
Editorial

Advanced Materials & Sustainable Manufacturing: A New Open-Access Journal to Share Your Research on Advanced Materials and Sustainable Manufacturing

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Received: 30 November 2023; Accepted: 30 November 2023; Available online: 30 November 2023



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Materials technology is one of the core driving forces for the development of modern science and technology, and it also brings more opportunities and challenges to social development. Research on advanced materials has always received great attention from various communities. Functional materials, green materials, smart materials, nanomaterials, etc. have become important research directions in today's materials technology [1]. Processing materials and transforming them into products that meet specified requirements is an essential task of the manufacturing industries.

Controlling climate change and reducing carbon emissions, environmental pollution, and natural resource consumption are currently major challenges at international level. In response to these major challenges, the United Nations Development Summit formulated the "2030 Agenda for Sustainable Development" in 2015 [2]. In September 2023, the United Nations held the Sustainable Development Goals Summit to further promote the global sustainable development action plan. The concept of "sustainable development" was first clearly stated by the World Commission on Environment and Development (WCED) in 1987 [3]. With the increasingly severe situation on climate, environment, and energy in today's world, the concept and goals of sustainable development have become today's important consensus of the international community.

From the perspective of the manufacturing industries, the concept of sustainable development deeply affects their development direction and model, but also constantly raises new topics for science and technology. The concept of "sustainable manufacturing", aims to develop "a process that is pollution-free, saves energy and other natural resources, and meets the economic and safety needs of employees, social communities and consumers" [4]. Green manufacturing and intelligent manufacturing are considered as the main means to achieve sustainable manufacturing.

"Green manufacturing" primarily emphasizes green products and the environmental friendliness of the product manufacturing processes. Despite the long duration for promoting the concept of green manufacturing and performing associated theoretical and practical research and applications, the study and applications in this area still remain continuously crucial. "Intelligent manufacturing" emphasizes the deep integration of next-generation information and communication technologies with advanced manufacturing, artificial intelligence, and other technologies to achieve the intelligent and automated manufacturing processes, enhancing manufacturing production efficiency and quality while reducing labor requirements. With the advancement of information technology, intelligent manufacturing technology has witnessed unprecedented development since the 21st century. However, it is generally believed that intelligent manufacturing is still in its early stages, and further theoretical and applied research is needed to progress.

In general, sustainable manufacturing, green manufacturing, and intelligent manufacturing involve the interdisciplinary integration of advanced materials, green/intelligent products, green/intelligent design methods, online detection and control, artificial intelligence, industrial big data, and advanced manufacturing technology. Relevant theoretical and technical foundations and applied research are still in continuous development, representing hotspots that require in-depth exploration, deserving sustained attention from scholars and engineering professionals worldwide.

To provide a platform for scholars to exchange research findings in the fields of advanced materials and sustainable manufacturing, we, in collaboration with internationally renowned scholars who share similar goals, have established the international academic journal “Advanced Materials and Sustainable Manufacturing (AMSM).” The aim is to promote the in-depth integration of research directions in advanced intelligent materials and intelligent sustainable manufacturing against the backdrop of environmental conservation. We earnestly hope to contribute, alongside our scholarly colleagues, to the academic prosperity and development of this field.

References

1. Yin Y, Rogers JA. Introduction: smart materials. *Chem. Rev.* **2022**, *122*, 4885–4886.
2. Shulla K, Leal Filho W. *Achieving the UN Agenda 2030: Overall Actions for the Successful Implementation of the Sustainable Development Goals before and after the 2030 Deadline*; European Parliament: Brussels, Belgium, 2023.
3. Brundtland GH. *Our Common Future; World Commission on Environment and Development*; Oxford University Press: Oxford, UK, 1987; pp. 53–78.
4. Ching N T, Ghobakhloo M, Iranmanesh M, Maroufkhani P, Asadi S. Industry 4.0 applications for sustainable manufacturing: A systematic literature review and a roadmap to sustainable development. *J. Clean. Prod.* **2022**, *334*, 130133.