



# EES Catalysis

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Exceptional research on energy  
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Fundamental questions  
Elemental answers

Registered charity number: 207890



2157

### Sheath-enhanced concentration and on-chip detection of bacteria from an extremely low-concentration level

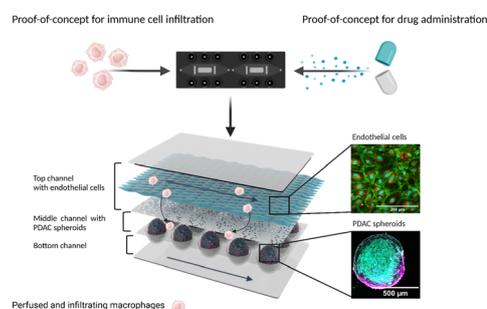
Xinye Chen, Ruonan Peng, Ruo-Qian Wang and Ke Du\*



2168

### Modelling of the multicellular tumor microenvironment of pancreatic ductal adenocarcinoma (PDAC) on a fit-for-purpose biochip for preclinical drug discovery

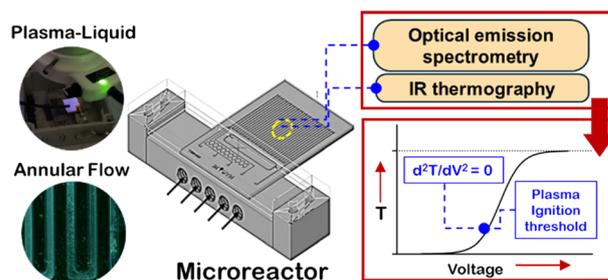
Alina Deipenbrock, Ben Eric Wilmes, Thomas Sommermann, Nader Abdo, Kyra Moustakas, Martin Raasch, Knut Rennert and Nicole E. Teusch\*



2182

### Ignition of non-equilibrium methane dielectric barrier discharges in a multiphase plasma-liquid microfluidic device

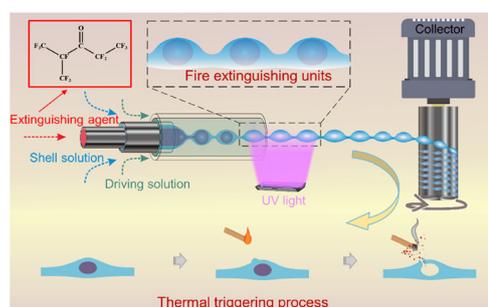
Sudip Das, Mackenzie Meyer, Mark J. Kushner and Ryan L. Hartman\*



2193

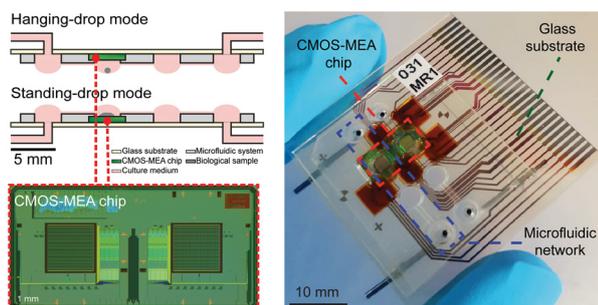
### Array-structured microcapsule fibers for efficient fire extinguishing in confined spaces

Qiaosheng Pan, Ning Sang, Tianpei Zhou, Changzheng Wu, Ting Si, Fangsheng Huang\* and Zhiqiang Zhu\*



## PAPERS

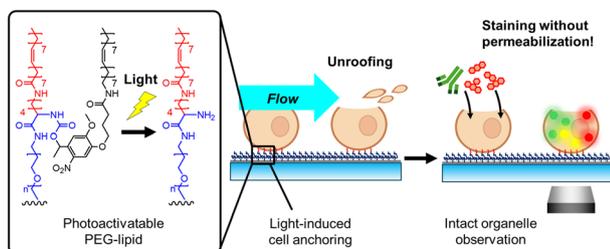
2205



### Seamless integration of CMOS microsensors into open microfluidic systems

Raziyeh Bounik, Alex E. Landolt, Jihyun Lee, Vijay Viswam, Fernando Cardes, Mario M. Modena\* and Andreas Hierlemann

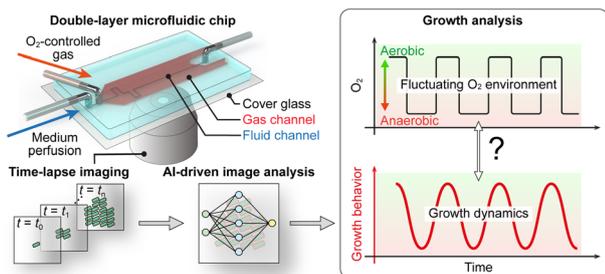
2222



### Microfluidic cell unroofing for the *in situ* molecular analysis of organelles without membrane permeabilization

Yuki Umeda, Shinya Yamahira, Koki Nakamura, Tomoko Takagi, Tomoko Suzuki, Kae Sato, Yusuke Hirabayashi, Akimitsu Okamoto and Satoshi Yamaguchi\*

