

# Lab on a Chip

Devices and applications at the micro- and nanoscale  
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**Cover**  
See Wei Wang, Itai Cohen et al., pp. 4549–4557.  
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**Inside cover**  
See Anna Lee et al., pp. 4558–4570.  
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## EDITORIAL

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**Andreas Manz – Pioneer, Mentor, Friend**

Nicole Pamme and Petra S. Dittrich

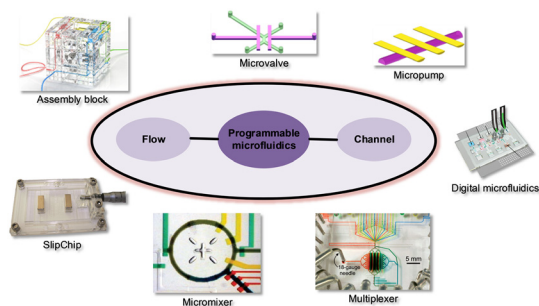


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**Microfluidic programmable strategies for channels and flow**

Yongxian Song, Yijiang Zhou, Kai Zhang, Zhaoxuan Fan, Fei Zhang and Mingji Wei\*





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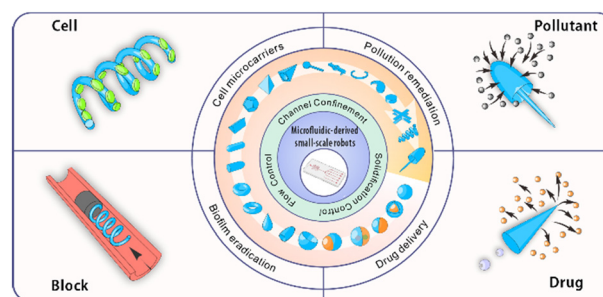


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**Design and batch fabrication of anisotropic microparticles toward small-scale robots using microfluidics: recent advances**

Chaoyu Yang, Xurui Liu, Xin Song and Li Zhang\*

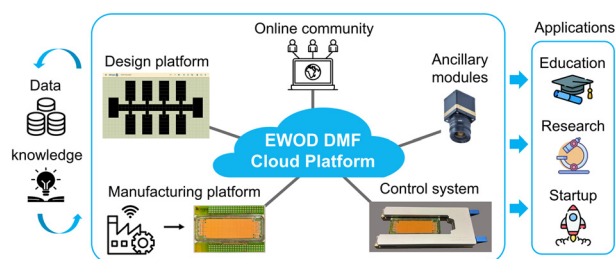


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**Democratizing digital microfluidics by a cloud-based design and manufacturing platform**

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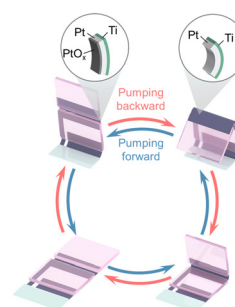


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**Electronically actuated artificial hinged cilia for efficient bidirectional pumping**

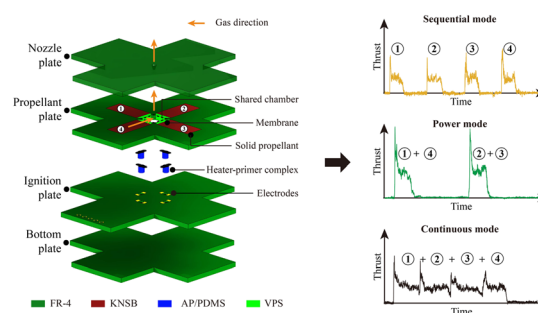
Wei Wang,\* Ivan Tanasijevic, Jinsong Zhang, Eric Lauga and Itai Cohen\*



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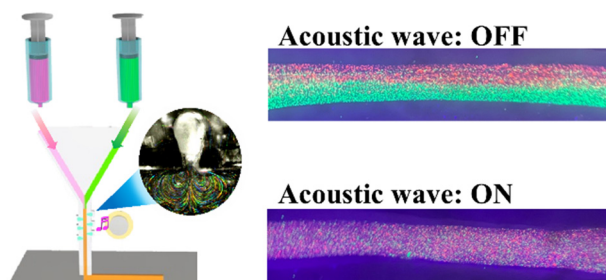
**Lab-on-PCB solid propellant microthruster with multi-mode thrust capabilities**

Jeongrak Lee, Seonghyeon Kim, Hanseong Jo and Anna Lee\*



## PAPERS

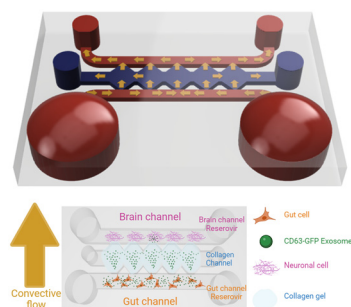
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### Micromixer driven by bubble-induced acoustic microstreaming for multi-ink 3D bioprinting

Mitsuyuki Hidaka, Masaru Kojima and Shinji Sakai\*

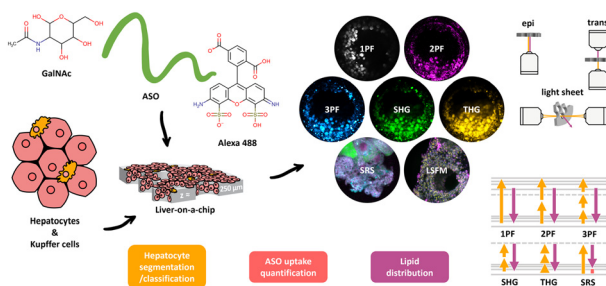
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### Development of *in vitro* model of exosome transport in microfluidic gut-brain axis-on-a-chip

