# Article information:

Effects of 5 MeV Proton Irradiation on 1200 V 4H-SiC VDMOSFETs ON-State Characteristics | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/document/9107145>

# Article summary:

1. This paper investigates the effects of 5 MeV proton irradiation on ON-state characteristics of 1200 V 4H-SiC VDMOSFETs.

2. The results show that the threshold voltage decreases with increasing irradiation doses due to the generation of net positive charges near the SiO2/4H-SiC interface.

3. The un-trapped near interface electron traps (NIETs) are reduced by the ionization effect of proton irradiation, which could be beneficial to the improvement of field effective mobility (μFE).

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article is a reliable source for information regarding the effects of 5 MeV proton irradiation on ON-state characteristics of 1200 V 4H-SiC VDMOSFETs. The authors provide a detailed analysis and explanation for their findings, and they cite relevant research to support their claims. Additionally, they discuss potential risks associated with proton irradiation and how it can affect device performance.

The article does not appear to have any biases or one-sided reporting, as it presents both sides equally and provides evidence for its claims. Furthermore, all claims made in the article are supported by evidence from experiments and other sources, making them trustworthy and reliable. There are no missing points of consideration or unexplored counterarguments in this article either.

The only potential issue with this article is that it may contain some promotional content as it discusses the advantages of using SiC semiconductor materials in power electronics applications. However, this does not detract from its overall reliability as a source of information about proton irradiation effects on 4H-SiC VDMOSFETs.

# Topics for further research:

* Proton irradiation effects on semiconductor devices
* SiC semiconductor materials in power electronics
* ON-state characteristics of VDMOSFETs
* Radiation damage to semiconductor devices
* Mitigation of radiation damage in semiconductor devices
* Proton irradiation effects on 4H-SiC VDMOSFETs

# Report location:

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