

Lab on a Chip

Devices and applications at the micro- and nanoscale
rsc.li/loc

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1473-0197 CODEN LCAHAM 26(1) 1-238 (2026)



Cover
See Aram J. Chung *et al.*,
pp. 10–17.
Image reproduced by
permission of Aram Chung
from *Lab Chip*, 2026, **26**, 10.



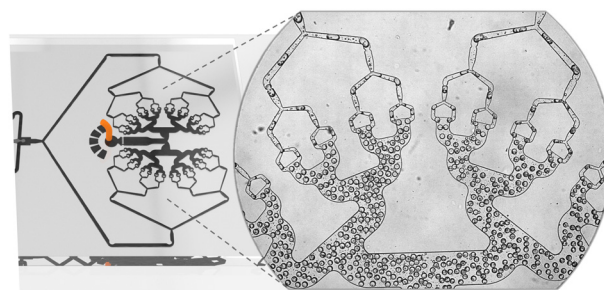
Inside cover
See Morteza Ghorbani and
Ali Kosar Research Groups,
pp. 24–39.
Image reproduced by permission
of Morteza Ghorbani and
Ali Koşar from *Lab Chip*,
2026, **26**, 24.

COMMUNICATIONS

10

Fractal-shaped droplet microfluidics for highly scalable cell mechanoporation

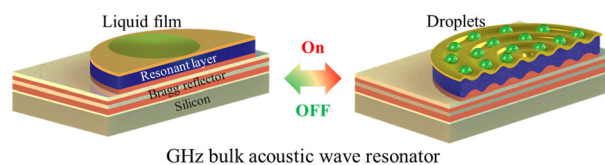
Myungsuk Sung, Dalei Jing, Byeongju Joo, Sungbin Im, You-Jeong Kim, Yi Sui and Aram J. Chung*



18

Attoliter-level droplet-ordered arrays based on acoustic nano-scissors

Wei Wei, Zhaoxun Wang, Yiming Liu, Xinyuan He, Bingnan Wang, Yaping Wang, Menglun Zhang* and Xuexin Duan*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



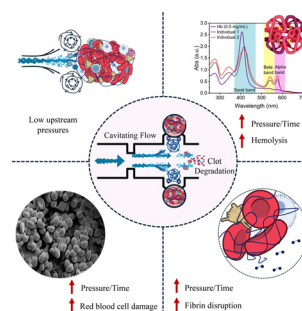
**SAVE
10%**



24

Thrombolytic potential of the “hydrodynamic cavitation on a chip” concept: insights into clot degradation

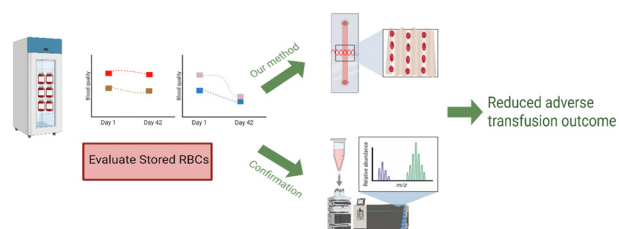
Abuzer Alp Yetisgin, Beyzanur Ozogul, Unal Akar, Rabia Mercimek, Seyedali Seyedmirzaei Sarraf, Tugrul Elverdi, Ehsan Amani, Dmitry Grishenkov, Ali Koşar* and Morteza Ghorbani*



40

Surface acoustic wave hemolysis assay for evaluating stored red blood cells

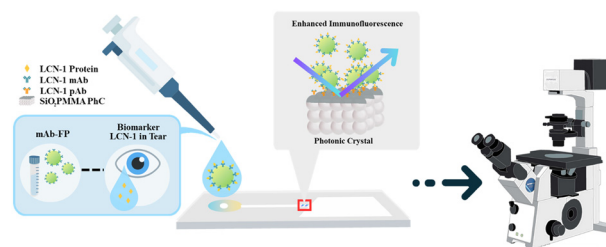
Meiou Song, Colin C. Anderson, Nakul Sridhar, Julie A. Reisz, Leyla Akh, Yu Gao, Angelo D'Alessandro* and Xiaoyun Ding*



