Special Issue

Miniaturised Medical Devices: Design, Manufacturing, Testing and Translation

Message from the Guest Editor

The miniaturisation of medical devices through the use of conventional photolithography-based microfabrication, precision machining techniques or other methods has the potential to open up new opportunities in many areas, including diagnosis, surgery and therapy. For example, miniaturised medical devices will enable minimally invasive inspection or monitoring of hard-to-reach areas of the body, providing invaluable information on the cause, presence or progression of disease. These miniaturised devices may be integrated into catheters, endoscopes, needles, skin-mounted and implanted devices or other form factors. However, these devices face challenges due to the need for biocompatibility, stricter safety requirements or harsh environmental conditions that must be overcome when designing and manufacturing. Accordingly, this Special Issue seeks to showcase research papers and review articles that focus on (1) the application of miniaturised devices in medicine; (2) the design and fabrication of novel miniaturised medical devices; and (3) challenges related to miniaturised medical devices such as packaging, sterilisation, translation and testing of these devices.

Guest Editor

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