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Lab on a Chip

Devices and applications at the micro- and nanoscale

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See Xiasheng Guo, Dong Zhang *et al.*, pp. 4598–4608.
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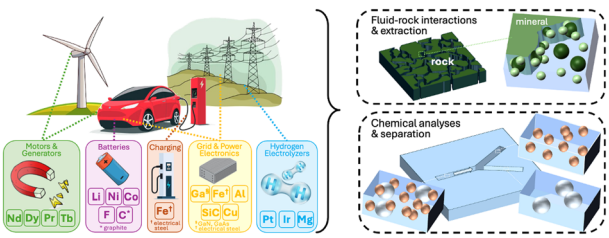
Mine-on-a-chip: megascale opportunities for microfluidics in critical materials and minerals recovery

Wen Song*



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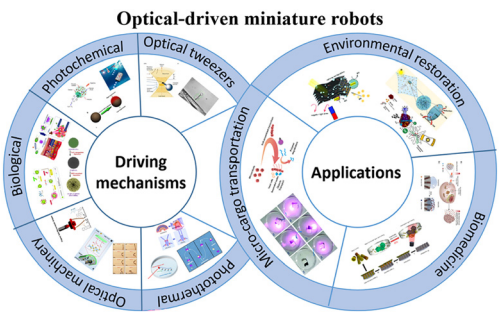
Optical-driven miniature robots: driving mechanism, applications and future trends

Xiaowen Wang,* Sen Jia, Yingnan Gao, Changyou Liu, Yaping Wang, Anqin Liu and Wenguang Yang



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CRITICAL REVIEWS

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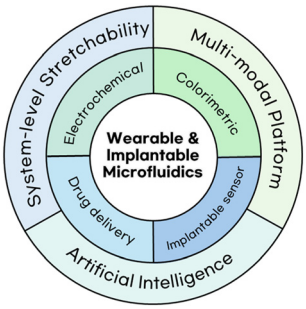
Wearable and implantable microfluidic technologies for future digital therapeutics

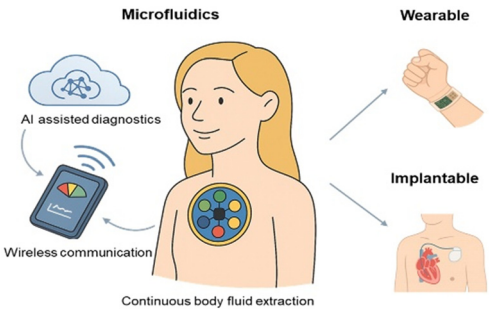
Sanghoon Lee, Won Gi Chung, Enji Kim, Eunmin Kim, Joonho Paek, Dayeon Kim, Seung Hyun An, Taekyeong Lee, Jung Ah Lim* and Jang-Ung Park*



4542

Microfluidic technologies for wearable and implantable biomedical devices

Ziheng Wang, Ankit Shah, Hyowon Lee* and Chi Hwan Lee*



COMMUNICATIONS

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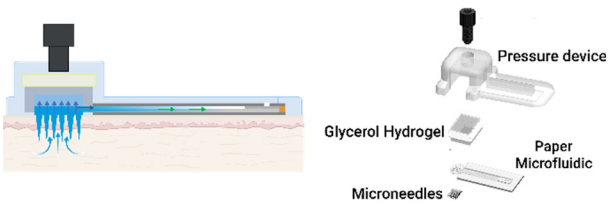
Design and characterization of a self-powered microneedle microfluidic system for interstitial fluid sampling

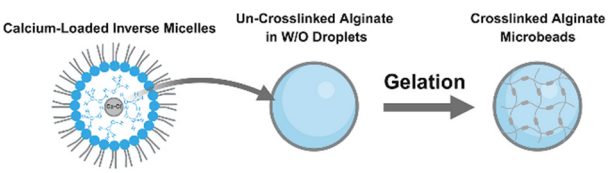
Christopher T. Sharkey, Angélica F. Aroche, Isabella G. Agusta, Hannah Nissan, Tamoghna Saha, Sneha Mukherjee, Jack S. Twiddy, Michael D. Dickey, Orlin Velev and Michael A. Daniele*



4588

Inverse micelle mediated calcium chloride transportation for facile alginate gelation in microdroplets

Fuyang Qu,* Luoquan Li, Qinru Xiao and Yi-Ping Ho*



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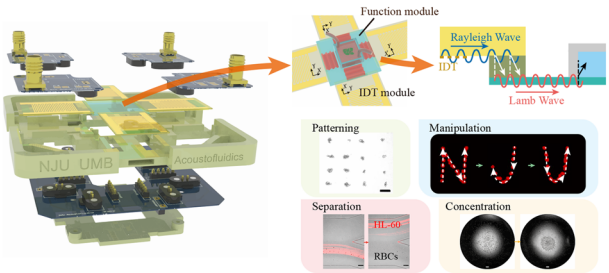

