

# Lab on a Chip

Devices and applications at the micro- and nanoscale  
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## IN THIS ISSUE

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### Cover

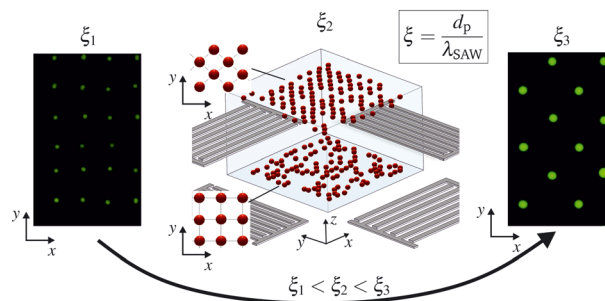
See Wenming Liu *et al.*,  
pp. 2161–2174.  
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### From rectangular to diamond shape: on the three-dimensional and size-dependent transformation of patterns formed by single particles trapped in microfluidic acoustic tweezers

Zhichao Deng, Vijay V. Kondalkar, Christian Cierpka, Hagen Schmidt\* and Jörg König\*

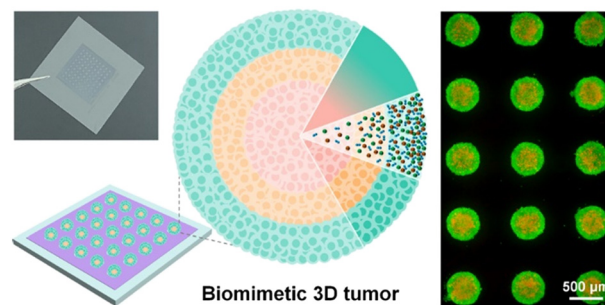


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### Facile construction of a 3D tumor model with multiple biomimetic characteristics using a micropatterned chip for large-scale chemotherapy investigation

Meilin Sun, Jinwei Zhang, Wenzhu Fu, Tingting Xuanyuan and Wenming Liu\*



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# Lab on a Chip

Devices and applications at the micro- and nanoscale

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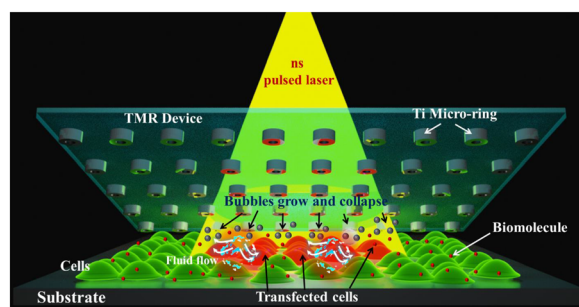


## PAPERS

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### Metallic micro-ring device for highly efficient large cargo delivery in mammalian cells using infrared light pulses

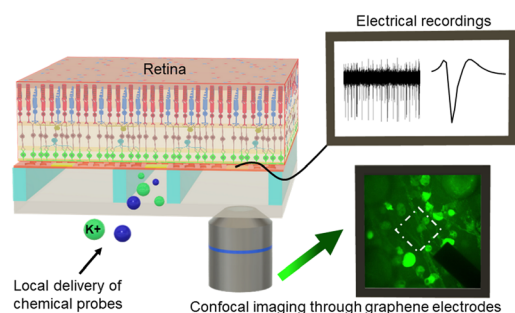
Ashwini Shinde, Pallavi Shinde, Srabani Kar, Kavitha Illath, Souvik Dey, Nitish R. Mahapatra, Moeto Nagai and Tuhin Subhra Santra\*



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### Graphene-based microfluidic perforated microelectrode arrays for retinal electrophysiological studies

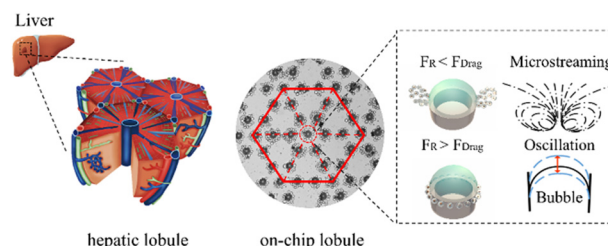
Alberto Esteban-Linares, Xiaosi Zhang, Hannah H. Lee, Michael L. Risner, Sharon M. Weiss, Ya-Qiong Xu, Edward Levine\* and Deyu Li\*



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### Heterogeneous tissue construction by on-demand bubble-assisted acoustic patterning

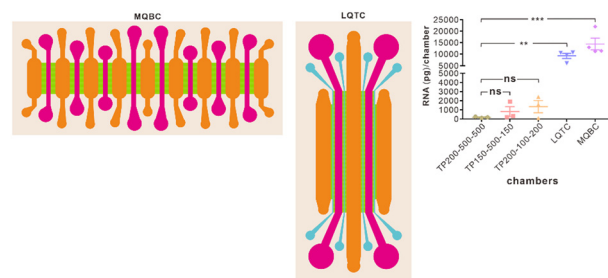
Qinghao Hu, Xuejia Hu, Yang Shi, Li Liang, Jiaomeng Zhu, Shukun Zhao, Yifan Wang, Zezheng Wu, Fubing Wang, Fuling Zhou and Yi Yang\*



