

Lab on a Chip

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

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IN THIS ISSUE

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Cover
See Hirotsada Hiramata *et al.*, pp. 1918–1925.
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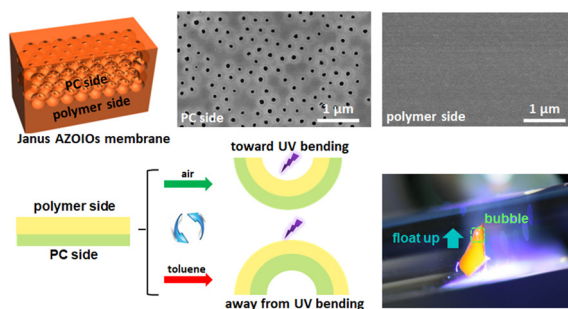
Inside cover
See H. Cumhuri Tekin *et al.*, pp. 1926–1937.
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COMMUNICATIONS

1900

On-demand photo-controlled motion enabled by solvent-driven mesogen alignment switch

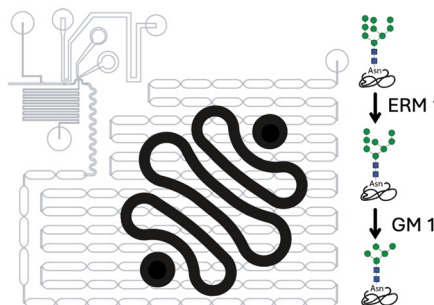
Pingping Wu, Rongwei Kou, Shuai Huang, Hongyu Li, Yuanyuan Shang,* Yuzhen Zhao* and Junchao Liu*



1907

Microfluidic mimicry of the Golgi-linked N-glycosylation machinery

Florin N. Isenrich, Marie-Estelle Losfeld, Markus Aebi* and Andrew J. deMello*



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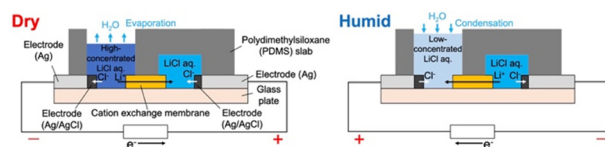


PAPERS

1918

Microfluidic-based redesign of a humidity-driven energy harvester

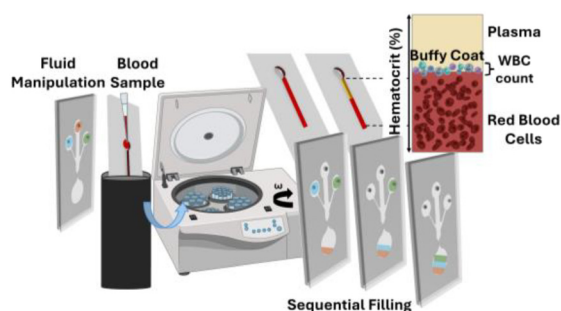
Hirota HIRAMA* and Yusuke KOMAZAKI



1926

Dynamic fluidic manipulation in microfluidic chips with dead-end channels through spinning: the Spinochip technology for hematocrit measurement, white blood cell counting and plasma separation

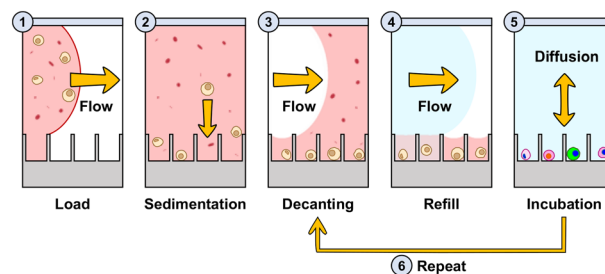
Cemre OKSUZ, Can BİCME and H. CUMHUR TEKİN*



1938

Highly efficient isolation and multistep analysis of tumor cells from whole blood

