# Article information:

Influence mechanism of defects on the subsurface damage and structural evolution of diamond in CMP process - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0169433221017050>

# Article summary:

1. A model with defects was built to investigate the influence of initial defects on the subsurface damage and structural evolution of diamond in CMP process.

2. Simulation results show that the substrate with initial defects will produce more amorphous damage layers compared with the ideal substrate.

3. Smaller pit defects have a little effect on the surface morphology, while larger pit defects will cause poor surface quality and more severe subsurface damage.

# 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:

The article titled “Influence mechanism of defects on the subsurface damage and structural evolution of diamond in CMP process” is a well-researched piece that provides an insight into how initial defects can affect the subsurface damage and structure evolution of diamond during chemical mechanical polishing (CMP). The article is based on ReaxFF molecular dynamics simulations, which are reliable methods for studying such phenomena. The authors provide detailed information about their research methodology, which makes it easy to assess its trustworthiness and reliability.

The article does not appear to be biased or one-sided as it presents both sides of the argument equally. It also does not contain any promotional content or partiality towards any particular point of view. Furthermore, all claims made in the article are supported by evidence from experiments and simulations, making them reliable and trustworthy.

However, there are some points that could have been explored further in order to make this article more comprehensive. For example, there is no mention of possible risks associated with using CMP processes on diamonds or other materials with initial defects. Additionally, there is no discussion about how different types of abrasives may affect the results obtained from these simulations or experiments. These points should be considered in future research in order to gain a better understanding of this phenomenon.

In conclusion, this article is generally reliable and trustworthy as it provides detailed information about its research methodology and supports all claims made with evidence from experiments and simulations. However, there are some points that could have been explored further in order to make this article more comprehensive.

# Topics for further research:

* CMP process risks
* Different types of abrasives
* Subsurface damage of diamond
* Structural evolution of diamond
* ReaxFF molecular dynamics simulations
* Effects of initial defects on CMP process

# Report location:

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