Editorial

Special Issue dedicated to the 1st International Conference on Supercritical CO₂ Power System (ICSCPS 2018)

This Special Issue of Journal of Thermal Science (JTS) contains a selection of peer-reviewed papers from the ICSCPS 2018, held in Beijing, China during June 29th to July 1st, 2018. The conference was chaired by professor Jinliang Xu from the North China Electric Power University and sponsored by the Ministry of Science and Technology of China based on the National Key Research & Development Project "Fundamental studies and key technology development of high-efficiency carbon dioxide coal-fired power system".

The conference aimed to bring together leading academic scientists and researchers worldwide to share their outcomes and experiences on supercritical CO₂ (S-CO₂) power systems and to discuss the practical challenges. A wide range of topics were covered by the conference including coal-fired power generation, clean energy utilization, thermodynamic cycles, system optimization as well as life cycle and economic analysis of the power system.

Fourteen papers collected in this Special Issue have passed the conference review process and been presented at ICSCPS 2018. To make sure that these papers are eligible for publication in JTS, a further peer review process by qualified international reviewers was also carried out by JTS after the conference, which finally resulted in the selections of this Special Issue, which is a valuable presentation of the state-of-the-art advances in S-CO₂ Power systems.

Research papers cover the subjects of combination of CO₂ cycle with pulverized or fluidized bed coal-fired boiler, solar energy, solid oxide fuel cell (SOFC) and diesel engine. Especially, Professor Ilmutdin Abdulagatov from the Russian Academy of Sciences has contributed a critical review on the S-CO₂ properties and technological applications; Prof. Jinliang Xu and coauthors have

investigated the reheat arrangements in application of S-CO₂ cycle in coal-fired power generation systems. Topics also include the proper selection of the material dispersion using supercritical fluid media, the heat transfer characteristics of S-CO₂ in heat transfer tubes in a pulverized coal-fired furnace, the S-CO₂ cycle applied in a fluidized bed boiler, the performance of S-CO₂ cycle and ORC combined system considering the diurnal distribution of solar radiation, the S-CO₂ cycle and a radial turbine for SOFC vehicle waste-heat recovery, the transcritical Rankine cycle for multiple waste heat recovery of a diesel engine using CO₂ as the working medium.

It is therefore with pleasure that we were given the opportunity to edit this Special Issue. We would like to thank all the contributors of this Special Issue for their support and cooperation. We also thank all the reviewers for their critical comments to ensure the academic quality of this Special Issue.

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