# Article information:

Nucleation Mechanism of Discontinuous Dynamic Recrystallization with Restrained Grain Boundary Sliding | SpringerLink
[https://link.springer.com/article/10.1007/s12540-020-00847-x?utm\_source=xmol=affiliate=meta=DDCN\_1\_GL01\_metadata](https://link.springer.com/article/10.1007/s12540-020-00847-x?utm_source=xmol&utm_medium=affiliate&utm_content=meta&utm_campaign=DDCN_1_GL01_metadata)

# Article summary:

1. The discontinuous dynamic recrystallization (DDRX) nucleation process was investigated during the TMP of a nickel-based superalloy with a coarse columnar-grain structure.

2. It was found that the ‘newborn boundary’, which separates the free-strain volume from deformed grain to close this area, was formed through dislocation piling-up and rearrangement instead of strain induction or twinning caused grain boundary shearing.

3. A potential nucleation theory was then proposed and discussed, which is expected to enrich the discontinuous dynamic recrystallization theory.

# 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:

The article provides an in-depth analysis of the nucleation mechanism of Discontinuous Dynamic Recrystallization (DDRX) with restrained Grain Boundary Sliding (GBS). The authors provide evidence for their claims by citing previous research and experiments conducted on a nickel-based superalloy with a coarse columnar-grain structure. The article is well written and provides clear explanations for its findings.

The article does not appear to be biased or one sided as it presents both sides of the argument equally and acknowledges counterarguments where appropriate. Furthermore, it does not contain any promotional content or partiality towards any particular point of view. The article also mentions possible risks associated with DDRX nucleation processes, such as grain boundary bulging and local grain boundary shearing due to GBS.

In conclusion, this article appears to be reliable and trustworthy as it provides evidence for its claims and presents both sides of the argument equally without bias or partiality towards any particular point of view.

# Topics for further research:

* Discontinuous Dynamic Recrystallization
* Grain Boundary Sliding
* Nickel-based Superalloy
* Columnar-Grain Structure
* Grain Boundary Bulging
* Local Grain Boundary Shearing

# Report location:

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