A SAW-driven modular acoustofluidic tweezer

Dachuan Sang, Suyu Ding, Qinran Wei, Fengmeng Teng, Haixiang Zheng, Yu Zhang, Dong Zhang* and Xiasheng Guo*

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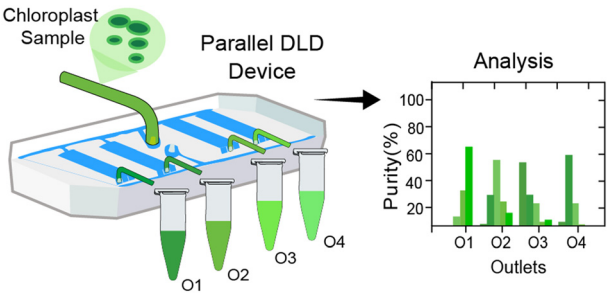

Parallel DLD microfluidics for chloroplast isolation and sorting

Oriana G. Chavez-Pineda, Pablo E. Guevara-Pantoja, Victor Marín-Lizarraga, Gabriel A. Caballero-Robledo, Luis D. Patiño-Lopez, Daniel A. May-Arrioja,* Clelia De-la-Peña* and Jose L. Garcia-Cordero*

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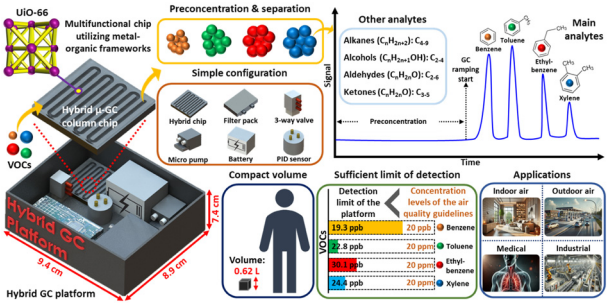

Hybrid GC platform: a micro gas chromatography system with a simple configuration for low-concentration VOC analysis

Yeongseok Lee, Sangkyun Lee, Woojin Jang, Junwoo Lee, Yuntaek Choi and Si-Hyung Lim*

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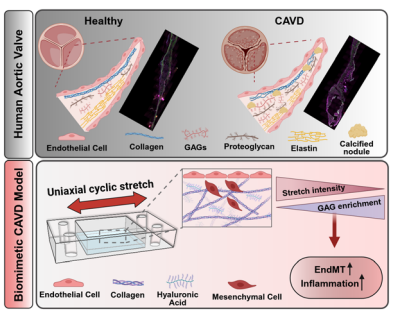

A disease-inspired *in vitro* model of aortic valve stenosis to investigate the drivers of endothelial–mesenchymal transition

Yasmin Mirzaalikhan, Austin Lai, Manijeh Khanmohammadi, Chanly Chheang, Azadeh Mirabedini, Shadi Houshyar, Jonathan Noonan, Anna M. D. Watson, Nalin Dayawansa, Silvana Marasco, Karlheinz Peter and Sara Baratchi*

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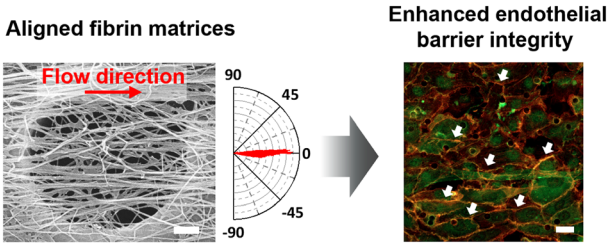
Endothelial layers cultured on an aligned fibrin matrix exhibit enhanced barrier integrity

Ju Hae Choi, Heejeong Yoon, Tae-Eun Park and Joo H. Kang*



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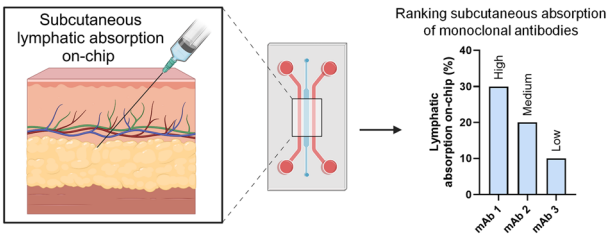
Utility of an *in vitro* lymphatics on-chip model for rank ordering subcutaneous absorption of monoclonal antibodies