Gwang Myeong Seo, Hongki Lee, Yeon Jae Kang, Donghyun Kim\* and Jong Hwan Sung\*

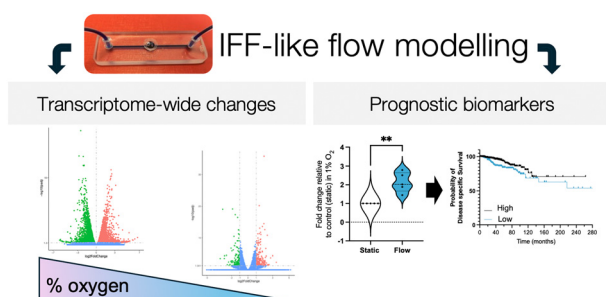
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### Multimodal imaging of a liver-on-a-chip model using labelled and label-free optical microscopy techniques

Jan Majer, Aneesh Alex, Jindou Shi, Eric J. Chaney, Prabuddha Mukherjee, Darold R. Spillman Jr, Marina Marjanovic, Carla F. Newman, Reid M. Groseclose, Peter D. Watson,\* Stephen A. Boppart\* and Steve R. Hood\*

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### Investigating the impact of the interstitial fluid flow and hypoxia interface on cancer transcriptomes using a spheroid-on-chip perfusion system

Emily Pyne, Mark Reardon, Martin Christensen, Pablo Rodriguez Mateos, Scott Taylor, Alexander Iles, Ananya Choudhury, Nicole Pamme and Isabel M. Pires\*

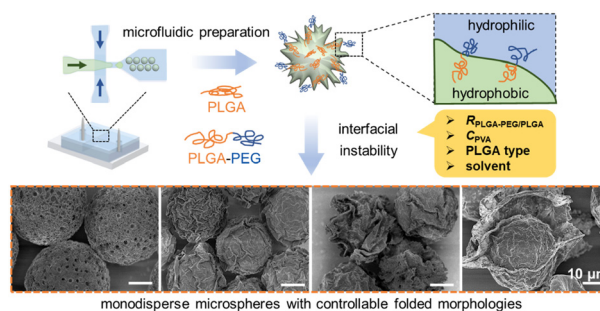




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### Microfluidic preparation of monodisperse PLGA-PEG/PLGA microspheres with controllable morphology for drug release

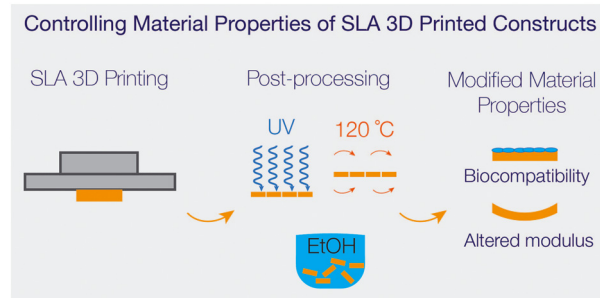
Wenwen Chen, Hao Li, Xinyue Zhang, Yutao Sang\* and Zhihong Nie\*



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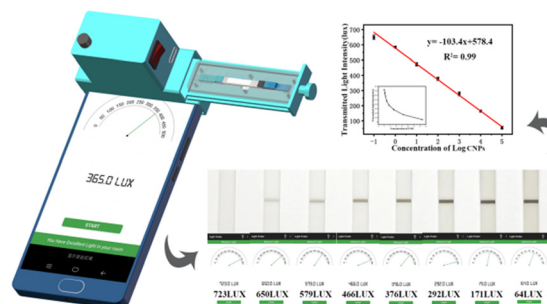
Matt D. Nelson,\* Patrick A. Tresco, Christian C. Yost and Bruce K. Gale



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### A smartphone-based immunochromatographic strip platform for on-site quantitative detection of antigenic targets

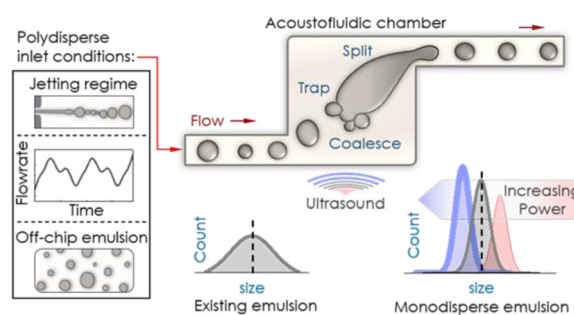
Enhui Zhang, Qing Zeng, Yanwen Xu, Jinhui Lu, Chengcheng Li, Ke Xiao, Xiaozhou Li, Jinfeng Li, Tingting Li,\* Chengyao Li\* and Ling Zhang\*

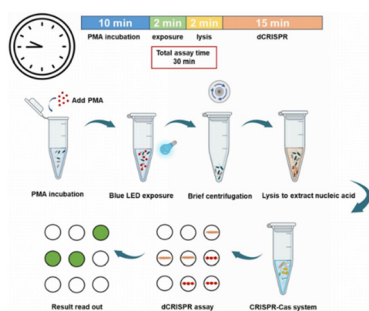


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### Ultrasound reforms droplets

Lokesh Malik, Subhas Nandy, Niladri Sekhar Satpathi, Debasish Ghosh, Thomas Laurell and Ashis Kumar Sen\*





## Fast and sensitive detection of viable *Escherichia coli* O157:H7 using a microwell-confined and propidium monoazide-assisted digital CRISPR microfluidic platform

Weihong Yin, Kai Hu, Bingwen Yu, Tao Zhang,\*  
Haohua Mei, Bowen Zhang, Zheyu Zou, Liping Xia,  
Yehong Gui, Juxing Yin, Wei Jin and Ying Mu\*

