# Lab on a Chip

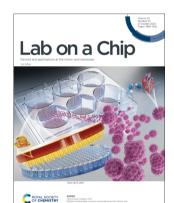
### Devices and applications at the micro- and nanoscale

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### IN THIS ISSUE

ISSN 1473-0197 CODEN LCAHAM 23(20) 4369-4612 (2023)



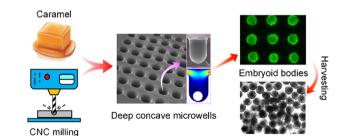
Cover See Qiang Zhao, Gang Li *et al.*, pp. 4378–4389. Image reproduced by permission of Gang Li from *Lab Chip*, 2023, **23**, 4378.

### PAPERS

### 4378

Reflow-molded deep concave microwell arrays for robust and large-scale production of embryoid bodies

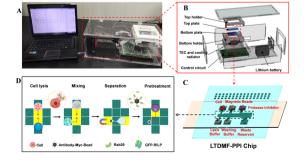
Xue Han, Qi Zhang, Hui He, Qiang Zhao\* and Gang Li\*



### 4390

# A low-temperature digital microfluidic system used for protein-protein interaction detection

Jienan Shen, Jiaqi Liao, Huiying Liu, Chunyan Liu, Chonghao Li, Hao Cheng, Hui Yang\* and Hong Chen\*



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Lab on a Chip (electronic: ISSN 1473-0189) is published 24 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road Cambridge, CB4 0WF, UK

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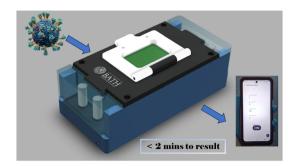
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### 4400

# LoCKAmp: lab-on-PCB technology for <3 minute virus genetic detection

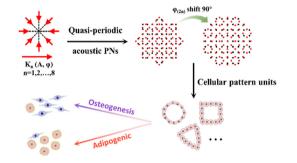
Sotirios Papamatthaiou,\* James Boxall-Clasby, Edward J. A. Douglas, Pawel Jajesniak, Hadrien Peyret, June Mercer-Chalmers, Varun K. S. Kumar, George P. Lomonossoff, Julien Reboud, Maisem Laabei, Jonathan M. Cooper, Barbara Kasprzyk-Hordern and Despina Moschou



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# Acoustic quasi-periodic bioassembly based diverse stem cell arrangements for differentiation guidance

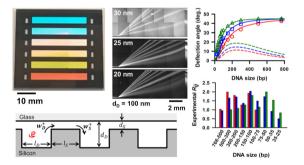
Xiaoqi Gao, Xuejia Hu, Dongyong Yang, Qinghao Hu, Jingjing Zheng, Shukun Zhao, Chengliang Zhu, Xuan Xiao\* and Yi Yang\*



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Continuous-flow macromolecular sieving in slanted nanofilter array: stochastic model and coupling effect of electrostatic and steric hindrance

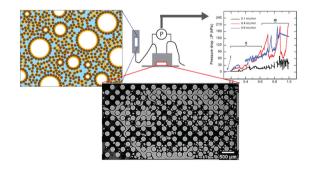
Sung Hee Ko,\* Pyeong Jun Park\* and Jongyoon Han

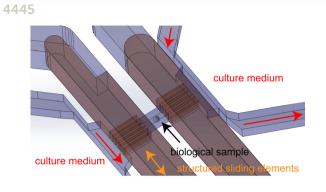


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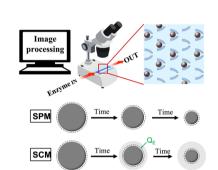
# Bubble-particle dynamics in multiphase flow of capillary foams in a porous micromodel

Omotola Okesanjo, Guillaume Aubry, Sven Behrens,\* Hang Lu\* and J. Carson Meredith\*





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**Dynamic Perfusion** 

Time

Multiparametric Imaging

Insulin

### A microfluidic mechano-chemostat for tissues and organisms reveals that confined growth is accompanied with increased macromolecular crowding

Zacchari Ben Meriem, Tiphaine Mateo, Julien Faccini, Céline Denais, Romane Dusfour-Castan, Catherine Guynet, Tatiana Merle, Magali Suzanne, Mickaël Di-Luoffo, Julie Guillermet-Guibert, Baptiste Alric, Sylvain Landiech, Laurent Malaquin, Fabien Mesnilgrente, Adrian Laborde, Laurent Mazenq, Rémi Courson and Morgan Delarue\*

### Mechanism and kinetics of enzymatic degradation of polyester microparticles using a shrinking particle-shrinking core model

Hooman Torabi, Farhad Javi, Ted W. Deisenroth, Toan V. Pho, Victoria Barbright and Alireza Abbaspourrad\*

# Islet-on-chip: promotion of islet health and function *via* encapsulation within a polymerizable fibrillar collagen scaffold

Emma L. Vanderlaan, Joshua Sexton, Carmella Evans-Molina, Adrian Buganza Tepole and Sherry L. Voytik-Harbin\*

