

## Special Issue

# CO<sub>2</sub> Technologies for Energy Conversion and Waste Heat Recovery

### Message from the Guest Editors

The thermophysical properties of CO<sub>2</sub> indeed can bring many advantages in several applications. Compared to conventional technologies, supercritical CO<sub>2</sub> power cycles allow for instance a more efficient exploitation of waste heat sources at higher temperatures and lower scales (down to hundreds of kW), as well as renewables energy sources like solar (Concentrated Solar Power, CSP), geothermal energy and nuclear fusion reactors. Furthermore, they are the most promising candidate for next generation nuclear fission power plants. For heating and cooling, CO<sub>2</sub> represents a much more environmental friendly fluid compared to conventional refrigerants, and it is one of the most suitable fluid candidate for the development of high temperature heat pumps, which may play an important role for energy storage as well as the decarbonisation of heat in industrial applications and buildings. Many challenges are still hindering the commercialization of such technologies as thermodynamic design and optimisation, turbomachinery development, dynamics and control and suitable auxiliary equipments as bearings, seals and valves.

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### Guest Editors

Dr. Matteo Marchionni

Dr. Luca Migliari

Dr. Victor Tola

Dr. Mario Petrollese

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### Deadline for manuscript submissions

closed (30 April 2024)



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*Energies*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[energies@mdpi.com](mailto:energies@mdpi.com)

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### Editor-in-Chief

Prof. Dr. Enrico Sciubba

Department of Mechanical and Industrial Engineering, University  
Niccolò Cusano, 00166 Roma, Italy

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