54

Realization of rapid diabetic retinopathy screening with lipocalin 1 in tear using enhanced immunofluorescence photonic crystal microchip

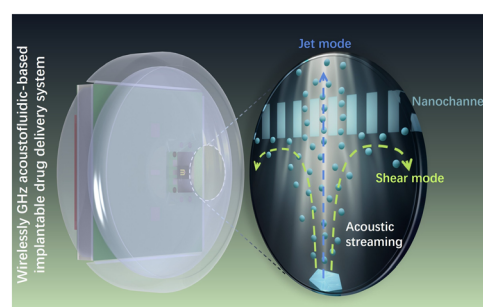
Kullaphat Nitayachat, Dhruvajyoti Das, Pei-Yi Chen, Sheng-Min Hsu, Jhih-Cheng Wang* and Han-Sheng Chuang*



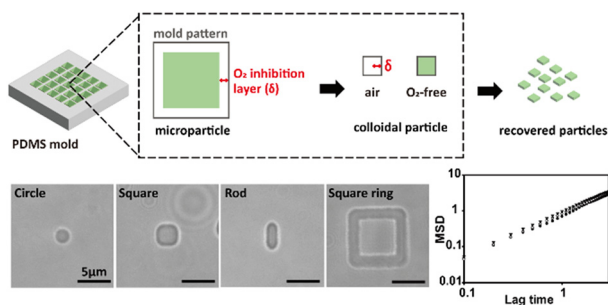
68

High frequency acoustofluidic based controllable drug delivery system

Rui You, Shuting Pan, Yuan Ning, Hongxiang Zhang, Tiechuan Li, Bo Long,* Dapeng Ye* and Xuexin Duan*



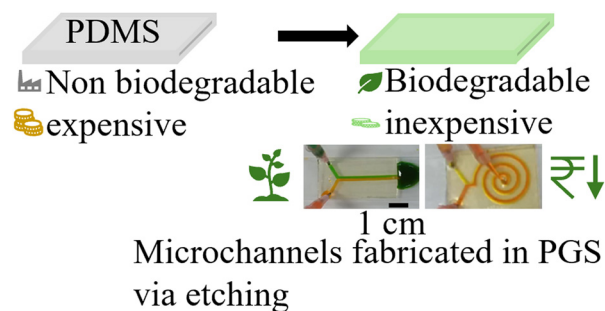
78



Oxygen-free discontinuous dewetting in a degassed mold for anisotropic colloidal hydrogel microparticle synthesis

Jiwoo Kim, Jun Hee Choi, Jeongmin Kim, Jihyun Kim, Yoon Ho Roh* and Ki Wan Bong*

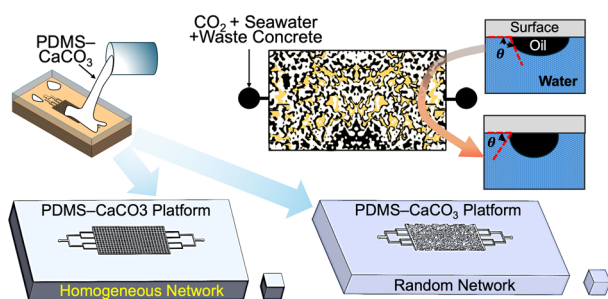
89



Use of poly(glycerol sebacate) as an alternative to poly(dimethylsiloxane) as a platform for making micro-fluidic channels

Yasmeena Ashraf and Animangsu Ghatak*

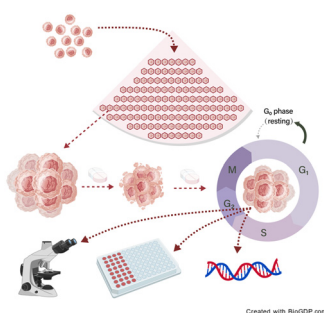
106



Carbonate reservoir surface-mimicking platform for CO₂-seawater-concrete flooding

