

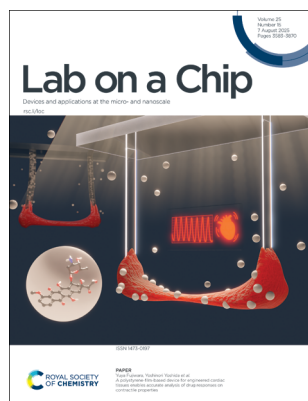
# Lab on a Chip

Devices and applications at the micro- and nanoscale  
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**Cover**  
See Yuya Fujiwara, Yoshinori Yoshida *et al.*, pp. 3592–3603.  
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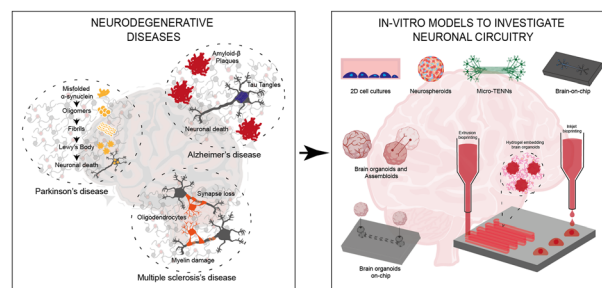
**Inside cover**  
See Shuqi Wang, Bangchuan Hu, Hongwei Jiang *et al.*, pp. 3604–3616.  
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## PERSPECTIVE

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### Exploring neuronal circuitry in neurodegenerative diseases: from traditional models to cutting-edge techniques

Chiara Ausilio, Annachiara Scalzone and Paolo Antonio Netti\*

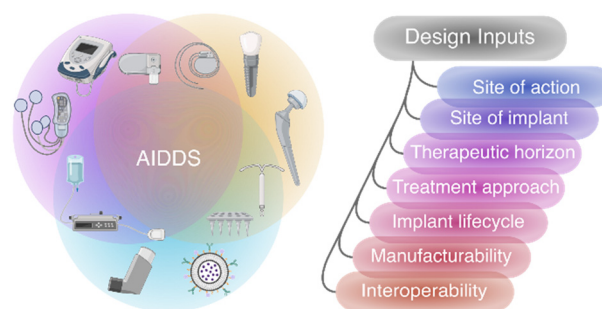


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### Active implantable drug delivery systems: engineering factors, challenges, opportunities

Fabiana Del Bono,\* Nicola Di Trani, Danilo Demarchi, Alessandro Grattoni and Paolo Motto Ros





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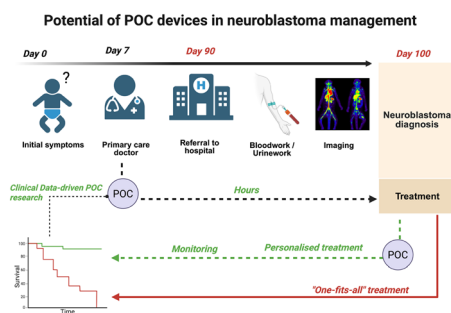


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## Diagnostic technologies for neuroblastoma

Leena Khelifa, Yubing Hu,\* Jennifer Tall, Rasha Khelifa, Amina Ali, Evon Poon, Mohamed Zaki Khelifa, Guowei Yang, Catarina Jones, Rosalia Moreddu, Nan Jiang,\* Savas Tasoglu, Louis Chesler and Ali K. Yetisen

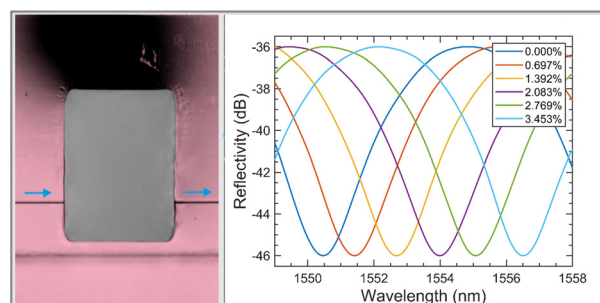


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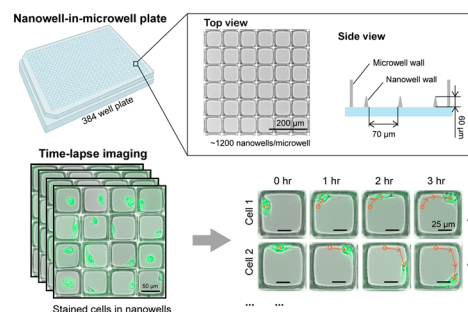
Daniel Nwatu,\* Sergiy Suntsov, Detlef Kip and Kore Hasse



