



# Editorial: Bridging Thermo-Fluid Science and Sustainability for a Resilient Future

Muhammad Ijaz Khan<sup>1,\*</sup> and Ghulam Rasool<sup>2</sup>

<sup>1</sup>Department of Mechanics and Engineering Sciences, Peking University, Beijing 100871, China

<sup>2</sup>Department of Mechanical Engineering, Prince Mohammad Bin Fahd University, Kingdom of Saudi Arabia

The era of climate urgency and accelerating technological transformation demands more than incremental advances—it calls for integrative, system-level innovations across the energy, environment, and manufacturing sectors. Thermo-fluid systems lie at the heart of this transition, powering innovations in clean energy, efficient thermal management, carbon capture, and sustainable industrial processes. The *International Journal of Thermo-Fluid Systems and Sustainable Energy* launches at this critical intersection, offering a dedicated platform to channel cutting-edge research into impactful, scalable solutions.

Our journal is grounded in the belief that thermo-fluid science must evolve beyond its classical boundaries, engaging with data-driven design, nanotechnology, renewable energy systems, and AI-based optimization. From modeling turbulent flow in smart HVAC networks to developing nano-enhanced phase change materials for thermal storage, the thermo-fluid community is reshaping the foundation of sustainable development.

Despite the vast progress, many existing publications

continue to segregate applied thermal-fluid science from emerging interdisciplinary trends. Our journal addresses this gap—welcoming both fundamental studies and application-focused research that contribute to decarbonization goals, energy efficiency, and the design of future-proof fluidic systems. Whether it is entropy-aware modeling, hybrid nanofluid simulations, or integrated solar desalination systems, we seek studies that merge theory, computation, and practical deployment.

We champion three guiding principles: scientific rigor, engineering relevance, and sustainability impact. Our editorial board brings together experts from across academia and industry to ensure fair, constructive, and timely peer review. Authors can expect a transparent review process focused on constructive feedback, rapid dissemination, and global visibility.

As we publish this inaugural issue, we extend sincere gratitude to the researchers, reviewers, and editors who contributed to this milestone. Your commitment to excellence and innovation shapes this journal into more than just a repository of articles—it becomes a dynamic platform for collaboration and advancement. Together, we aim to accelerate the transformation toward low-carbon, high-efficiency, and intelligent energy systems. We welcome researchers, practitioners, and policymakers to engage,

## Citation

Khan, M. I. & Rasool, G. (2025). Editorial: Bridging Thermo-Fluid Science and Sustainability for a Resilient Future. *International Journal of Thermo-Fluid Systems and Sustainable Energy*, 1(1), 1–2.



© 2025 by the Authors. Published by Institute of Central Computation and Knowledge. This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>).



Submitted: 22 June 2025

Accepted: 22 June 2025

Published: 29 June 2025

Vol. 1, No. 1, 2025.

10.62762/IJTSSE.2025.427436

\*Corresponding author:

✉ Muhammad Ijaz Khan

2106391391@pku.edu.cn

contribute, and help define the future of thermo-fluid sciences in the context of sustainable development.

*Let this journal be not only a reflection of where we are—but a vision of where we must go.*

### Data Availability Statement

Not applicable.

### Funding

This work was supported without any funding.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Ethical Approval and Consent to Participate

Not applicable.



**Dr. Muhammad Ijaz Khan** Received MS and PhD from Quaid-I-Azam University, Islamabad, Pakistan in the year 2016 and 2019 in Applied Mathematics for work in the field of CFD analysis, Flow Behavior and Numerical techniques (AI). Currently working as Assistant Professor in the Department of Mechanical Engineering, Prince Mohammad Bin Fahd University, P. O. Box, 1664, Al-Khobar 31952, Kingdom of Saudi Arabia. Contributed more than 50 research-level papers to many International journals. Research interests include Sensor Networks, Machine Learning, and Cloud computing, Flow Behavior, CFD analysis. (Email: 2106391391@pku.edu.cn)