Special Issue

Smart Manufacturing based on Sensing Technology: Digital Twin, Artificial Intelligence and Human–Robot Collaboration

Message from the Guest Editors

The integration of cutting-edge sensing technologies in the contemporary manufacturing landscape has led to the emergence of smart manufacturing, emphasizing the seamless integration of physical and digital systems for enhanced efficiency and innovation. This integration has facilitated transformative advancements in digital twin implementations, artificial intelligence applications, and the promotion of effective human–robot collaboration in modern manufacturing environments. Digital twin technologies simulate and optimize manufacturing processes, enhancing productivity, while artificial intelligence empowers proactive process optimization. Sophisticated human–robot collaboration strategies redefine manufacturing boundaries, fostering a collaborative ecosystem where human expertise and robotic precision work in tandem to ensure enhanced safety and productivity. This Special Issue invites researchers, academicians, and industry practitioners to contribute to the discourse on "Smart Manufacturing based on Sensing Technology: Digital Twin, Artificial Intelligence, Human-Robot Collaboration."

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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