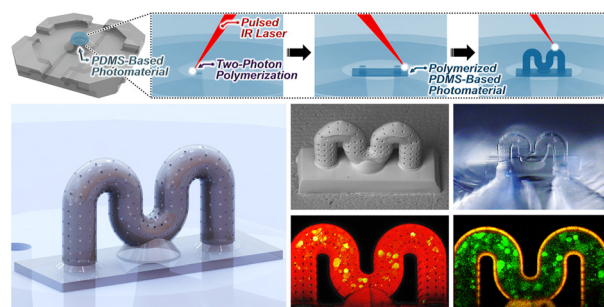
Michael KNAPP*, Samir KADIĆ, Astrid LUX, Nils PAUST, Roland ZENGERLE and Jochen HOFFMANN



1947

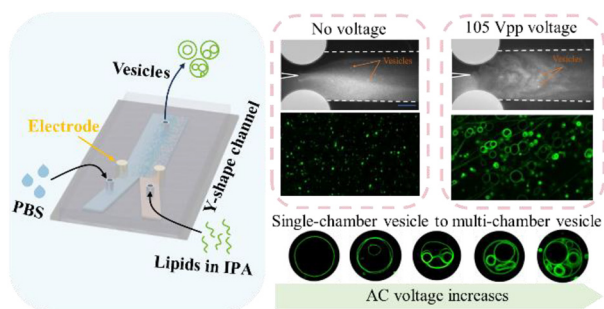
3D nanoprinting of PDMS microvessels with tailored tortuosity and microporosity via direct laser writing

Xin XU, Yunxiu QIU, Chen-Yu CHEN, Molly CARTON, Paige M. R. CAMPBELL, A. MUHAMMAD CHOWDHURY, Bidhan C. BANDYOPADHYAY, William E. BENTLEY, Bryan RONAIN SMITH and Ryan D. SOCHOL*



PAPERS

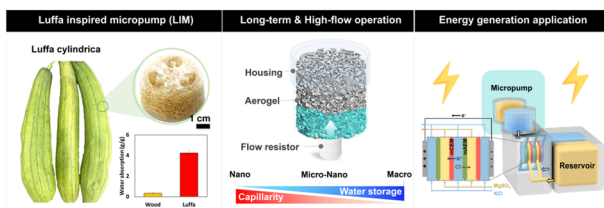
1959



Synthesis of phospholipid vesicles using an electrokinetic turbulent microreactor

Liangying Han, Yueqiang Zhu, Jin'an Pang, Xuejing Wang,* Shenghua Ma, Xiaojun Han,* Kaige Wang and Wei Zhao*

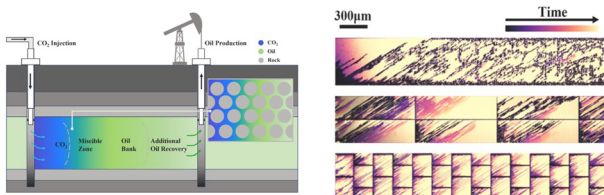
1968



Luffa cylindrica-inspired powerless micropump: long-term, high-flow operation and energy-generation application

Jungjae Woo, Jeongmin Seo, Hyewon Cho, Soeun Park, Changsoo Han and Hyejeong Kim*

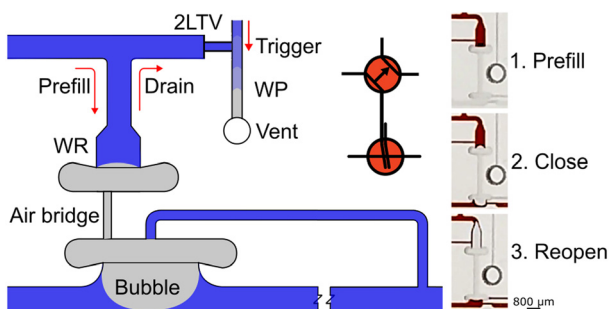
1981



Visualization investigation of fluid transport in multiscale porous media for CO₂-EOR based on microfluidic technology

Jianxiang Wang, Jiafeng Sun, Jiawei Shi and Bo Bao*

1993



The reversible capillary field effect transistor: a capillary element for autonomous flow switching

