# Article information:

Micromachines | Free Full-Text | Precision Layered Stealth Dicing of SiC Wafers by Ultrafast Lasers
<https://www.mdpi.com/2072-666X/13/7/1011>

# Article summary:

1. This article discusses a precision layered stealth dicing (PLSD) method by ultrafast lasers to separate semi-insulated 4H-SiC wafers with a thickness of 508 μm.

2. The laser power attenuates linearly from 100% to 62% in a gradient of 2% layer by layer from the bottom to the top of the wafer.

3. The anisotropy of the SiC wafer results in various qualities of PLSD cross sections, with the roughness of the crystal plane {10−10} being 20% lower than that of the crystal plane {11−20}.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

This article is generally reliable and trustworthy, as it provides detailed information on a new precision layered stealth dicing (PLSD) method for separating semi-insulated 4H-SiC wafers with a thickness of 508 μm using ultrafast lasers. The article also provides an analysis on the effects of laser pulse energy, pulse width, and crystal orientation on the quality of PLSD cross sections.

The article does not appear to be biased or one-sided, as it presents both sides equally and does not promote any particular point of view. It also does not contain any unsupported claims or missing points of consideration, as all claims are supported by evidence and all relevant points are discussed in detail. Furthermore, there are no unexplored counterarguments or missing evidence for any claims made in the article.

The only potential issue with this article is that it does not discuss any possible risks associated with using this method for separating SiC wafers. While it is clear that this method has many advantages over traditional diamond blade dicing methods, it would be beneficial to discuss any potential risks associated with using this method so that readers can make an informed decision about whether or not to use it.

# Topics for further research:

* Risks associated with ultrafast laser dicing
* Advantages of precision layered stealth dicing
* Effects of laser pulse energy on PLSD cross sections
* Safety considerations for PLSD of 4H-SiC wafers
* Comparison of PLSD and diamond blade dicing
* Potential applications of PLSD in semiconductor manufacturing

# Report location:

<https://www.fullpicture.app/item/1fa5f8e3cc36a19dd8d7394e8c2218a9>