

Lab on a Chip

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

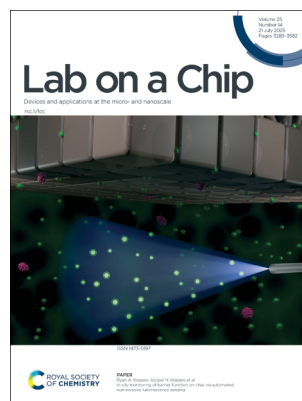
The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1473-0197 CODEN LCAHAM 25(14) 3289-3582 (2025)



Cover
See Weiqiang Chen *et al.*,
pp. 3314–3347.
Image reproduced by
permission of Weiqiang Chen
from *Lab Chip*, 2025, 25, 3314.



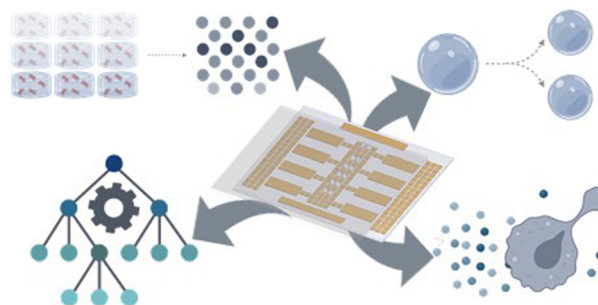
Inside cover
See Ryan A. Koppes,
Abigail N. Koppes *et al.*,
pp. 3430–3443.
Image reproduced by
permission of Bryan G. Schellberg,
Abigail N. Koppes, Ryan A. Koppes
from *Lab Chip*, 2025, 25, 3430.

TUTORIAL REVIEW

3297

Mammalian cell culture and analysis in digital microfluidic platforms

Burcu Gumuscu

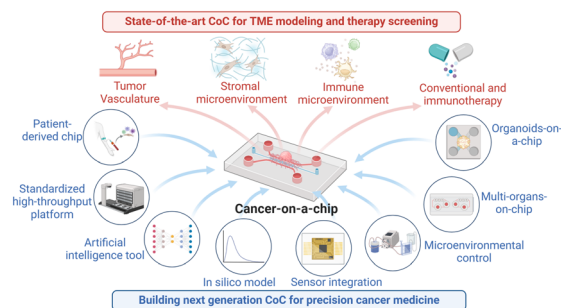


CRITICAL REVIEWS

3314

Cancer-on-a-chip for precision cancer medicine

Lunan Liu, Huishu Wang, Ruiqi Chen, Yujing Song,
William Wei, David Baek, Mahan Gillin,
Katsuo Kurabayashi and Weiqiang Chen*



GOLD
OPEN
ACCESS

EES Solar

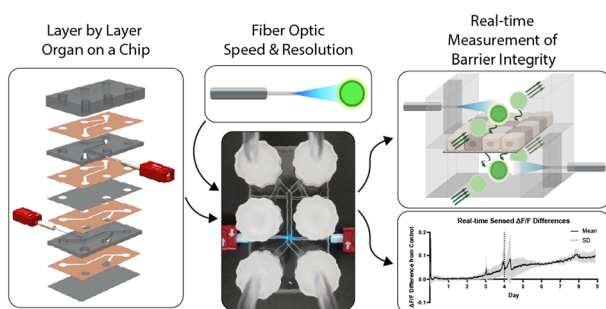
Exceptional research on solar energy and photovoltaics

Part of the EES family

Join | Publish with us
in | rsc.li/EESSolar



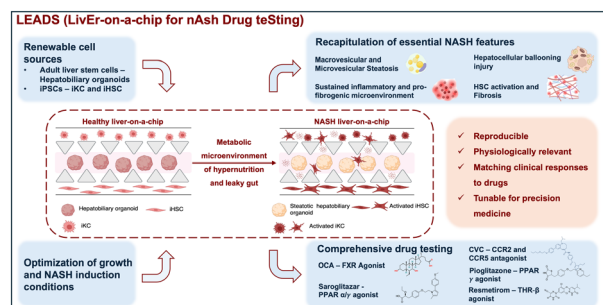
3430



In situ monitoring of barrier function on-chip via automated, non-invasive luminescence sensing