Daniel Mak,* Claude Meffan, Julian Menges, Rhys Marchant-Ludlow, Azadeh Hashemi, Ciaran P. Moore, Renwick C. J. Dobson* and Volker Nock

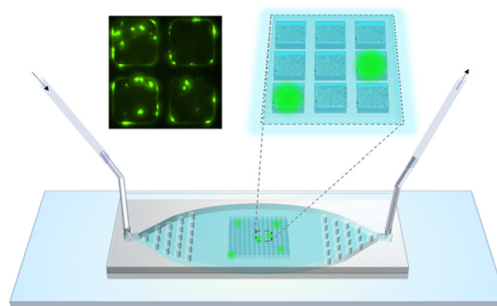


PAPERS

2004

Microfluidic digital focus assays for the quantification of infectious influenza virus

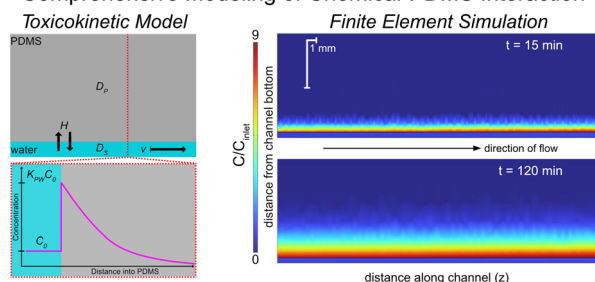
Siddharth Raghu Srimathi, Maxinne A. Ignacio, Maria Rife, Sheldon Tai, Donald K. Milton, Margaret A. Scull* and Don L. DeVoe*



2017

Toxicokinetics for organ-on-chip devices

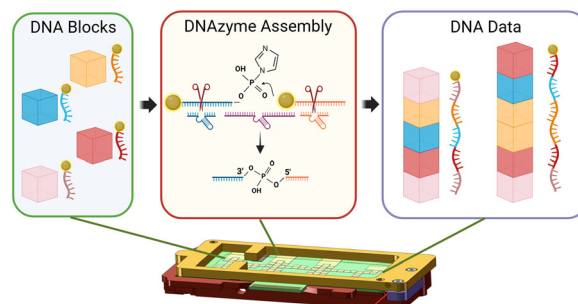
Nathaniel G. Hermann, Richard A. Ficek, Dmitry A. Markov, Lisa J. McCawley and M. Shane Hutson*

Comprehensive Modeling of Chemical-PDMS Interaction

2030

Low-cost and automated magnetic bead-based DNA data writing via digital microfluidics

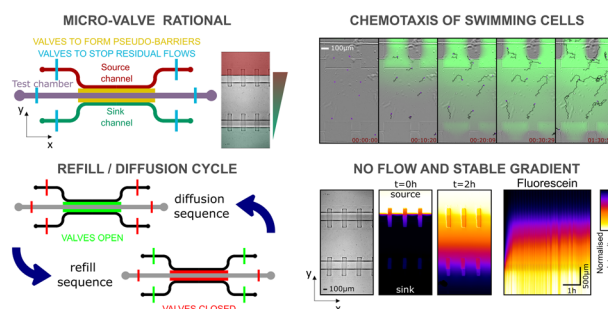
Mengdi Bao,* Brett Herdendorf, Gemma Mendonsa, Sriram Chari and Anil Reddy



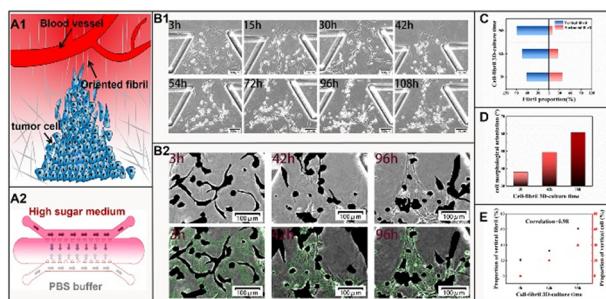
2043

Microvalve-based gradient generators to control flow-free, time zero and long-term conditions