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## High-throughput single cell motility analysis using nanowell-in-microwells

Pan Deng, Wenze Lyu, Deasung Jang, Kerryn Matthews, Simon P. Duffy and Hongshen Ma\*

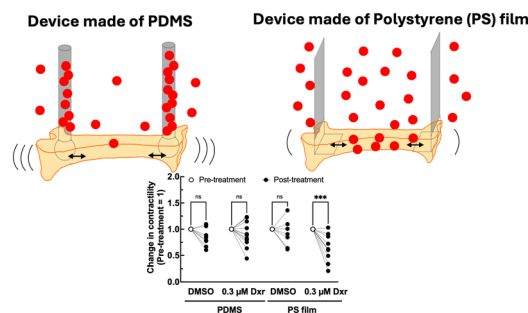


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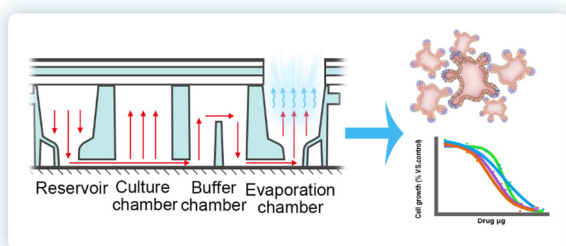
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## A polystyrene-film-based device for engineered cardiac tissues enables accurate analysis of drug responses on contractile properties

Yuya Fujiwara,\* Masako Sasaki, Sohei Funaoka, Takuro Yoshikuni, Yuki Naka, Kazumi Ida, Taichi Aihara, Shunsuke Funakoshi, Kenichi Imahashi and Yoshinori Yoshida\*



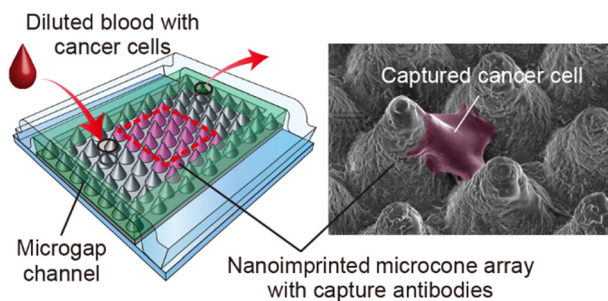
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### A novel microfluidic self-perfusion chip (MSPC) for pumless 3D cell, microtissue and organoid culture

Guohua Wu, Di Wu, Wenqi Hu, Qinrui Lu, Yusen Zhou, Jie Liu, Qijun Du, Zhi Luo, Haijie Hu, Hongwei Jiang,\* Bangchuan Hu\* and Shuqi Wang\*

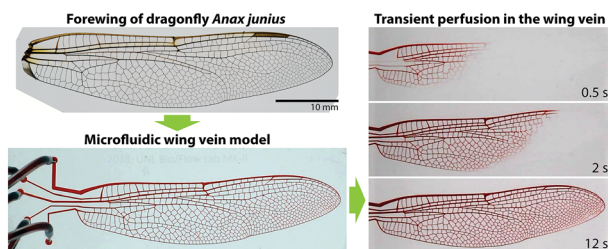
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### Enhancing cancer cell immunocapture on orientation-controlled nanoimprinted microcone arrays in microgap channels

Yuhei Saito, Natsumi Shimmyo, Shuhei Aoyama, Rie Utoh, Minoru Seki and Masumi Yamada\*