Adriana Martinez Ledo,* Gabriela Misiewicz, Thomas Dimke, William R. Tschantz, Jillian Handel, Ryan Pelis, Gerard Bruin, Karoline Bechtold-Peters, Manuel Sanchez-Felix, Sujal Deshmukh, Seunggyu Kim, Maria Proestaki and Roger D. Kamm



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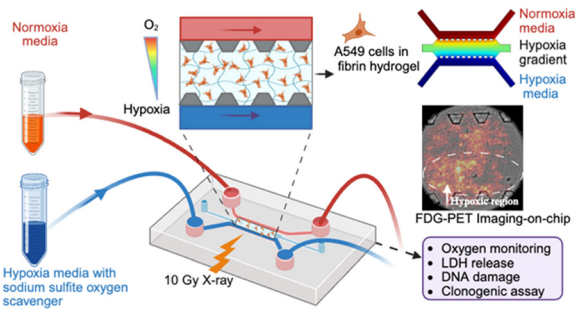
A lung tumor-on-a-chip model recapitulates the effect of hypoxia on radiotherapy response and FDG-PET imaging

Rohollah Nasiri, Myra Kurosu Jalil, Veronica Ibanez Gaspar, Andrea Sofia Flores Perez, Hieu Thi Minh Nguyen, Syamantak Khan, Sindy K. Y. Tang, Yunzhi Peter Yang and Guillem Pratx*



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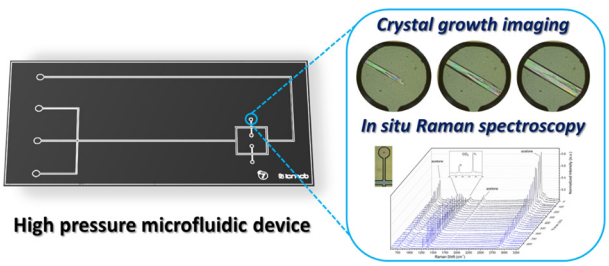
A microfluidic platform for studying supercritical fluid crystallization and its applications

Fatma Ercicek, Arnaud Erriguible, Olivier Nguyen, Christelle Harscoat-Schiavo, Pascale Subra-Paternault and Samuel Marre*



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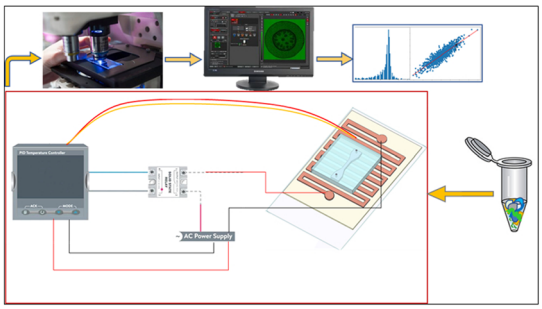

Inexpensive method for the quantitative estimation of hepatitis C virus RNA in blood plasma for low-resource settings using ML-based image intensity analysis of RT-LAMP products

Ranamay Saha, Kapil Manoharan,* Jasmine Samal, Sagnik Sarma Choudhury, Nitish Katiyar, Ekta Gupta and Shantanu Bhattacharya*

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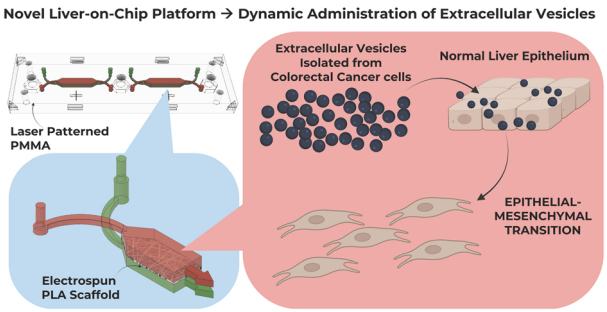

Rapid prototyping of a multicompartment liver-on-chip for dynamic administration of tumour derived vesicles within an electrospun scaffold

Maria Testa, Marco Loria, Francesco Lopresti,* Chiara Di Marco, Maïwenn Kersaudy-Kerhoas, Fabio Bucchieri, Marzia Pucci, Elisa Costanzo, Simone Dario Scilabra, Riccardo Alessandro, Simona Fontana* and Vincenzo La Carrubba

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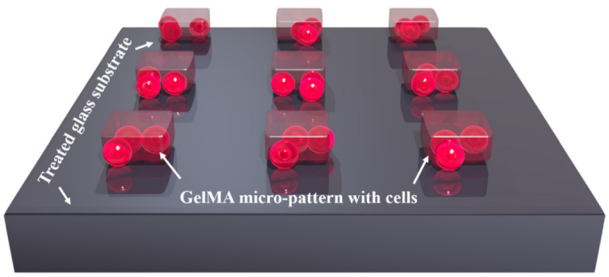

