Special Issue

Recent Advances in Medical Robots: Design and Applications

Message from the Guest Editor

Nowadays, with the deepening of the integration of medicine and engineering in this field, an increasing number of surgical and treatment scenarios present new impetus and challenges for medical robots. Advanced medical sensors, including force/torque sensors, optical sensors, and bio-sensors, serve as the nervous system of medical robots, enabling precise perception and real-time feedback during complex surgical procedures. These sensing capabilities are fundamental to achieving safe and effective human–robot collaboration.

This Special Issue will showcase the latest progress in medical robot design, including breakthroughs in sensor fusion algorithms, AI-enhanced sensory processing, and miniaturized implantable sensors. Articles focusing on intelligent perception based on artificial intelligence technology, data-driven intelligent control of robots, and efforts to optimize the design process of medical robots will also be included in this Special Issue. We expect that engineering applications can participate in the treatment process more efficiently, intelligently, and safely, thus bringing a higher quality of life to more people, not just patients.

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Message from the Editor-in-Chief

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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