

# Lab on a Chip

Devices and applications at the micro- and nanoscale  
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## IN THIS ISSUE

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**Cover**  
See Chao Li, Warren E. Rose, David J. Beebe *et al.*, pp. 2005–2015.  
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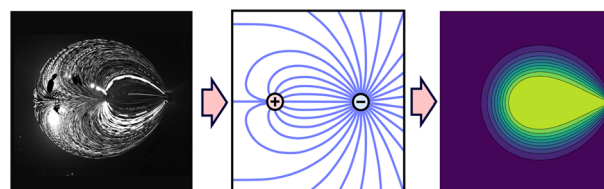
**Inside cover**  
See Pablo Morales Navarrete *et al.*, pp. 2016–2028.  
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## TUTORIAL REVIEW

1967

### The 2D microfluidics cookbook – modeling convection and diffusion in plane flow devices

Etienne Boulais\* and Thomas Gervais\*

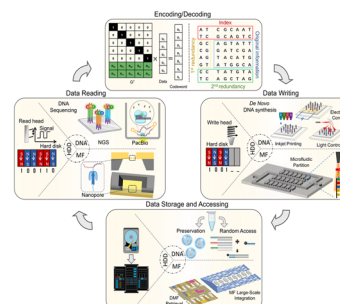


## CRITICAL REVIEW

1981

### The emerging landscape of microfluidic applications in DNA data storage

Yuan Luo,\* Zhen Cao,\* Yifan Liu,\* Rong Zhang, Shijia Yang, Ning Wang, Qingyuan Shi, Jie Li, Shurong Dong, Chunhai Fan and Jianlong Zhao



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# Lab on a Chip

Devices and applications at the micro- and nanoscale

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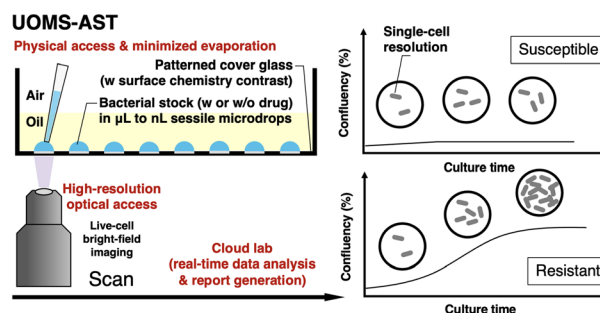


## COMMUNICATION

2005

**Under-oil open microfluidic systems for rapid phenotypic antimicrobial susceptibility testing**

Chao Li,\* Sue McCrone, Jay W. Warrick, David R. Andes, Zachary Hite, Cecilia F. Volk, Warren E. Rose\* and David J. Beebe\*

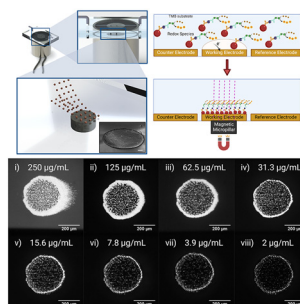


## PAPERS

2016

**High-gradient magnetophoretic bead trapping for enhanced electrochemical sensing and particle manipulation**

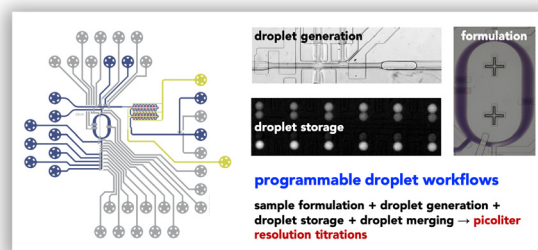
Pablo Morales Navarrete,\* Kai Chun Eddie Tjon, Zahrasadat Hosseini and Jie Yuan



2029

**Towards an active droplet-based microfluidic platform for programmable fluid handling**

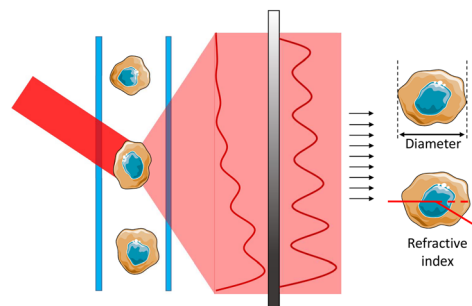
Xiaobao Cao, Tomas Buryska, Tianjin Yang, Jing Wang, Peter Fischer, Aaron Streets, Stavros Stavrakis\* and Andrew deMello\*



