

Editorial

Recent Advancement of Thermal Fluid Engineering in the Supercritical CO₂ Power Cycle

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The supercritical CO₂ (S-CO₂) power cycle is an emerging energy technology that has potential to revolutionize the conversion process of heat to mechanical or electric power. Currently, the technology development is being actively pursued in many countries thanks to the support of governments and the industry. At the same time, the technology is already being commercialized in the waste heat recovery sector successfully and it is diffusing to other conventional energy source applications such as gas, coal and nuclear power. For renewable energy sources such as concentrated solar power, the S-CO₂ power cycle stems as a technology which can enable a substantial reduction of the cost of electricity, thus contributing to a larger penetration of environmentally friendly, dispatchable and cost-effective energy technologies.

This Special Issue contains up-to-date techno-economical information regarding the S-CO₂ power cycle. The contents of this issue cover from component level technologies such as turbine [1–3], compressor [4] and heat exchanger [5] to system level information such as cycle analysis [6,7] and economic assessment [8] of the S-CO₂ power cycle. The articles in the issue were provided by groups of researchers spread across globally and they come from different types of organizations, which also tells how active this area is being researched at the moment. The editors would like to thank all the authors who contributed to this Special Issue and feel very privileged to have had the opportunity to produce this Special Issue. They also hope that this Special Issue contributes to the advancement of the S-CO₂ power cycle technology by informing and inspiring many researchers in this field.

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