한림대학교

제 77회
ORGAN ON A CHIP
기술교류회

2022.03.10 목 오후 4시 30분

한림대학교 자연과학관 7103호

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1. Education

박사: Univ. of Illinois Urbana-Champaign,
Dept. of Materials Science and Engineering (1997)

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2. Experience

2009 ~ 현재	서울대학교 기계공학부, 교수
2001 ~ 2009	Univ. of California-Irvine, 조/부교수
2000 ~ 2001	Harvard Medical School/Massachusetts General Hospital/Shriner's Hospital, Post-Doc
1997 ~ 2000	Harvard Univ, Post-Doc

제목

미세 생리학적 시스템의 개발: 소프트 리소그래피에서 사출 성형까지

Development of Microphysiological Systems: From Soft Lithography to Injection Molding

초록

This presentation will describe recent work in our laboratory where new patterning method based on open microfluidics combined with injection molded devices enable formation of array of vascularized microtissues that can be used for drug screening. A brief history on soft lithography and MPS (microphysiological systems) will be presented followed by the use of injection molding to fabricate the devices. Utilizing a microfluidic design with spontaneous capillary flow (SCF) based patterning mechanism, we present a novel in-vitro platform, Sphero-IMPACT and T-IMPACT (Injection-Molded Plastic Array 3D Culture platform). Drugs and immune cells can be delivered via perfusable vessel networks and live time-lapse imaging can be used to follow dynamic changes in the tumor microenvironment. The IMPACT platform is a versatile, high throughput platform with potential applications in organoid based drug screening with the form factor and throughput of standard microtiter plates.

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