2039

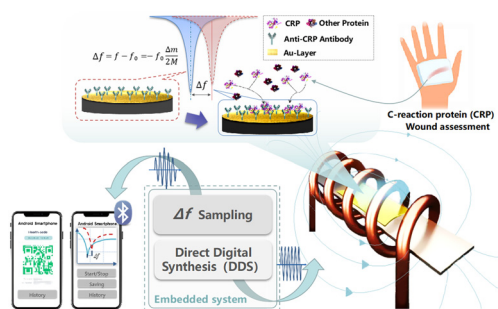
**A low-cost, label-free microfluidic scanning flow cytometer for high-accuracy quantification of size and refractive index of particles**

Riccardo Reale,\* Giovanna Peruzzi, Maryamsadat Ghoreishi, Helena Stabile, Giancarlo Ruocco and Marco Leonetti



## PAPERS

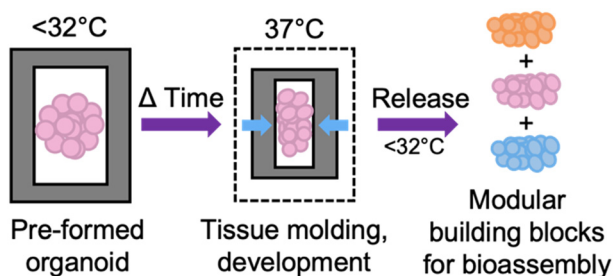
2048



### A cost-effective smartphone-based device for rapid C-reactive protein (CRP) detection using magnetoelastic immunosensor

Zhongyun Yuan, Mengshu Han, Donghao Li, Runfang Hao, Xing Guo, Shengbo Sang,\* Hongpeng Zhang, Xingyi Ma, Hu Jin, Zhijin Xing and Chun Zhao\*

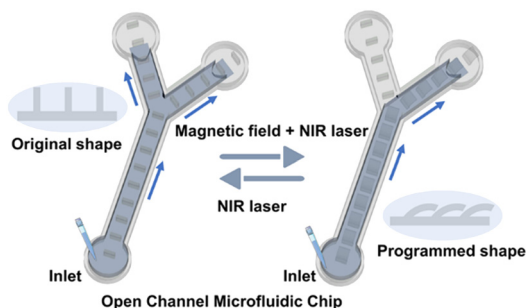
2057



### Compressive molding of engineered tissues via thermoresponsive hydrogel devices

Camille Cassel de Camps, Stephanie Mok, Emily Ashby, Chen Li, Paula Lépine, Thomas M. Durcan and Christopher Moraes\*

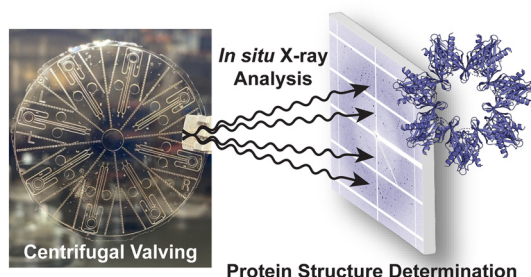
2068



### Open-channel microfluidic chip based on shape memory polymer for controllable liquid transport

Wen-Qi Ye, Xiao-Peng Liu, Ruo-Fei Ma, Chun-Guang Yang and Zhang-Run Xu\*

2075



### Polymer-based microfluidic device for on-chip counter-diffusive crystallization and *in situ* X-ray crystallography at room temperature

Sarthak Saha, Can Özden, Alfred Samkutty, Silvia Russi, Aina Cohen, Margaret M. Stratton and Sarah L. Perry\*