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Easy to Fabricate

**3D-Printed Chip** 

Mechanobiological Support of

Ex-Vivo Islet Survival and Function

Fibrillar Collagen Scaffold Integrin Signaling



### An all-in-one platform to deplete pathogenic bacteria for rapid and safe enrichment of plantderived extracellular vesicles

Zhihao Wen, Jianning Yu, Hyorim Jeong, Dong-Uk Kim, Ji Yeong Yang, Kyung-A Hyun, Seoyeon Choi,\* Sunyoung Park\* and Hyo-Il Jung\*

### 4493

# *In situ* synthesis of [Cu(BODN)·5H<sub>2</sub>O]<sub>n</sub>@nano-Al composite energetic films with tunable properties in pyro-MEMS

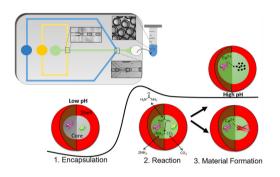
Wei Liu, Yongan Feng, Yapeng Yao, Zihang Liang, Fei Xiao and Zhongliang Ma\*



### 4504

# A microfluidic double emulsion platform for spatiotemporal control of pH and particle synthesis

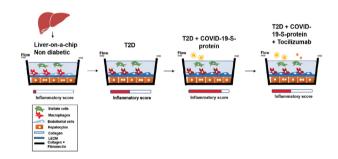
Maheen Rana, Raheel Ahmad and Annette F. Taylor\*



### 4514

### Modeling mechanisms underlying differential inflammatory responses to COVID-19 in type 2 diabetes using a patient-derived microphysiological organ-on-a-chip system

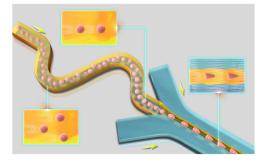
Vinny Negi, Dillon Gavlock, Mark T. Miedel, Jeong Kyung Lee, Tongying Shun, Albert Gough, Lawrence Vernetti, Andrew M. Stern, D. Lansing Taylor and Vijay K. Yechoor\*



### 4528

# High-throughput adjustable deformability cytometry utilizing elasto-inertial focusing and virtual fluidic channel

Zheng Zhou, Chen Ni, Zhixian Zhu, Yao Chen, Zhonghua Ni and Nan Xiang\*



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# 4540

SMCs in

collagen gel

media

arteriole

microfluidic chip

collagen gel

··· ÉC monolaver

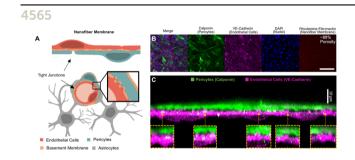
venule

### Enhanced cardiomyocyte structural and functional anisotropy through synergetic combination of topographical, conductive, and mechanical stimulation

Jongyun Kim, Arunkumar Shanmugasundaram, Cheong Bin Lee, Jae Rim Kim, Jeong Jae Park, Eung-Sam Kim, Bong-Kee Lee and Dong-Weon Lee\*

### Development of a perfusable, hierarchical microvasculature-on-a-chip model

Sophia W. Chen, Adriana Blazeski, Shun Zhang, Sarah E. Shelton\* Giovanni S. Offeddu\* and Roger D. Kamm\*



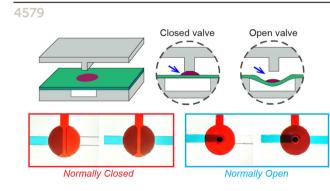
fibroblasts in

fibrin ael

capillary bed

### Ultra-thin and ultra-porous nanofiber networks as a basement-membrane mimic

Philip M. Graybill, Edward J. Jacobs IV, Aniket Jana, Atharva Agashe, Amrinder S. Nain\* and Rafael V. Davalos\*



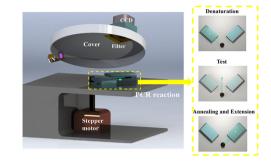
# Millifluidic valves and pumps made of tape and plastic

Josue U. Amador-Hernandez, Pablo E. Guevara-Pantoja, Diana F. Cedillo-Alcantar, Gabriel A. Caballero-Robledo and Jose L. Garcia-Cordero\*

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Portable rotary PCR system for real-time detection of *Pseudomonas aeruginosa* in milk

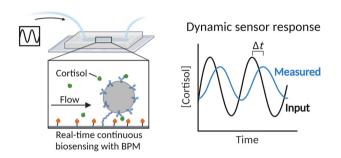
Weidu Song, Chuanhao Zhang, Huichao Lin, Taiyi Zhang, Haixia Liu and Xiaowen Huang\*



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# Real-time continuous monitoring of dynamic concentration profiles studied with biosensing by particle motion

Max H. Bergkamp, Sebastian Cajigas, Leo J. van IJzendoorn and Menno W. J. Prins\*



### RETRACTION

### 4610

# Retraction: A new polymer lab-on-a-chip (LOC) based on a microfluidic capillary flow assay (MCFA) for detecting unbound cortisol in saliva

Vinitha T. U., Sthitodhi Ghosh, Alexander Milleman, Thinh Nguyen and Chong H. Ahn\*