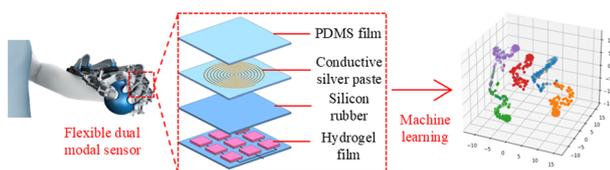
2234



### Unveiling microbial single-cell growth dynamics under rapid periodic oxygen oscillations

Keitaro Kasahara, Johannes Seiffarth, Birgit Stute, Eric von Lieres, Thomas Drepper, Katharina Nöh and Dietrich Kohlheyer\*

2247



### Machine learning-assisted flexible dual modal sensor for multi-sensing detection and target object recognition in the grasping process

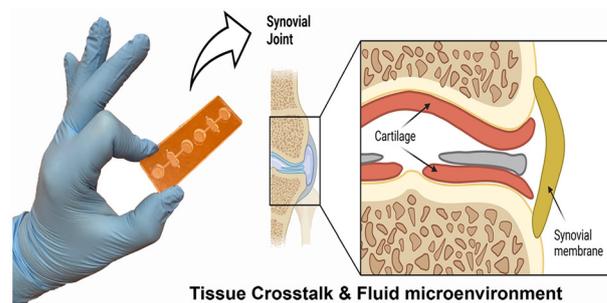
Wentao Dong,\* Kaiqi Sheng, Chang Chen and Xiaopeng Qiu



2256

### The effect of cyclic fluid perfusion on the proinflammatory tissue environment in osteoarthritis using equine joint-on-a-chip models

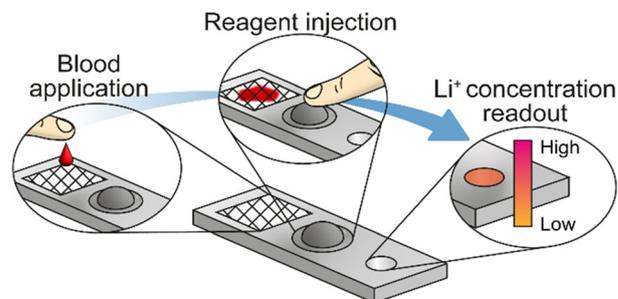
Johannes Heidenberger, Eva I. Reihls, Jonathan Strauss, Martin Frauenlob, Sinan Gültekin, Iris Gerner, Stefan Toegel, Peter Ertl, Reinhard Windhager, Florian Jenner and Mario Rothbauer\*



2270

### On-chip colorimetric assay for determining serum lithium concentration from whole blood

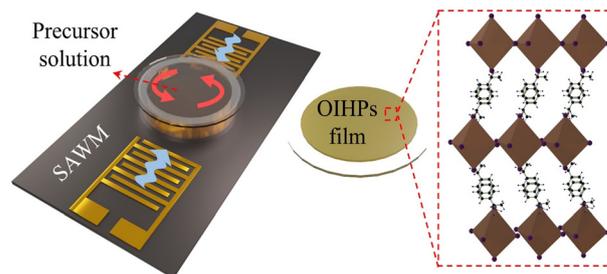
Carl Olsson, Janosch Hauser, Federico Ribet, Fredrik Wikström, André Görgens, Olof Beck, Martin Schalling, Lena Backlund and Niclas Roxhed\*



2278

### Chiral organic-inorganic hybrid perovskites synthesized using an acoustofluidic closed system

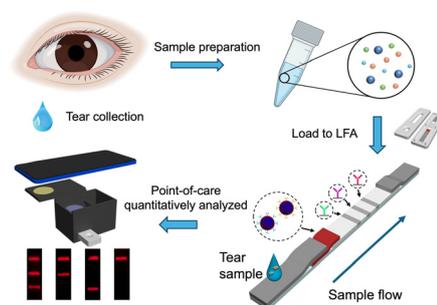
Tao Zhou, Yan Yu, Haonan Zhang, Chong Li, Ran Tao,\* Fujian Ren, Chen Fu, Jingting Luo and Yongqing Fu



2291

### Dual lateral flow assay using quantum nanobeads for quantitative detection of BDNF and TNF- $\alpha$ in tears

Yue Wu, Yubing Hu, Nan Jiang, Maria W. Georgi, Ali K. Yetisen\* and M. Francesca Cordeiro\*



## CORRECTION

2304

**Correction: Functionality integration in stereolithography 3D printed microfluidics using a “print-pause-print” strategy**

Matthieu Sagot, Timothée Derkenne, Perrine Giunchi, Yohan Davit, Jean-Philippe Nougayrède, Corentin Tregouet, Vincent Rimbault, Laurent Malaquin and Bastien Venzac\*

