



Advances in Supercritical CO₂ Power Cycle Applications

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Message from the Guest Editor

The behaviour of nearly critical fluids, the physical singularity of matter, is fascinating and of interest to the engineering community. Power generation using supercritical CO₂ technology is attracting attention as an innovation that can contribute to the global energy crisis by making a more efficient system. However, supercritical CO₂ systems that actively exploit the rapid changes in properties near the criticality are still largely unexplored and require active research and development.

This Special Issue aims to present and disseminate the most recent advances related to the theory, design, modelling, application, control, and condition monitoring of all types of near-critical CO₂ power conversion system.

The topics of interest for publication include, but are not limited to:

- All aspects of supercritical CO₂ systems;
- Novel applications of near-critical CO₂ systems;
- Control logics for supercritical CO₂ systems;
- Operation and maintenance technologies for supercritical CO₂ systems;
- Advanced modelling approaches;
- Optimal design methodologies;
- Numerical analysis methodologies.





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Message from the Editor-in-Chief

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