Massively parallel micro-patterning of photosensitive hydrogel encapsulated single-cells to a cluster of cells and bone regeneration application

Sarin Abraham, Gayathri R., Kavitha Govarthanan, Suresh Rao, Moeto Nagai and Tuhin Subhra Santra*

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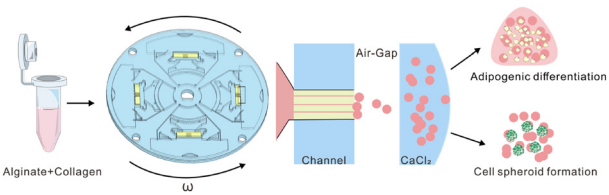

Centrifugal microfluidic chip with an air gap for oil-free production of enhanced adipogenic multicellular microspheres

Xueqing Ren, Xin Wang, Xiaolu Cai, Yi Zou, Peng Chen,* Bi-Feng Liu* and Yiwei Li*

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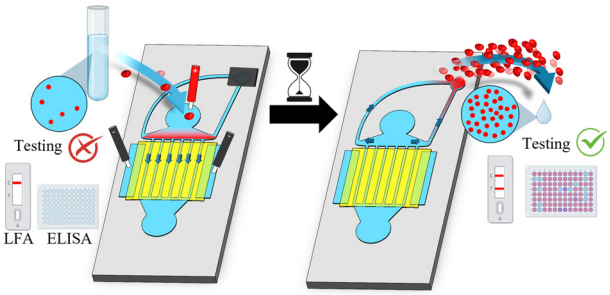
Enhancing commercially available immunoassays through a customized electrokinetic biomolecular preconcentration device

Barak Sabbagh, Sinwook Park and Gilad Yossifon*



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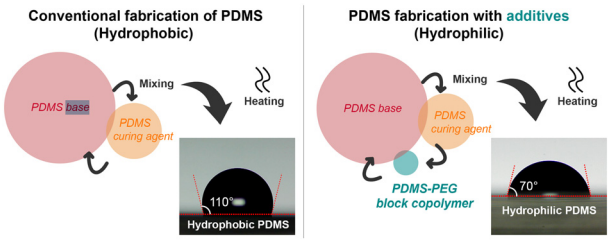
Simple additive-based modifications of PDMS for long-term hydrophilic stability

Eunyoung Park, Seungjin Kang and Ung Hyun Ko*



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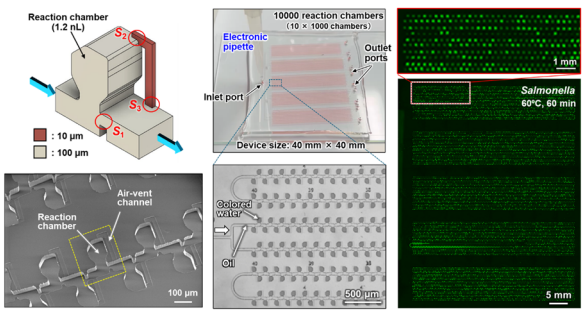
A high-speed sequential liquid compartmentalization method for digital loop-mediated isothermal amplification in a microfluidic device

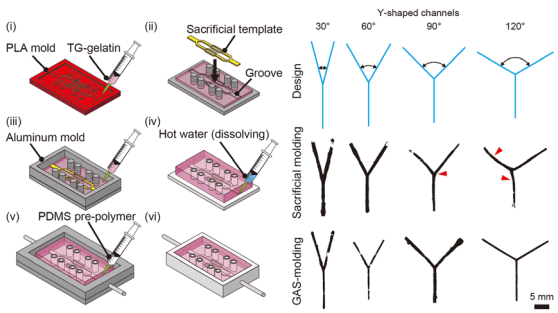
Riku Honda,* Taketo Saruwatari, Daigo Natsuhara, Yuka Kiba, Shunya Okamoto, Moeto Nagai, Masashi Kitamura and Takayuki Shibata*



4800

Groove-aided sacrificial molding for fabrication of an *in vitro* vascular model with branches using ECM-derived materials

Jumpei Muramatsu, Michinao Hashimoto, Shigenori Miura and Hiroaki Onoe*



CORRECTIONS

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Correction: Utilizing layer-parameter of shear horizontal surface acoustic wave biosensor for lipoprotein particle sizing

Chia-Hsuan Cheng, Hiromi Yatsuda and Jun Kondoh*

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Correction: Magnetically controllable 3D microtissues based on magnetic microcryogels

Wei Liu, Yaqian Li, Siyu Feng, Jia Ning, Jingyu Wang, Maling Gou, Huijun Chen, Feng Xu and Yanan Du*

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