Abhishek Ratanpara, Daniel Guerrero, Diana Cho, Abhishek, Adib Mahmoodi Nasrabadi and Myeongsu Kim*

118



Repeated exposure of anticancer agents to tumorspheres in open-surface microwell arrays for modeling chemotherapy-induced dormancy in colorectal cancer

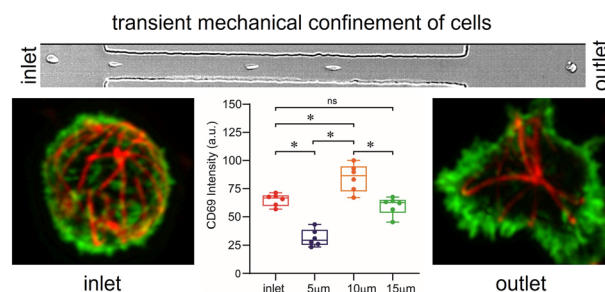
Hui Kang, Xiaogang Wang, Weijie Ye, Yanzhang Luo, Jueming Chen, Ziqing Ma, Jiayu Li, Lihui Wang,* Dongguo Lin* and Dayu Liu*



128

Mechanobiological regulation of T cells *via* transient viscoelastic microfluidic confinement

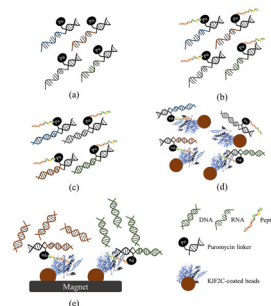
Mohammad Asghari, Morteza Aramesh, Prerit Mathur, Yingchao Meng, Margherita Bernero, Viola Vogel, Stavros Stavrakis* and Andrew J. deMello*



143

An integrated microfluidic system with shear force control for an automatically modified mRNA display technique for screening high-specificity peptide probes

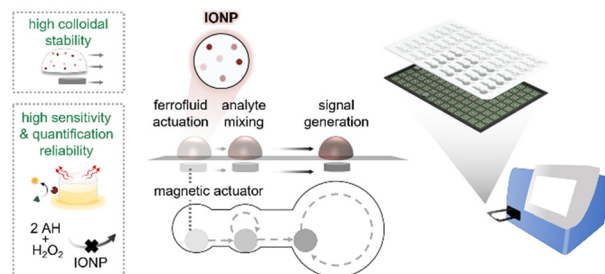
Hao-Yen Wang, Shih-Yu Shen, Lily Hui-Ching Wang* and Gwo-Bin Lee*



154

A physicochemically compatible ferrofluid droplet robotic system for automated bioanalytical assays

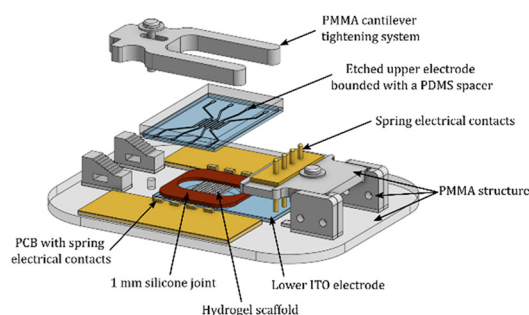
Christina C. K. Au Yeung, Ruotong Zhang, Chengzhi Zhang, Xiaoxue Fan, Yang Cao, Chi Song, Haisong Lin* and Ho Cheung Shum*