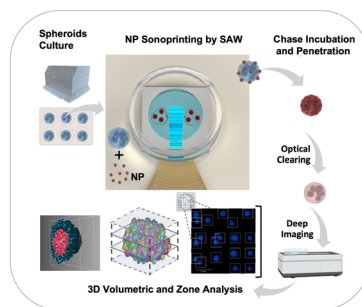


## PAPERS

2091

## Sonoprinting nanoparticles on cellular spheroids *via* surface acoustic waves for enhanced nanotherapeutics delivery

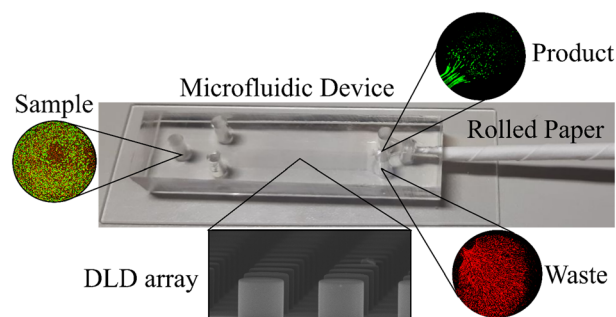
Reza Rasouli, Radu Alexandru Paun and Maryam Tabrizian\*



2106

## Pumpless deterministic lateral displacement separation using a paper capillary wick

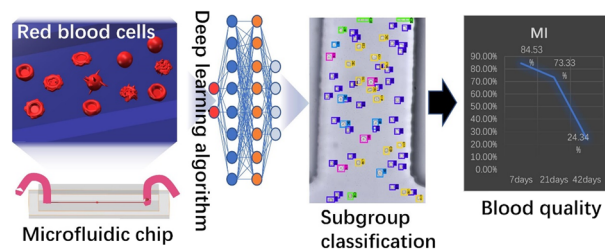
Behrouz Aghajanloo, Fatemeh Ejeian, Francesca Frascella, Simone L. Marasso, Matteo Cocuzza, Alireza Fadaei Tehrani, Mohammad Hossein Nasr Esfahani and David W. Inglis\*



2113

## Blood quality evaluation *via* on-chip classification of cell morphology using a deep learning algorithm

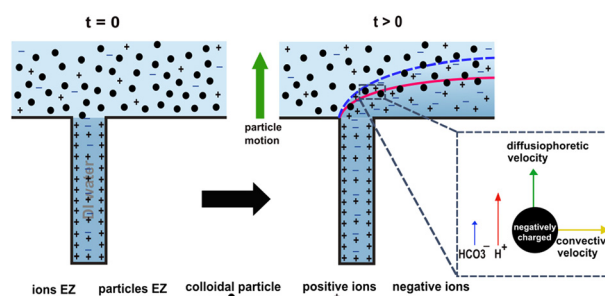
Yuping Yang, Hong He, Junju Wang, Li Chen, Yi Xu, Chuang Ge\* and Shunbo Li\*



2122

## Self-generated exclusion zone in a dead-end pore microfluidic channel

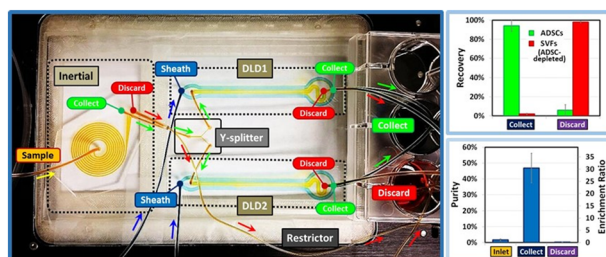
Matina Nooryani, Anne M. Benneker and Giovanniantonio Natale\*





## PAPERS

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## Label-free enrichment of human adipose-derived stem cells using a continuous microfluidic sorting cascade

Lap Man Lee,\* George J. Klarmann, Dustin W. Haithcock, Yi Wang, Ketan H. Bhatt, Balabhaskar Prabhakarpandian, Kapil Pant, Luis M. Alvarez and Eva Lai

## CORRECTION

2141

## Correction: Bubble-enhanced ultrasonic microfluidic chip for rapid DNA fragmentation

Lin Sun, Thomas Lehnert, Songjing Li and Martin A. M. Gijs\*

