Special Issue

Blood Flow in Microfluidic Medical Devices

Message from the Guest Editors

Many microfluidic-based medical devices contact blood to diagnose or treat diseases. Therefore, it is critical to understand the hemodynamics within microchannels and the technical challenges that device developers and manufacturers face on the path to commercialization. This Special Issue intends to discuss common flow-related concepts and challenges occurring in microfluidics with biomedical applications. We welcome papers on biomedical topics such as interactions between blood and microfluidic materials, computational fluid dynamics modeling of non-Newtonian flow in microchannels, sample loading, microfluidic pumping and mixing, cell isolation and separation in microchannels, active and passive forces to manipulate blood flow, blood element damage, clotting, microscale leakage testing, bubble formation, transport and filtering of blood using microfluidics, plug-and-play platforms for blood sample analysis, pre-clinical or clinical studies involving microfluidic systems, sensing techniques, hemocompatibility studies in microchannels, and device failure modes.

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Deadline for manuscript submissions

closed (30 June 2024)

Micromachines

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Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed

mdpi.com/si/124431

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