

## Special Issue

# Sustainable Thermal Energy Storage Systems: New Methods, Technologies and Practice

### Message from the Guest Editors

This Special Issue in Sustainability focuses on advancing thermal energy storage (TES) systems to enhance energy efficiency, reduce carbon emissions, and support renewable energy integration. The Special Issue emphasizes innovative materials, system designs, optimization techniques, and real-world applications that contribute to sustainable energy solutions. The Special Issue covers a broad range of topics including, but not limited to, the following:

- Advanced TES materials (phase change materials, sensible heat storage, and thermochemical storage);

- System design and optimization (efficiency improvements, cost reduction, and scalability);

- Integration with renewable energy (solar, wind, and waste heat recovery);

- Industrial and building applications (district heating, cooling systems, and industrial processes);

- Economic and environmental assessments (lifecycle analysis, policy implications, and circular economy approaches);

- Emerging technologies (AI-driven control systems, hybrid storage solutions, and nanotechnology applications);

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### Guest Editors

Dr. Valeria Palomba

Dr. Ilaria Marotta

Dr. Antonio Fotia

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### Deadline for manuscript submissions

31 May 2026



**Sustainability**

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## About the Journal

### Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

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### Editor-in-Chief

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