

SPECIAL ISSUE ON MICRO-NANO BIOMEDICAL SENSORS, DEVICES, AND MATERIALS

PREFACE



Many studies have been carried out on the applications of micro-electromechanical systems (MEMS) technology to the biomedical field, taking advantage of its ease of downsizing, parallelization, and integration. However, since biocompatibility, disinfection, and sterilization, and high output are required in the field of biomedical applications, few studies have led to practical applications. On the other hand, peripheral technologies necessary for the commercialization of microsensors and devices have evolved significantly in recent years, making it easier to put them into practical use. This special issue consists of five articles on MEMS sensors, sensor packaging structures, and sensor integration for biomedical devices. A wearable device for the analysis of blood pressure pulse waves and electrocardiograms is a typical example of a MEMS device that will support future smart medical care. Another important research theme is to investigate the packaging structure of MEMS sensors for detecting heartbeat and other body signals, such as a structure embedded in PDMS and rubber in a tennis racket. In addition, mounting technology to embed MEMS sensors and electronic devices into yarn or cloth is also considered to be a prerequisite for future smart wearable biomedical devices. We are honored to publish papers on such MEMS sensors and mounting structures that will support future biomedical devices.

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