:** The English needs to be looked at, but is not the most serious issue with the paper. | | |
| **Response 1:** (in red) | | |
| **5. Additional clarifications** | | |
| *[Here, mention any other clarifications you would like to provide to the journal editor/reviewer.]* | | |