Pierre Bohec, Florian Dupuy, Victoria Tishkova, Valentine Seveau de Noray, Marie-Pierre Valignat and Olivier Theodoly*



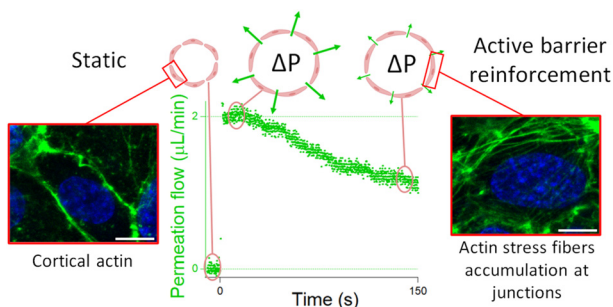
2053



Mechanical forces and enzymatic digestion act together to induce the remodeling of collagen fibrils in tumor microenvironment

Jiling Shi, Aihua Jing, Qinan Yin, Xuwei Zheng, Zhigang Hu, Xibin Jiao, Yaomin Fan, Xiangyang Zu, Jinghua Li, Yanping Liu, Jiayu Zhai, Xiucheng Li and Kena Song*

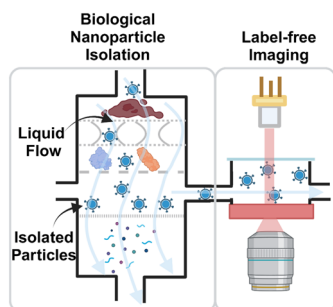
2061



Intraluminal pressure triggers a rapid and persistent reinforcement of endothelial barriers

Aurélien Bancaud,* Tadaaki Nakajima, Jun-Ichi Suehiro, Baptiste Alric, Florent Morfousse, Jean Cacheux and Yukiko T. Matsunaga*

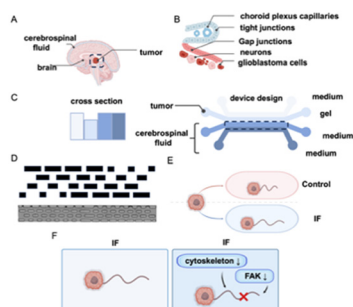
2073



A biosensor-integrated filtration device for nanoparticle isolation and label-free imaging

Leyang Liu, Takhmina Ayupova, Saurabh Umrao, Lucas D. Akin, Han-Keun Lee, Joseph Tibbs, Xing Wang, Utkan Demirci* and Brian T. Cunningham*

2085



Elevated interstitial flow in the cerebrospinal fluid microenvironment accelerates glioblastoma cell migration on a microfluidic chip

Wanting Hu, Hua Sun, Huibo Qi, Linkai Jiang, Kaining Zhang, Xiaomeng Jia, Yu Wang, Yu Xiang and Qionglian Liang*

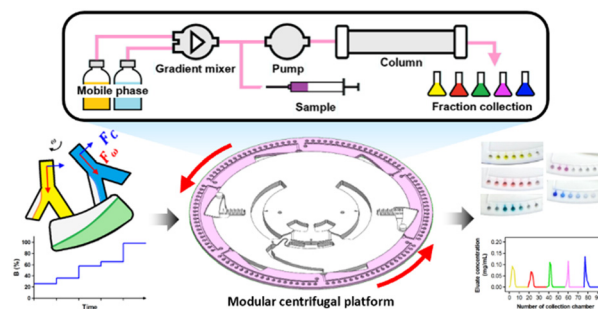


PAPERS

2098

Design and development of a modular centrifugal platform with adjustable mixing and automated position-switching for stepwise gradient elution in reversed-phase liquid chromatography

Chia-Tse Shih and Chih-Hsin Shih*



2109

Portable multi-ionic reverse electrodialysis for continuous power supply and controllable drug release

Hyewon Cho, Jungjae Woo, Haneul Jeon, Hyejeong Kim and Chang-Soo Han*