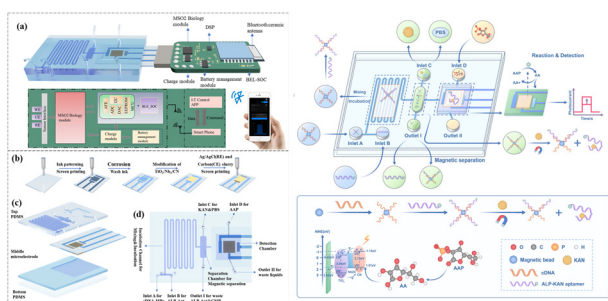
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### Insect wing circulation: transient perfusion through a microfluidic dragonfly forewing model

Sangjin Ryu,\* Haipeng Zhang, Tomer Palmon, Mary K. Salcedo, Günther Pass and John J. Socha

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### Magnetic-enzymatic synergy driven photoelectrochemical aptasensor on a microfluidic chip for sub-pM kanamycin detection

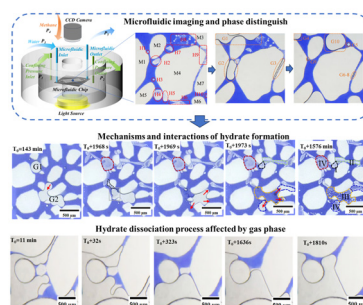
Yuchen Shen, YunYi Shi and Juan Wang\*



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## Impact of multiphasic pore-scale interactions on gas hydrate formation and dissociation characteristics and kinetics: a microfluidic study

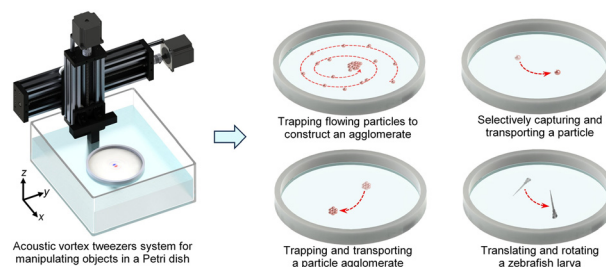
Yuze Wang,\* Jianyu Yang, Pengfei Wang, Jinlong Zhu and Yongshun John Chen



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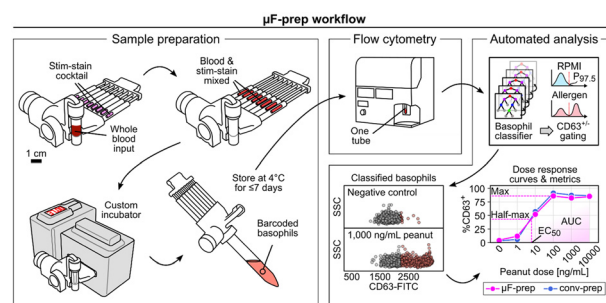
Teng Li, Yingshan Du, Bowen Cai, Michael R. Brooks, Chongpeng Qiu, Zhide Wang, Jiali Li, Luyu Bo, Y. Albert Pan and Zhenhua Tian\*



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## A hand-operated microfluidic sample preparation-to-analysis workflow for simplifying the basophil activation test

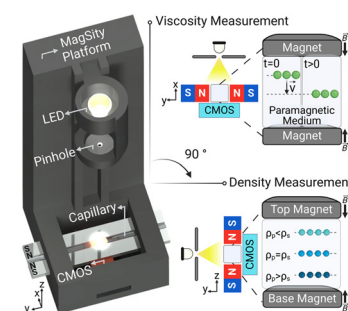
Nicolas Castaño, Kaiser Chua, An Nguyen, Wyeth Marshall, Grady H. Hofmann, Jonathan Lee, Mindy Tsai, Sayantani B. Sindher, Kari C. Nadeau, R. Sharon Chinthrajah, Stephen J. Galli and Sindy K. Y. Tang\*



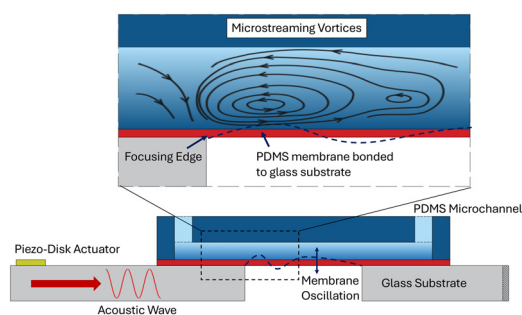
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## MagSity platform: a hybrid magnetic levitation-based lensless holographic microscope platform for liquid density and viscosity measurements