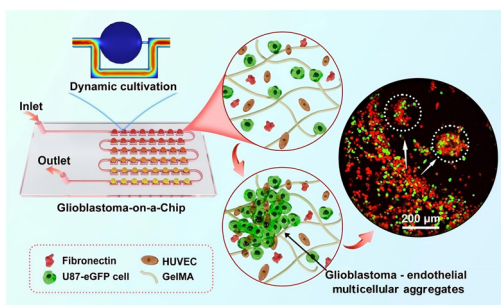
164

Electroporation of spheroids using an electric field gradient: a tool to study intensity-dependent permeabilization

Théo Le Berre*, Julien Marchalot, Guilhem Rival, Laure Franqueville, Rabia Önbaş, Charlotte Riviere, Gabriel Marcellier, Frédéric Prat and Marie Frénéa-Robin



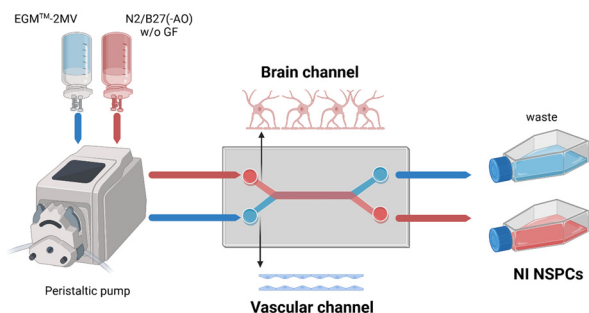
178



Engineering spatially defined extracellular matrix gradients to govern self-organized multicellular aggregates in a glioblastoma-on-a-chip

Jianing Li, Xinghua Gao,* Xiaoling Yang, Hongcai Wang, Xindi Sun, Chang Xue and Jingyun Ma*

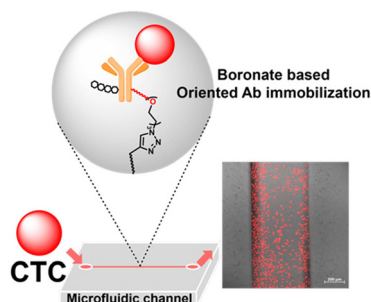
193



Modeling the effects of radiation on neurogenesis using an *in vitro* neurogenic niche approach

Laura Nicoletti Zamproni, Julia Rogal, Polyxeni Nikolakopoulou, Klas Blomgren, Marimélia Aparecida Porcionatto and Anna Herland*

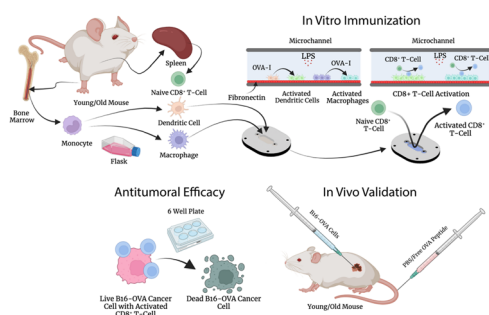
211



Boronate-mediated covalent and oriented immobilization of antibodies on the PDMS surface toward improved capture of circulating tumor cells

Ke-Hong Lyu, Jin-Wei Chen, Dun-Yuan Jin, Yu-Ju Huang, Hsiung-Lin Tu, Avijit K. Adak* and Chun-Cheng Lin*

220



Lymph node paracortex-inspired on-a-chip recapitulating immunosenescence: a cancer vaccine immunogenicity and antitumoral efficacy screening platform

Surjendu Maity, Alireza Hassani Najafabadi, Satoru Kawakita, Danial Khorsandi, Can Yilgor, Christopher Jewell, Neda Mohaghegh, Mehmet Remzi Dokmeci, Ali Khademhosseini and Vadim Jucaud*



CORRECTION

236

Correction: Sequential trench well based microfluidic platform to isolate bacteria from whole blood with large volume processing

Cheonggyu Lee, Gi Yoon Lee, Hyelyn Joo, Hamin Kim, Junwon Kang, Tae Hyun Kim, Jonghyun Ha,*
Sunghoon Kwon* and Jungil Choi*

