

차세대 헬스케어를 위한 나노-바이오 통합 센싱 플랫폼 기술(Nano-bio integrated platform technologies for healthcare)

이경균[†]

나노융합기술원 나노바이오연구실

(kglee@nnfc.re.kr[†])

Lab-on-a-chip platform, especially using microfluidic technology, can provide convenient and accurate environment to monitor and diagnosis of bio-signals. In this talk, we present recent developments in microfluidics, with special emphasis on disposable plastic devices and thin layers of polymeric films. In detail, we overview of the common methods used in the fabrication of polymer microfluidic systems and incorporation with other electronic and machinery components. Also described are the different methods by which on-chip operations—such as the pumping and valving of fluid flow, the mixing of different reagents, and the separation and detection of different biochemical species—have been implemented in a microfluidic format. Furthermore, few exemplary synthesis of nanomaterials using microfluidic technologies and use of their application in electronics as well. Finally, a few select biotechnological applications of microfluidics are presented to illustrate both the utility of this technology and its potential for development in the near future.