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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 Weiqiang Chen *et al.*, pp. 3314–3347.
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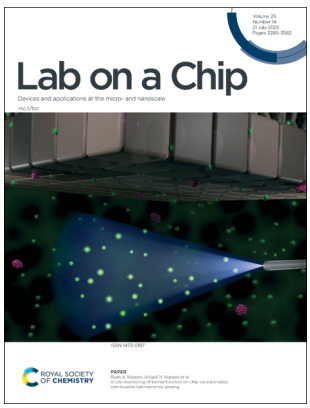

Inside cover
See Ryan A. Koppes, Abigail N. Koppes *et al.*, pp. 3430–3443.
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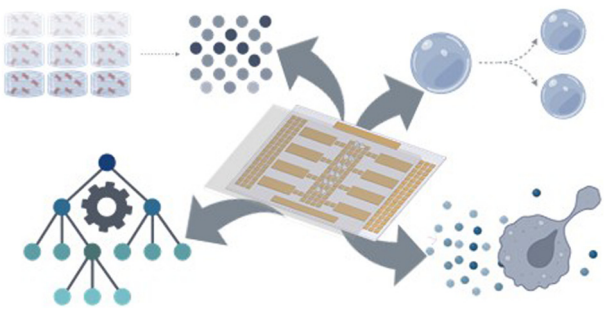
TUTORIAL REVIEW

3297

Mammalian cell culture and analysis in digital microfluidic platforms

Burcu Gumuscu

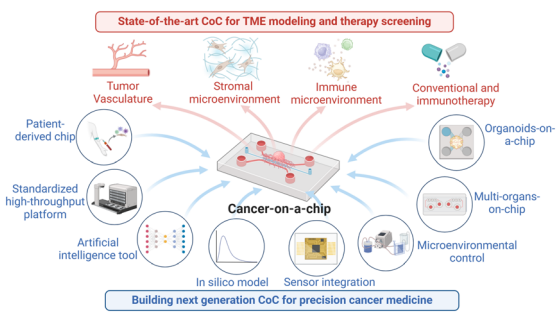


CRITICAL REVIEWS

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*



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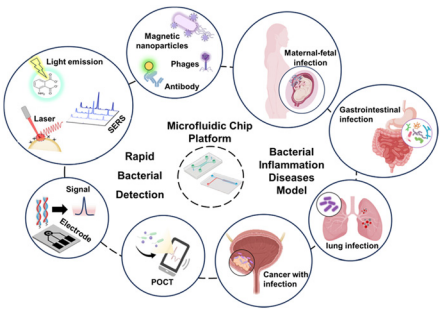
CRITICAL REVIEWS

3348

Advancements in microfluidic technology for rapid bacterial detection and inflammation-driven diseases

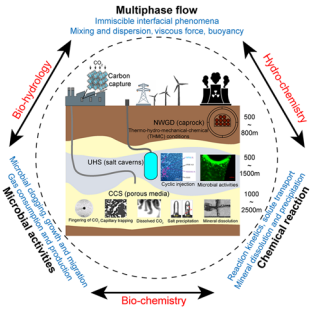
Jing Zhang, Yatian Fu, Ching Yin Fong, Haojun Hua, Wei Li and Bee Luan Khoo*



3374

Advancing sustainable energy solutions with microfluidic porous media

Wenhai Lei, Yuankai Yang, Shuo Yang, Ge Zhang, Jenna Poonoosamy, Anne Juel, Yves Méheust, Shervin Bagheri and Moran Wang*

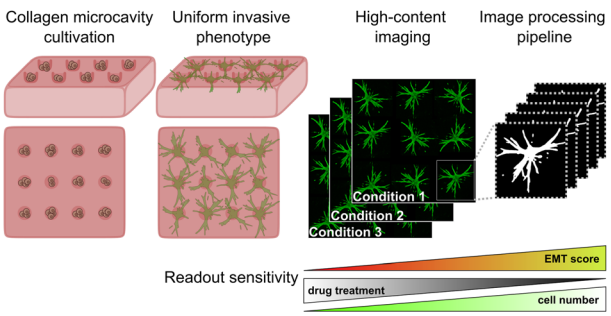


COMMUNICATIONS

3411

A 3D patternoid model for the reproducible characterization of invasive phenotypes and drug sensitivity in PDAC

