

COVER LETTER

6 December 2023

Jurnal Sinergi-Universitas Mercu Buana

Dear Prof. Dr. Andi Ardiansyah,
Editors-in-Chief

I am pleased to submit our research paper titled " *Heat Transfer and Pressure Characteristics of Triethylene Glycol/Water and Ethylene Glycol/Water Mixtures in Copper Pipe Heated Flow Systems*" . This study delves into crucial advancements within cooling technology, aiming to investigate the heat transfer and pressure properties of fluid mixtures in copper pipe flow systems.

We wish to highlight the following points regarding our submitted manuscript:

1. **Novelty:** Our research focused on comparing the heat transfer coefficient and pressure characteristics of ethylene glycol (EG)/water and triethylene glycol (TEG)/water mixtures. Through a series of meticulously designed experiments, we rigorously examined and contrasted the performance of these mixtures within the system. Notably, our findings unveiled distinct heat transfer characteristics, showcasing a marked 2.0% increase in heat transfer coefficient and a corresponding 1.0% pressure reduction when utilizing the TEG/water mixture at a Reynolds number of approximately 37.0%. One of the key observations highlighted in our study was the impact of varying fluid flow rates on both heat transfer and pressure drop. The TEG/water mixture exhibited a favorable decrease in pressure drop owing to the lower viscosity of the EG/water fluid, signifying potential advantages in optimizing large-scale cooling and heating systems. We believe that our comparative analysis offers valuable insights into the performance attributes of these fluid mixtures, specifically in the context of copper pipe flow applications. This knowledge could serve as a pivotal reference for engineers and researchers engaged in the optimization and design of efficient cooling and heating systems.
2. We have given our consent and approval for the submission of this manuscript to the *Jurnal Sinergi-Universitas Mercu Buana*. We declare that there are no conflicts of interest
3. The main contribution of this study is that we are able to significantly enhance the understanding of thermal sciences and heat exchanger applications. We believe that the *Jurnal Sinergi-Universitas Mercu Buana* is the most suitable platform to disseminate our findings to the global scientific community.

We look forward to receiving a favorable response from you regarding our submission.

Yours faithfully,

Sukarman,
Universitas Buana Perjuangan Karawang