

Peer Review

Review of: "Negative Capacitance Effect at the Interface Between Si Wafers with Undulating Surfaces"

S Toumi¹

1. University of Boumerdes, Boumerdas, Algeria

Reviewer report

The study is very recent, and it represents an important axis of research. The negative capacity (NC) is of great importance in dielectrics and devices. However, the paper needs to be more representative. The results are important but are not sufficiently explained based on a physics background.

In the following are some remarks about the manuscript that should be taken into consideration by the authors:

1. The authors have to add more references; 8 references are insufficient for such important results.
 2. The authors have to add recent references.
 3. The manuscript does not meet the standards of the redaction of a paper; the authors should subdivide the whole text into abstract, introduction, theoretical background, results and discussion, and conclusion sections.
- The authors have to compare their results with several references, not just one reference.
 - The authors should rewrite the manuscript; some sentences are badly written.
 - The study seems important, but it is not well presented. It is presented as a rapid report analysis, not as a paper to be published in a journal.
 - The authors should cite the importance of such a device with $C < 0$ in technological applications.
 - The authors should complete the title of figure 7.
 - It is better to represent the arrow of each current in the exact place where it flows.

- In the results: "Based on these results, we now discuss the characteristics of negative capacitance. First, negative capacitance is only observed in the low-frequency region in the two-Si-resistor structure.....A contributing to positive capacitance", the authors have just reported the five observations; more physics explanation is required at this stage.

Taking into consideration these remarks, I think that the manuscript could be an excellent paper.

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Attachments: available at <https://doi.org/10.32388/Q31J1X>

Declarations

Potential competing interests: No potential competing interests to declare.