Bryan G. Schellberg, Abigail N. Koppes* and Ryan A. Koppes*

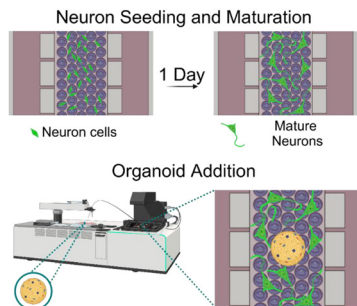
3444



LEADS – a comprehensive human liver-on-a-chip for non-alcoholic steatohepatitis (NASH) drug testing

Gowri Manohari Balachander, Inn Chuan Ng, Roopesh R. Pai, Kartik Mitra, Farah Tasnim, Yee Siang Lim, Royston Kwok, Yoohyun Song, Lai Ping Yaw, Clarissa Bernice Quah, Junzhe Zhao, Wahyunia L. Septiana, Vishnu Goutham Kota, Yao Teng, Kexiao Zheng, Yan Xu, Sei Hien Lim, Huck Hui Ng and Harry Yu*

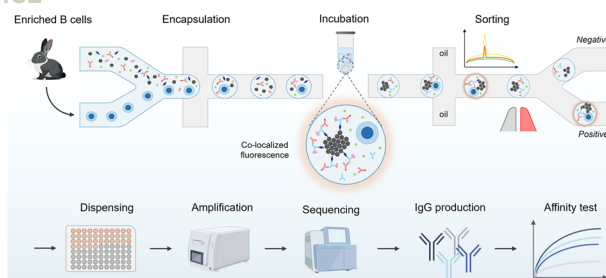
3467



Engineering neuronal networks in granular microgels to innervate bioprinted cancer organoids on-a-chip

Jacob P. Fredrikson, Daniela M. Roth, Jameson A. Cosgrove, Gulsu Sener, Lily A. Crow, Kazumi Eckenstein, Lillian Wu, Mahshid Hosseini, George Thomas, Sebnem Ece Eksi and Luiz Bertassoni*

3482



High-throughput monoclonal antibody screening from immunized rabbits via droplet microfluidics

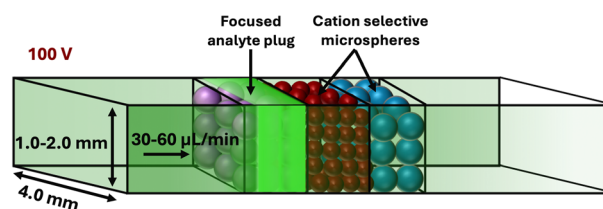
Johnson Q. Cui, Ruyuan Song, Weihong Song, Ouyang Li, Xin Yuan, Hongbo Zhou, Lu Zhang and Shuhuai Yao*



3495

Ion concentration polarization focusing at a millimeter-scale microbead junction: towards higher volumetric throughput

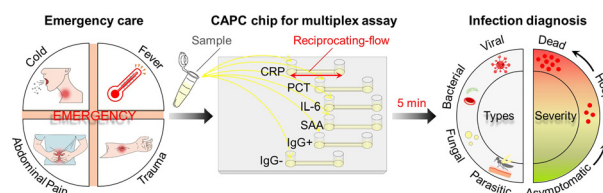
Umesha Peramune, Zisun Ahmed and Robbyn K. Anand*



3506

A multi-channel chip enabled synchronized reciprocating-flow of fluid for rapid, simultaneous, multiplex detection of inflammatory markers

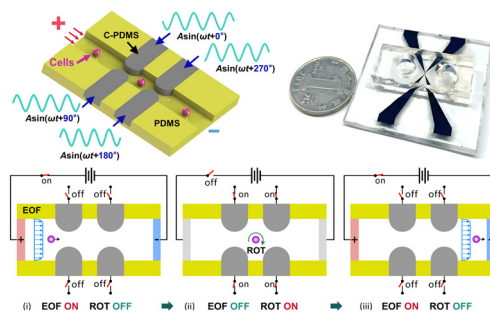
Juanhua Li, Zihan Xiao, Tianyu Wu, Yiren Liu, Wenyong Zhang, Cuiping Zhou,* Yanqiong Su, Hongrui Liang, Donglin Cao* and Jianhua Zhou*