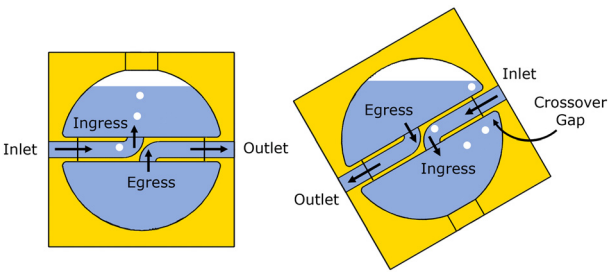
Sophie C. Kurzbach, Violetta Carvajal-Heckele, Tetsuhiko F. Teshima, Maximilian Reichert and Andreas R. Bausch



3423

Orientation-independent bubble trap with internal partition for robust operation of microfluidic systems

Bhavagyna Vegunta, Charmaine Lui, Max Kim, Joshua Tran, Maya Papez, Anand K. Ramasubramanian and Sang-Joon John Lee*



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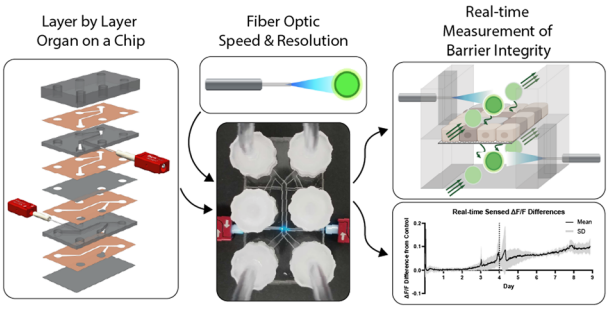
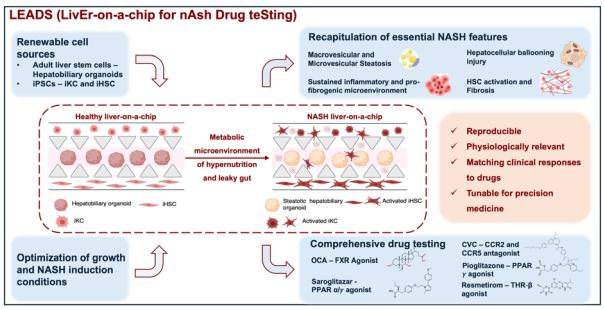
3430



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

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

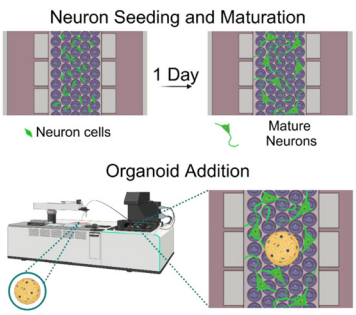
3444



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 Hanry Yu*

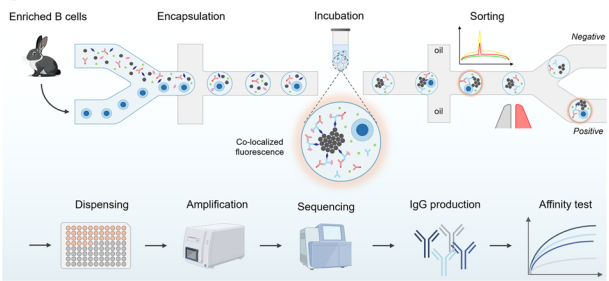
3467



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*

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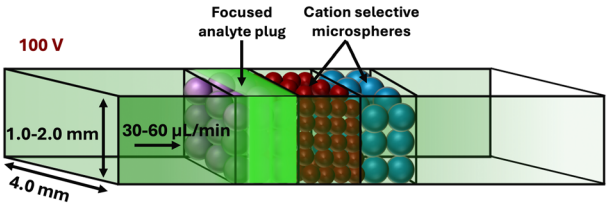
PAPERS