Oyku Doyran Ince and H. Cumhur Tekin\*



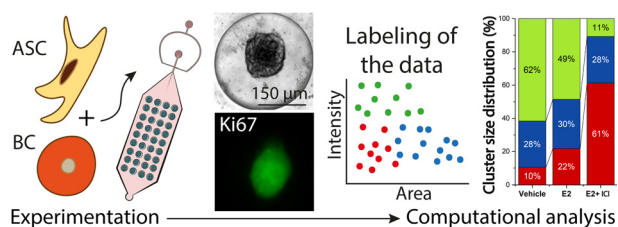
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### Acoustic microstreaming and augmentation of gas exchange using an oscillating membrane towards microfluidic artificial lungs

Anthony Mercader and Sung Kwon Cho\*

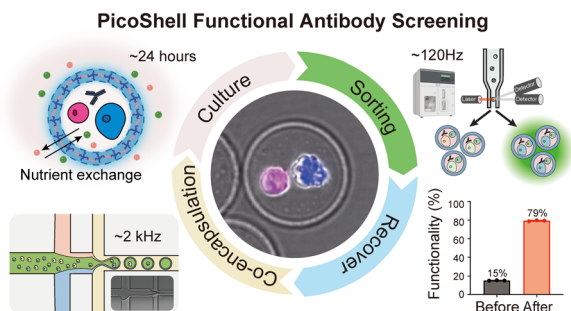
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### Droplet microfluidics integrated with machine learning reveals how adipose-derived stem cells modulate endocrine response and tumor heterogeneity in ER<sup>+</sup> breast cancer

Braulio Andrés Ortega Quesada, Calley Chauvin, Elizabeth Martin\* and Adam Melvin\*

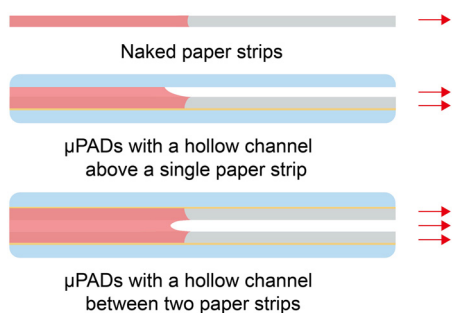
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### Functional screening of antibody-secreting cells by co-culture with reporter T cells using PicoShells

Kazuki Nishimoto,\* Rajesh Ghosh, Mark van Zee, Darren Fang, Zhiyuan Mao, Miyako Noguchi and Dino Di Carlo\*

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### Fast capillary flow on μPADs with hollow channels packaged by a thermal contraction tube

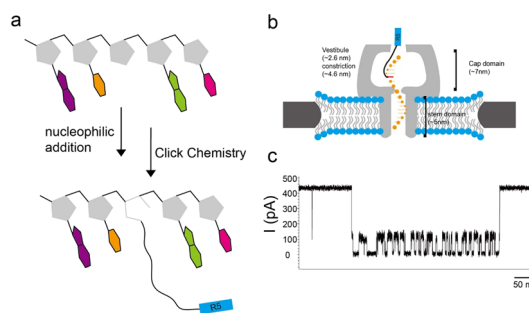
Xinyi Chen, Haonan Li, Xionghui Li, Muyang Zhang, Qinghao He, Jie Zhou, Jiahua Zhong, Hao Chen, Yixi Shi, Huilin Chen, Huiru Zhang, Lok Ting Chu and Weijin Guo\*



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## Polyarginine-functionalized AP site probes for mechanistic analysis of uracil–DNA glycosylase via nanopore-based single-molecule sensing

Ting Li,\* Shaojiao Song, Wei Lu, Xin Zheng, Hui Tian, Yu Cao, Qiuyue Zhao, Hongying Xie, Jiexin Zheng and Hailong Wang\*



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## Monitoring the mechanical responses of tumor metastasis based on a microfluidic chip integrated with an electrochemical detection system

Shuqi Chen, Hang Qi, Yuanheng Kuang, Quanning Li, Xuejiao Chen and Yanyan Wang\*