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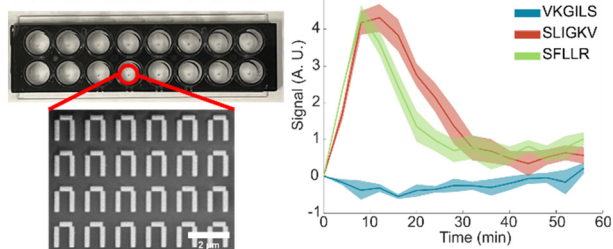
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Zhuoxuan Yang, Jun Yu, Jian Zhang, Huixue Song, Haixia Ye, Jianhui Liu, Nijia Wang, Pengfei Che, Gaoxin Long, Yunxuan Wang, Jaewon Park\* and Sheng-Jian Ji\*



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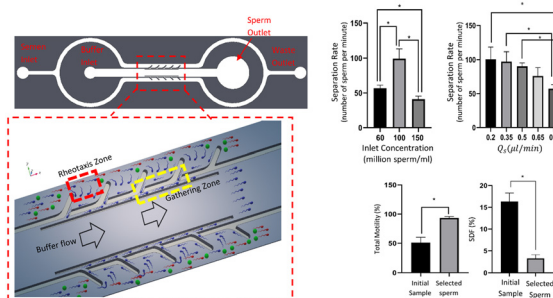
## Mid-IR metasurface in 16-well cell culture chamber



## Metasurface-enhanced infrared spectroscopy in multiwell format for real-time assaying of live cells

Steven H. Huang,\* Giovanni Sartorello, Po-Ting Shen, Chengqi Xu, Olivier Elemento\* and Gennady Shvets\*

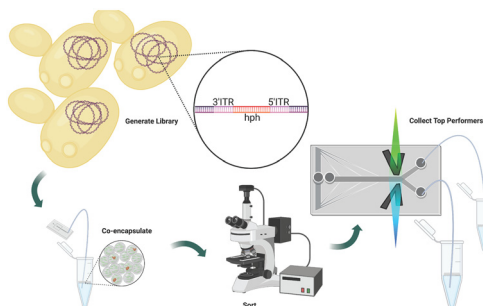
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## High-DNA integrity sperm selection using rheotaxis and boundary following behavior in a microfluidic chip

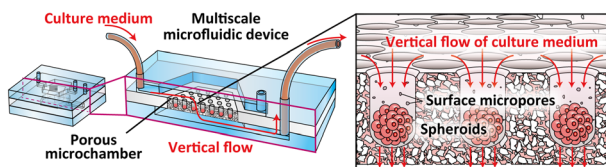
Soroush Zeaei, Mohammad Zabetian Targhi,\* Iman Halvaei and Reza Nosrati\*

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Temporal sorting of microdroplets can identify productivity differences of itaconic acid from libraries of *Yarrowia lipolytica*

Emily K. Bowman,\* Phuong T. Nguyen Hoang, Angela R. Gordillo Sierra, Karoline M. Vieira Nogueira and Hal S. Alper

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## A multiscale, vertical-flow perfusion system with integrated porous microchambers for upgrading multicellular spheroid culture

Mai Takagi, Masumi Yamada,\* Rie Utoh and Minoru Seki

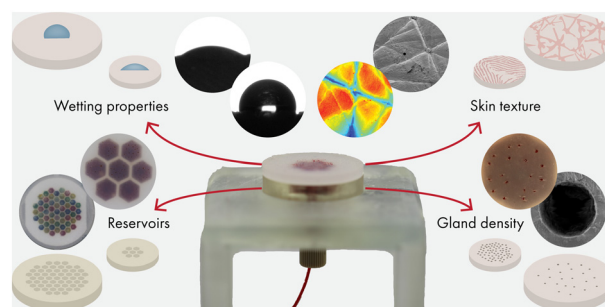


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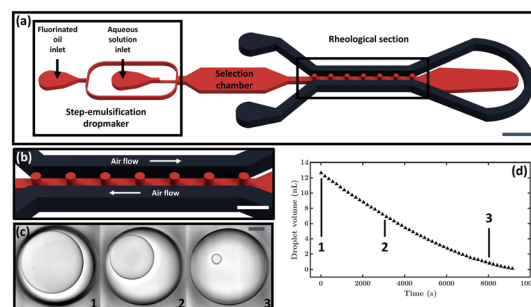
Emma J. M. Moonen, Tanveer ul Islam, Sebastiaan van Kemenade, Eduard Pelssers, Jason Heikenfeld and Jaap M. J. den Toonder\*



