

Special Issue

Sustainable Recycling of Metal Solid Waste and By-Products in the Photovoltaic Industry

Message from the Guest Editors

The rapid expansion of the global photovoltaic industry has created an urgent sustainability challenge in managing silicon-rich solid waste generated throughout the PV lifecycle. Transforming these silicon-based wastes into valuable secondary resources is essential for reducing the industry's environmental footprint, securing supply chains against resource scarcity, and ensuring long-term sustainability. The intrinsic value locked within these waste streams presents both a significant opportunity for resource recovery and a critical test for applying industrial ecology principles to the clean energy sector.

We welcome contributions to this Special Issue that address advanced recycling and upcycling technologies for silicon-rich PV waste. We are particularly interested in strategies that transform these secondary resources into high-value materials, supporting a circular economy and enhancing the overall sustainability of the photovoltaic industry.

- photovoltaic waste
- solid waste recycling
- upcycling
- synthesis techniques
- sustainable materials
- circular economy
- silicon material
- hydrometallurgy
- end-of-life photovoltaic modules

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

Prof. Dr. Yong Zhang

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CiteScore - Q1 (Metals and Alloys)

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