



Webinar Announcement on Microelectromechanical Systems (MEMS) 2020

Webinar on Microelectromechanical systems will be hosted on June 18, 2020 (GMT+8) at 19:00 O'clock. Panel of speakers will be delivering their presentations on their recent research related to MEMS Manufacturing and Microfluidics. Current state of knowledge, its impact on future will be discussed in detailed. Meetingsint. Invites all experts to be part this webinar series and make it a perfect platform for knowledge sharing and networking. When it comes to manufacturing intelligent systems such as sensors and actuators (MEMS), forms from the field of microsystem innovation have a demonstrated record of progress. Backend-of-line producing forms take into consideration organizing of MEMS wafers at a goals of a couple of micrometers.

Applications of Microfluidics & Lab-on-a-chip

Lab-on-a-chip (LOC) devices integrate and scale down laboratory functions and processes to a miniaturized chip format. Many LOC devices are used in a wide array of biomedical and other analytical applications including rapid pathogen detection, clinical diagnosis, forensic science, electrophoresis, flow cytometry, blood chemistry analysis, protein and DNA analysis. LOC devices can be fabricated from many types of material including various polymers, glass, or silicon, or combinations of these materials.

- Chemical synthesis, Drug Discovery & Development
- Biomarkers, Circulating Tumor Cells & Single Cell Analysis
- Biofabrication, Bioprinting & Disease Modelling
- Diagnostic Devices and Applications
- Food, Water, Environment Testing using Microfluidics
- Nanofluidics and Analytical Nanotechnology

Droplet-based, Digital, Centrifugal Microfluidics

Droplet-based digital microfluidics is a topic with growing relevance to biological, chemical, and health-science fields. The high precision and excellent reagent economy of such systems are unparalleled. There are, however, fundamental challenges related to actuation and sensing

in terms of system scalability, and these challenges are addressed within this chapter. In particular, a new digital microfluidics multiplexer is shown to overcome contemporary on-chip micro drop motion addressability issues and eliminate droplet interference challenges. At the same time, an integrated folded-cavity optical sensor provides highly localized and sensitive probing of internal fluid refractive indices. The complete system offers improved micro drop motion and sensing capabilities for future lab-on-a-chip technologies.

Point-of-care & Biosensors

Point-of-care testing (POCT) is essential for the rapid detection of analytes near to the patient, which facilitates better disease diagnosis, monitoring, and management. Recent years have witnessed tremendous advances in point-of-care diagnostics (POCD), which are a result of continuous developments in biosensors, microfluidic, bioanalytical platforms, assay formats, lab-on-a-chip technologies, and complementary technologies. This special issue targets the critical advances in POCD and provides guided insights and directions for future research. It enables quick medical decisions, as the diseases can be diagnosed at a very early stage, leading to improved health outcomes for patients by enabling the early start of treatment. The global POCT market is expected to grow from US\$ 23.16 in 2016 to US\$ 36.96 billion in 2021 at the compound annual growth rate of 9.8% from 2016 to 2021.

Wearables & Mobile Diagnostics

Wearable devices are currently at the heart of just about every discussion related to the Internet of Things. The requirement for self-health monitoring and preventive medicine is increasing due to the projected dramatic increase in the number of elderly people until 2020. Developed technologies are truly able to reduce the overall costs for prevention and monitoring. This is possible by constantly monitoring health indicators in various areas, and in particular, wearable devices are considered to carry this task out. These wearable devices and mobile apps now have been integrated with telemedicine and telehealth efficiently, to structure the medical Internet of Things. This paper reviews wearable health care devices both in scientific papers and commercial efforts.

Micro-chemistry & Micro-systems

Micro-total analysis systems, or the so-called "Lab-on-a-chip", have attracted increasing attention because of their ability to integrate multiple biochemical processes at pL/nL-scale in a single device using microfabrication technology. The advantages of miniaturising and integrating genetic analysis include high speed, less reagent consumption, and a reduction in size of instruments. The development of microsystems or "Lab-on-a-Chip" for both