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**Droplet-based microfluidic platform for viscosity measurement over extended concentration range**

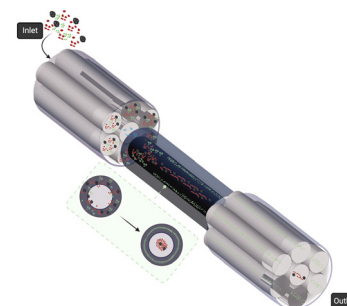
Paul Cochard-Marchewka,\* Nicolas Bremond and Jean Baudry



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**Lab-in-a-fiber-based integrated particle separation and counting**

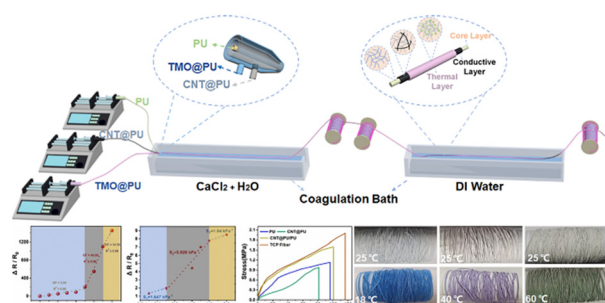
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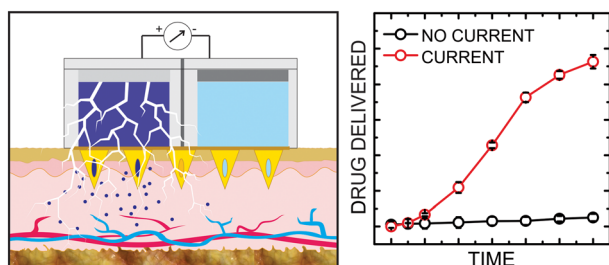
**Flexible coaxial composite fiber based on carbon nanotube and thermochromic particles for multifunctional sensor and wearable electronics**

Ningle Hou, Hui Wang, Aijia Zhang, Ling Li,\* Xiaoting Li\* and Wenming Zhang\*





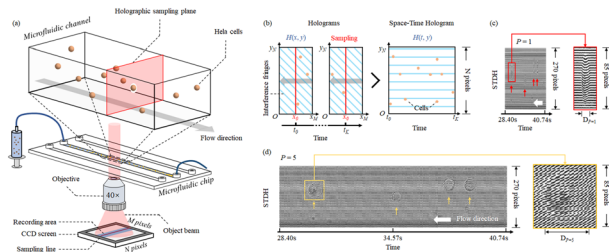
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Usanee Detamornrat, Marc Parrilla,\*  
 Juan Domínguez-Robles, Qonita Kurnia Anjani,  
 Eneko Larrañeta, Karolien De Wael  
 and Ryan F. Donnelly\*

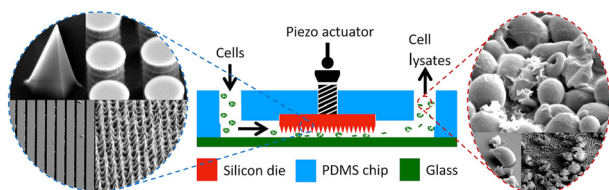
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### Holographic flow scanning cytometry overcomes depth of focus limits and smartly adapts to microfluidic speed

Zhe Wang, Vittorio Bianco,\* Pier Luca Maffettone  
 and Pietro Ferraro

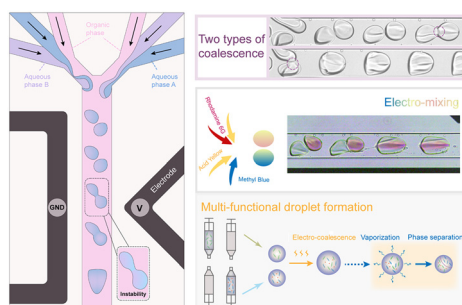
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### Integration of silicon chip microstructures for in-line microbial cell lysis in soft microfluidics

Pavani Vamsi Krishna Nittala, Allison Hohreiter,  
 Emilio Rosas Linhard, Ryan Dohn, Suryakant Mishra,  
 Abhiteja Konda, Ralu Divan, Supratik Guha  
 and Anindita Basu\*

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### AC-electric-field-controlled multi-component droplet coalescence at microscale

Weidong Fang, Zhi Tao, Haiwang Li, Shuai Yin,  
 Tiantong Xu, Yi Huang\* and Teckneng Wong



## CORRECTION

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**Correction: Fully-automated and field-deployable blood leukocyte separation platform using multi-dimensional double spiral (MDDS) inertial microfluidics**

Hyungkook Jeon, Bakr Jundi, Kyungyong Choi, Hyunryul Ryu, Bruce D. Levy, Geunbae Lim and Jongyoon Han\*

