Special Issue

Advancements in Actuation, Sensing, and Control Schemes for Intelligent Medical Robotics

Message from the Guest Editors

Robot-assisted surgeries have become a natural progression for standard surgical procedures and are a widely-discussed topic in today's healthcare and medical fields. This forthcoming Special Issue will include high-quality publications spanning (but not limited to) the following topics pertinent to medical robotics:

robotic mechanical design;
image-guided robot-assisted surgery;
actuator design;
kinematic/dynamic modeling;
data-driven/learning-based control;
control with cyber-physical systems in the operating room;
sensing techniques and/or fusion;
AR in interventional operations and/or medical skill training;
intuitive human–robot control interface;
evaluation of robotic systems for medical applications.

Both theoretical and practical contributions are welcome. If you have suggestions that you would like to discuss beforehand, please feel free to contact us. We look forward to and welcome your participation in this Special Issue.

Guest Editors
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Prof. Dr. Ken Masamune

Deadline for manuscript submissions
closed (20 May 2022)

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

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