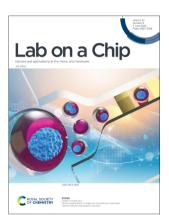
# Lab on a Chip

# 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 24(11) 2827-3028 (2024)



### Cover

See Federica Caselli et al., pp. 2883-2892. Image reproduced by permission of Adele De Ninno and Alberto Rainer from Lab Chip, 2024, 24, 2883.



### Inside cover

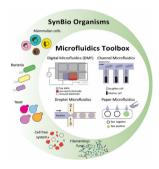
See Sebastian Bohm et al., pp. 2893-2905. Image reproduced by permission of Sebastian Bohm from Lab Chip, 2024, 24, 2893.

### **CRITICAL REVIEW**

2834

Integrating microfluidics and synthetic biology: advancements and diverse applications across organisms

Chiara Leal-Alves, Zhiyang Deng, Natalia Kermeci and Steve C. C. Shih\*



### **PERSPECTIVE**

2861

# Toward microfluidic continuous-flow and intelligent downstream processing of biopharmaceuticals

Vikas Sharma, Amirreza Mottafegh, Jeong-Un Joo, Ji-Ho Kang, Lei Wang and Dong-Pyo Kim\*





# 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



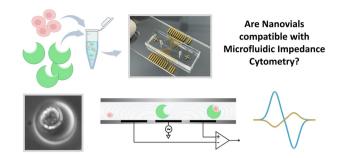
Registered charity number: 207890

### **PAPERS**

### 2883

### On the compatibility of single-cell microcarriers (nanovials) with microfluidic impedance cytometry

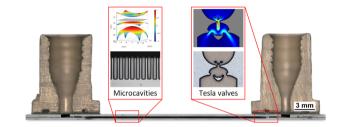
Cristian Brandi, Adele De Ninno, Filippo Ruggiero, Emanuele Limiti, Franca Abbruzzese, Marcella Trombetta, Alberto Rainer, Paolo Bisegna and Federica Caselli\*



### 2893

### Chip-integrated non-mechanical microfluidic pump driven by electrowetting on dielectrics

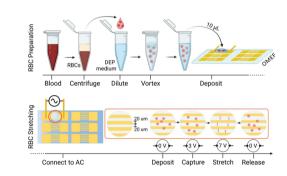
Sebastian Bohm,\* Hai Binh Phi, Lars Dittrich and Erich Runge



### 2906

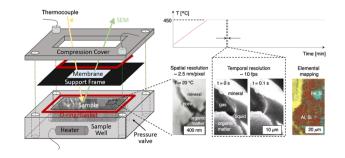
## OMEF biochip for evaluating red blood cell deformability using dielectrophoresis as a diagnostic tool for type 2 diabetes mellitus

Dima Samer Ali, Samuel O. Sofela, Muhammedin Deliorman, Pavithra Sukumar, Ma-sum Abdulhamid, Sherifa Yakubu, Ciara Rooney, Ryan Garrod, Anoop Menachery, Rabih Hijazi, Hussein Saadi and Mohammad A. Qasaimeh\*



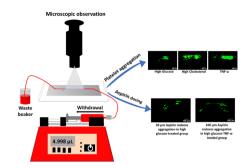
Operando scanning electron microscopy platform for in situ imaging of fluid evolution in nanoporous shale

Artur Davletshin and Wen Song\*



### **PAPERS**

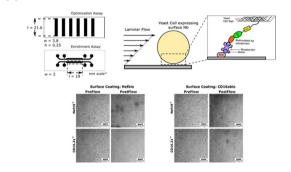
### 2927



## Evaluating thrombosis risk and patient-specific treatment strategy using an atherothrombosis-onchip model

Fahima Akther, Hedieh Fallahi, Jun Zhang, Nam-Trung Nguyen and Hang Thu Ta\*

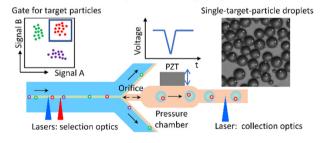
### 2944



### Antigen density and applied force control enrichment of nanobody-expressing yeast cells in microfluidics

Merlin Sanicas, Rémy Torro, Laurent Limozin\* and Patrick Chames\*

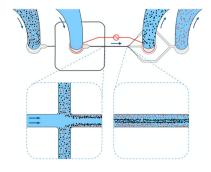
### Selective encapsulation of single target cells



### Microfluidic device for the high-throughput and selective encapsulation of single target cells

Masahiko Nakamura, Masahiro Matsumoto, Tatsumi Ito, Isao Hidaka, Hirokazu Tatsuta and Yoichi Katsumoto\*

### 2968



### Concentration-polarization electroosmosis for particle fractionation

Raúl Fernández-Mateo, Pablo García-Sánchez, Antonio Ramos and Hywel Morgan\*

### **PAPERS**

### 2975

The egg-counter: a novel microfluidic platform for characterization of Caenorhabditis elegans egg-

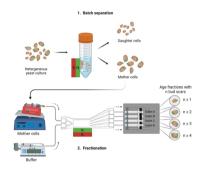
Stephen A. Banse, Cody M. Jarrett, Kristin J. Robinson, Benjamin W. Blue, Emily L. Shaw and Patrick C. Phillips\*



### 2987

Millifluidic magnetophoresis-based chip for agespecific fractionation: evaluating the impact of age on metabolomics and gene expression in yeast

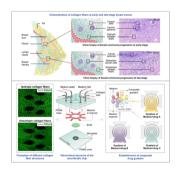
- L. Wittmann, M. Eigenfeld, K. Büchner, J. Meiler, H. Habisch, T. Madl, R. Kerpes,\* T. Becker,
- S. Berensmeier and S. P. Schwaminger\*



### 2999

Emulation and evaluation of tumor cell combined chemotherapy in isotropic/anisotropic collagen fiber microenvironments

Lianjie Zhou, Guoqiang Li,\* Jingru Yao, Jing Wang, Xiyao Yao, Zhikai Ye, Dongtian Zheng, Kena Song, Hongfei Zhang, Xianquan Zhang, Jianwei Shuai, Fangfu Ye, Ming Li, Yufeng Li, Guo Chen, Yuyan Cheng, He Liu, Peter Shaw\* and Liyu Liu\*



Automated dynamic inlet microfluidics system: 3D printer adaptation for cost-effective, low volume, on-demand multi-analyte droplet generator

Abdul Basit Zia,\* Justin Farrell and Ian G. Foulds

