Special Issue

MEMS/NEMS Sensors and Actuators for Biomedical Applications

Message from the Guest Editors

MEMS and NEMS are at the forefront of technological innovation, offering unparalleled opportunities to revolutionize healthcare applications. These miniature devices enable precise sensing, actuation, and energy conversion, making them integral to modern biomedical systems. Recent advancements in MEMS/NEMS technologies have significantly enhanced their capabilities, paving the way for groundbreaking applications in diagnostics, therapy, and patient monitoring. Inertial sensors, with their compact size and high sensitivity, are transforming motion tracking for wearable health devices and implantable systems, aiding in rehabilitation and real-time patient monitoring. RF-MEMS are pushing the boundaries of wireless communication in healthcare, enabling seamless data transmission for smart implants and telemedicine platforms. Tactile sensors inspired by human skin are playing a pivotal role in prosthetics, robotics-assisted surgery, and haptic feedback systems, offering unprecedented sensitivity and adaptability. This Special Issue explores the latest trends and innovations in MEMS/NEMS technologies, emphasizing their transformative impact on healthcare.

Guest Editors

Dr. Fahimullah Khan

Max Planck Institute of Semiconductor Physics (HLL), 85748 Munich, Germany

Dr. Muhammad Mubasher Saleem

Department of Electronic Engineering, Maynooth International Engineering College, Maynooth University-National University of Ireland, W23F2H6 Maynooth, Ireland

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

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Editor-in-Chief

Prof. Dr. Ai-Qun Liu
1. Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University, Hong Kong, China
2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore

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