# Article information:

Active Gate Drive Circuit with Auxiliary Drive Branch for SiC MOSFET | IEEE Conference Publication | IEEE Xplore  
<https://ieeexplore.ieee.org/document/9983155>

# Article summary:

1. This paper proposes an active gate drive circuit with an auxiliary gate drive branch to suppress voltage and current surges and oscillations during switching of SiC MOSFETs.

2. The experimental results show that the proposed SiC MOSFET active gate drive circuit reduces the gate current overshoot by 48.5% during the turn-on process, and reduces the drain-source voltage overshoot by 52.4% during the turn-off process.

3. The existing SiC MOSFET active gate drive circuit has the disadvantages of not being able to simultaneously optimize and suppress overshoot, reduce switching loss and complex implementation.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article is generally reliable in terms of its content, as it provides a detailed description of a proposed active gate drive circuit with an auxiliary gate drive branch for SiC MOSFETs, as well as experimental results that demonstrate its effectiveness in reducing voltage and current overshoots during switching processes. However, there are some potential biases in the article that should be noted. For example, while the article does mention some existing solutions for suppressing voltage and current overshoots in SiC MOSFETs, it does not provide any counterarguments or evidence to support why these solutions may be inadequate or insufficient compared to the proposed solution presented in this paper. Additionally, while the article does provide some details on how this new solution works, it does not provide any information on possible risks associated with using this new solution or any potential drawbacks that could arise from its use. Furthermore, while the article does present both sides of the argument (i.e., existing solutions vs proposed solution), it does not present them equally; instead, it focuses more heavily on promoting its own proposed solution without providing adequate evidence or counterarguments for why other solutions may be inadequate or insufficient compared to its own solution. As such, readers should take these potential biases into consideration when evaluating this article's trustworthiness and reliability.

# Topics for further research:

* SiC MOSFET voltage and current overshoot solutions
* Advantages and disadvantages of active gate drive circuits
* Potential risks associated with using active gate drive circuits
* Comparison of existing solutions for SiC MOSFETs
* Experimental results of active gate drive circuits
* Counterarguments for proposed active gate drive circuits

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