3495

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

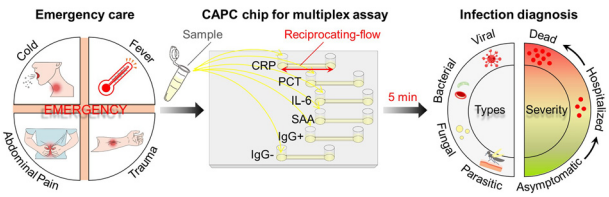
Umesha Peramune, Zisun Ahmed and Robbyn K. Anand*



3506

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

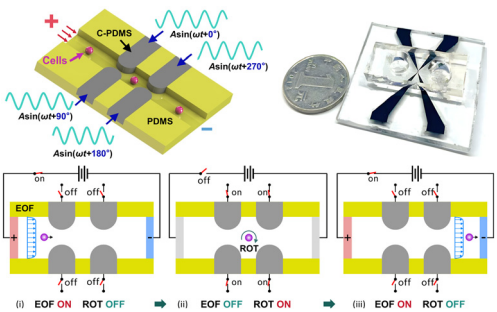
Juanhua Li, Zihan Xiao, Tianyu Wu, Yiren Liu, Wenyong Zhang, Cuiping Zhou,* Yanqiong Su, Hongrui Liang, Donglin Cao* and Jianhua Zhou*



3516

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

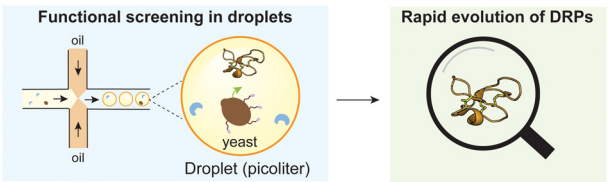
Jianming Shu, Xijiang Wang and Liang Huang*



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*



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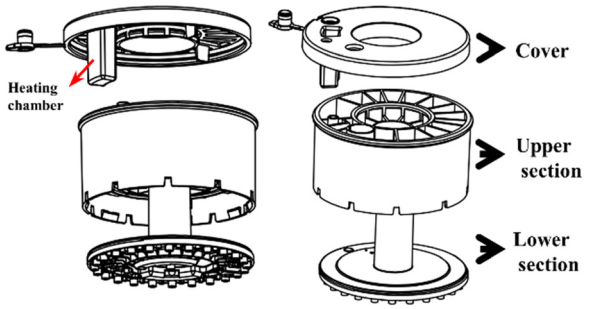
PAPERS

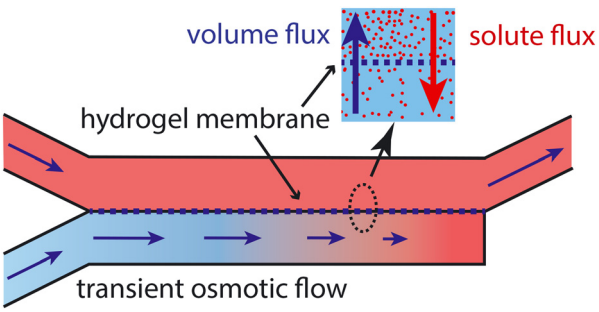
3537



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*

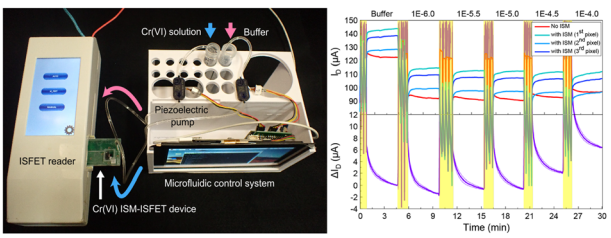
3549



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

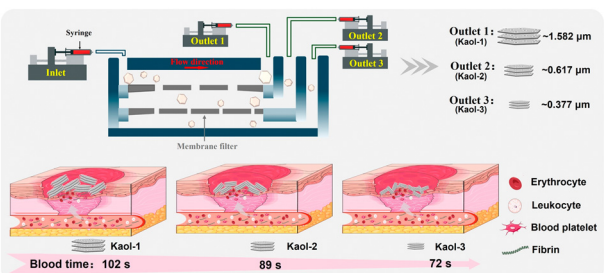
3559



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*

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