3516

Controllable pump-free electrokinetic-driven microdevice for single-cell electrorotation

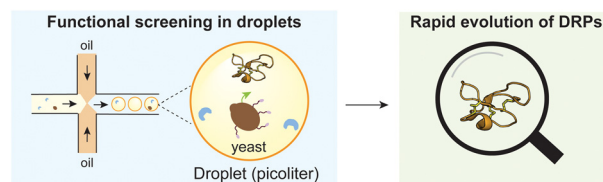
Jianming Shu, Xijiang Wang and Liang Huang*



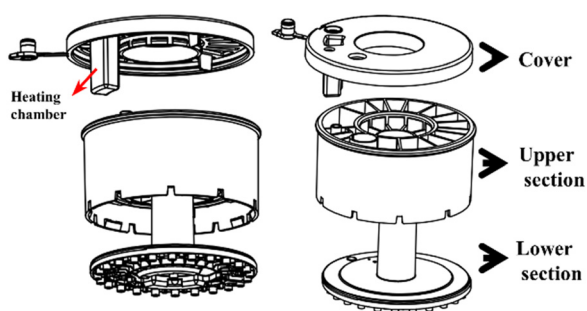
3525

High-throughput enrichment of functional disulfide-rich peptides by droplet microfluidics

Jing Xie, Kuok Yap, Simon J. de Veer, Selvakumar Edwardraja, Thomas Durek, Matt Trau, David J. Craik and Conan K. Wang*



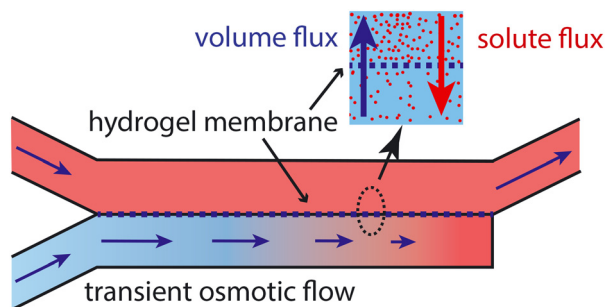
3537



Point-of-care analysis for foodborne pathogens in food samples based on a fully enclosed microfluidic chip cartridge

Dayun Tang, Peng Li, Shuo Qi, Qiong Wu, Ruili Yu, Mei Liu and Zhouping Wang*

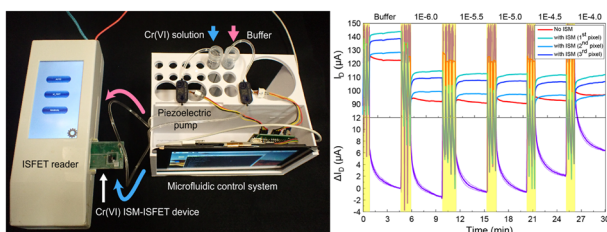
3549



Transient osmotic flows in a microfluidic channel: measurements of solute permeability and reflection coefficients of hydrogel membranes

Julien Renaudeau, Pierre Lidon and Jean-Baptiste Salmon

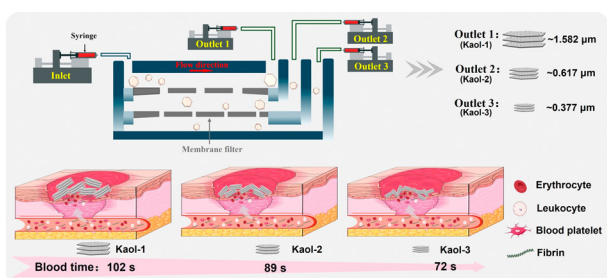
3559



Continuous and automatic hexavalent chromium sensing using an ion-selective membrane deposited ion-sensitive field-effect transistor device integrating a microfluidic control system

Tzu-Yu Liu, Huai-Yuan Hsu, Huan-Cheng Liu and Nien-Tsu Huang*

3570



Size-selective sorting of kaolinite micro/nanoflakes via microfluidic filtration for wound hemostasis

Guangyao Li, Liang Wan, Ying Chen,* Xuming Zhang,* Aidong Tang and Huaming Yang*

