# Article information:

Numerical investigation on thermal–hydraulic performance of supercritical LNG in a Zigzag mini-channel of printed circuit heat exchanger - ScienceDirect
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# Article summary:

1. This paper investigates the thermal-hydraulic performance of supercritical LNG in a Zigzag mini-channel of printed circuit heat exchanger.

2. The numerical model was built and validated against experimental data of supercritical CO2 flow.

3. Correlations for the Fanning friction factor and Nusselt number were developed within a deviation of ±5%, aiming to apply to the prediction of thermal–hydraulic performance of supercritical LNG.

# 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 is generally reliable and trustworthy, as it provides detailed information on the numerical investigation on thermal–hydraulic performance of supercritical LNG in a Zigzag mini-channel of printed circuit heat exchanger. The authors have provided sufficient evidence for their claims, such as experimental data from supercritical CO2 flow, which supports their findings and conclusions. Furthermore, they have also proposed correlations for the Fanning friction factor and Nusselt number within a deviation of ±5%, which can be used to predict the thermal–hydraulic performance of supercritical LNG.

However, there are some potential biases that should be noted in this article. Firstly, the authors have only focused on one type of hydrocarbon fluid (LNG), which may limit their findings to this particular fluid only. Secondly, they have not explored any counterarguments or alternative solutions to their proposed correlations for predicting thermal–hydraulic performance. Lastly, there is no mention of possible risks associated with using PCHEs in FLNG vessels or other applications mentioned in the article.

In conclusion, while this article is generally reliable and trustworthy, there are some potential biases that should be taken into consideration when assessing its trustworthiness and reliability.

# Topics for further research:

* Alternative solutions for predicting thermal–hydraulic performance
* Risks associated with using PCHEs in FLNG vessels
* Numerical investigation of supercritical hydrocarbon fluids
* Experimental data for supercritical CO2 flow
* Correlations for Fanning friction factor and Nusselt number
* Applications of PCHEs in other industries

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