# Article information:

Experimental investigation on heat transfer and pressure drop of a novel cylindrical oblique fin heat sink - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1290072913001968>

# Article summary:

1. This article presents an experimental investigation on the heat transfer and pressure drop of a novel cylindrical oblique fin heat sink.

2. The proposed design consists of two types of channel arrays, main flow channels and oblique secondary channels, which disrupts and reinitializes the boundary layer development periodically to enhance heat transfer performance.

3. Edge effect was discussed and experiments were conducted to verify its effect on heat transfer, with a cylindrical oblique fin minichannel structure proposed to eliminate the edge effect and improve fluid-solid contact surface area.

# 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 presents an experimental investigation on the heat transfer and pressure drop of a novel cylindrical oblique fin heat sink. The proposed design consists of two types of channel arrays, main flow channels and oblique secondary channels, which disrupts and reinitializes the boundary layer development periodically to enhance heat transfer performance. Edge effect was discussed and experiments were conducted to verify its effect on heat transfer, with a cylindrical oblique fin minichannel structure proposed to eliminate the edge effect and improve fluid-solid contact surface area.

The article is generally reliable in terms of presenting evidence for its claims made throughout the text. It provides detailed descriptions of the experimental setup used for testing as well as providing numerical values for various parameters such as Reynolds number range, pitch size, aspect ratio etc., which adds credibility to its findings. Furthermore, it also cites relevant literature from previous studies that are related to this topic which further strengthens its trustworthiness.

However, there are some potential biases present in this article that should be noted. Firstly, there is no discussion or mention of any possible risks associated with using this novel cylindrical oblique fin minichannel structure such as corrosion or other environmental impacts that may arise from using copper material for fabrication purposes. Secondly, while it does cite relevant literature from previous studies related to this topic, it does not explore any counterarguments or alternative solutions that have been presented by other researchers in their work which could provide additional insights into this topic. Lastly, while it does provide numerical values for various parameters such as Reynolds number range etc., it does not provide any evidence or data points that support these values which could help readers better understand how these values were obtained in the first place.

In conclusion, while this article is generally reliable in terms of presenting evidence for its claims made throughout the text, there are some potential biases present in this article

# Topics for further research:

* Corrosion risks associated with copper material
* Alternative solutions for heat transfer enhancement
* Data points for Reynolds number range
* Edge effect on heat transfer
* Environmental impacts of cylindrical oblique fin minichannel structure
* Fluid-solid contact surface area optimization

# Report location:

<https://www.fullpicture.app/item/329660eb62a4389aed0c73121834c7a5>