

Call For Papers

Special Session: Intelligent Systems to Human-aware Sustainability

Conference: The 2022 International Conference on Cyber-physical Social Intelligence (ICCSI)

Date: October 21-24, 2022

Meeting mode: Hybrid

Location: Nanjing, China

Web site: <https://iccsi2022.agist.org>

Theme: Human-aware sustainability will be the important factor in the future development of manufacturing, whose main focus will be on sustainable industrial processes. As human beings pay more attention to the earth's ecological environment and energy resources, various countries have put forward energy-saving and emission reduction requirements for production processes, such as the EU's Industry 5.0 and China's 14th Five-Year Plan. Product production is a system engineering, including product design, manufacturing, use and recycling processes. Otherwise, human beings consider sustainability at all stages of product production can greatly reduce carbon emissions and environmental pollution, however, the production system is complex, which is difficult to develop reasonable plans responding to sustainability requirements. Intelligent systems have the ability to think logically to solve problems in production systems, by automatically acquiring and processing knowledge and data. Artificial intelligence (AI) can help designers intelligently analyze customer demand, extract sustainable design goals and quickly generate design solutions that meet requirements. Product manufacturing process often consume large amounts of energy and materials and generate large carbon emissions, and AI can assist processors in optimizing process routes and parameters to achieve energy savings and emissions reductions. Furthermore, in the end of product life, the sustainability of the whole system is influenced by the logistics network for reverse recycling of used products, the mode of reuse of used products, and the planning of remanufacturing processes. Due to the uncertainty of the quality condition, service condition and failure characteristics of used products, it is difficult to develop a perfect plan for disposal of used products in achieving energy saving and emission reduction. Intelligent technologies enable rapid processing of big data, analysis, and decision making in conjunction with sustainability goals, which can improve generation efficiency, reduce environmental pollution and energy consumption. The purpose of this Special Section is to collect the latest researches and achievements, and discuss the progresses regarding advanced intelligent techniques for achieving sustainability in production systems.

The topics include but are not limited to:

- Intelligent design method for remanufacturing (DfRem)
- AI applied for sustainable design
- Intelligent manufacturing process design method considering carbon emission
- AI applied for green workshop production scheduling based on human-machine collaboration
- Intelligent technology applied for sustainable supply chain
- Intelligent reverse logistics network design, recycling model selection and evaluation
- Intelligent remanufacturing process planning and evaluation method
- Data-driven remanufacturing scheme generation and optimization
- Applications that combine Internet of Things (IoT), 5G, and AI in sustainable manufacturing systems

Important Dates:

May 15, 2022,	Full paper submission
July 1, 2022,	Acceptance/Rejection notification
August 31, 2022,	Final camera-ready papers due

Special Session Co-chairs:

Prof. Zhigang Jiang (Wuhan University of Science and Technology, CHINA), email jzg100@163.com

Ph.D.Chao Ke Wuhan (University of Science and Technology, CHINA), email karlkc@163.com

Contributions:

1. “Digital twin-based sustainable intelligent manufacturing: a review” by He Bin / Bai Kai-Jian
2. “Human-Cyber-Physical Systems (HCPSs) in the Context of New-Generation Intelligent Manufacturing” by Zhou Ji /Zhou Yanhong
3. “Toward New-Generation Intelligent Manufacturing” by Zhou Ji/Li Peigen
4. “Big Data Analytics for Physical Internet-based intelligent manufacturing shop floors” by Zhong, Ray Y. /Xu, Chen
5. “Deep learning-driven particle swarm optimisation for additive manufacturing energy optimisation” by Qin, Jian /Liu, Ying
6. “A data-driven based decomposition-integration method for remanufacturing cost prediction of end-of-life products” by Jiang, Zhigang /Ding, Zhouyang
7. “Disassembly task planning for end-of-life automotive traction batteries based on ontology and partial destructive rules” by Yu Jianping/Zhang Hua