Lab on a Chip

Micro- & nano- fluidic research for chemistry, physics, biology, & bioengineering

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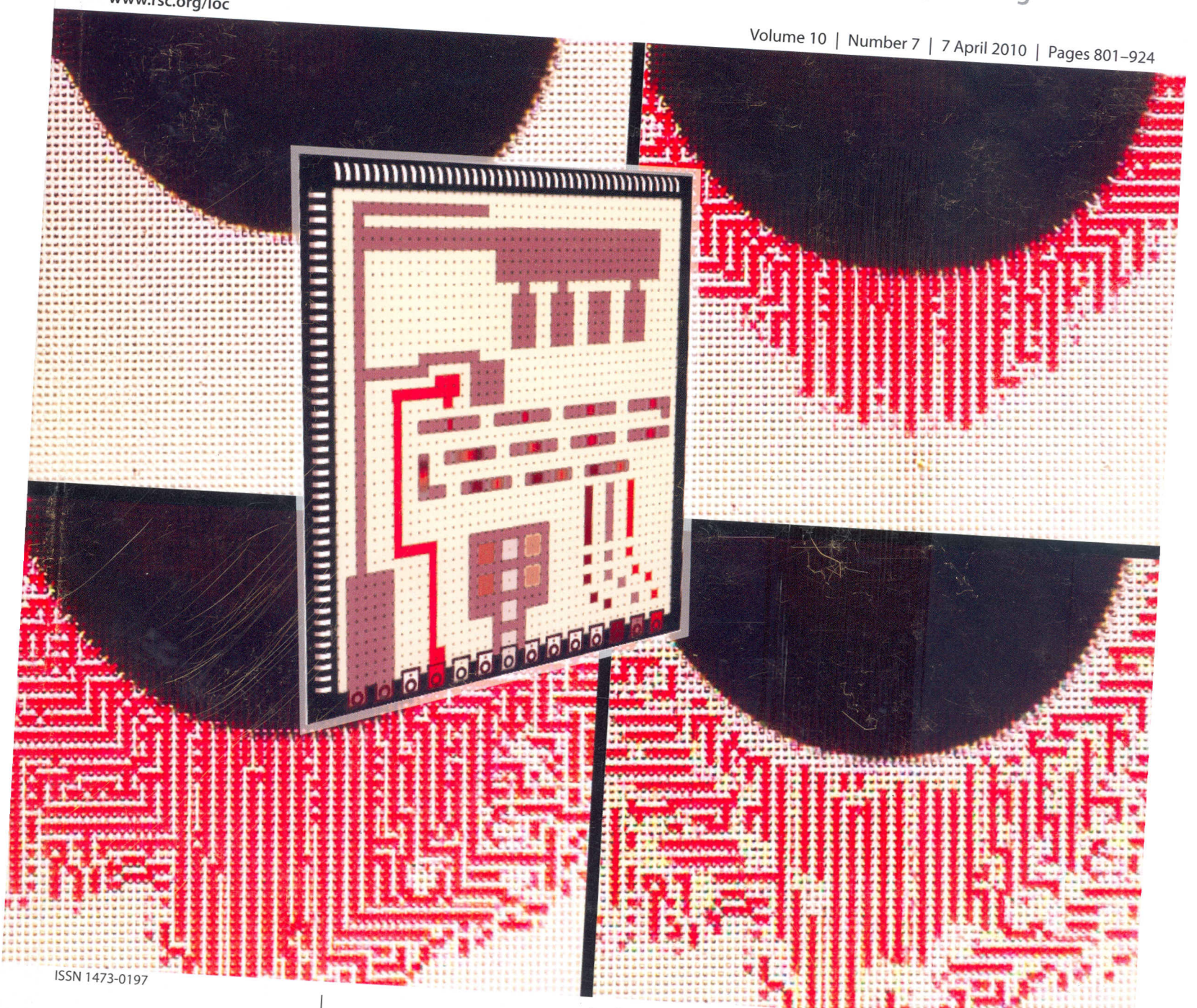

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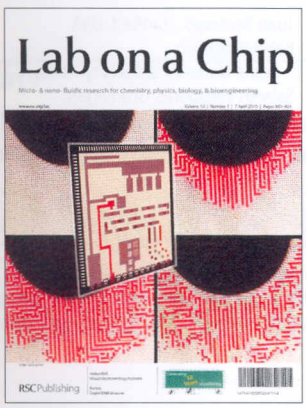
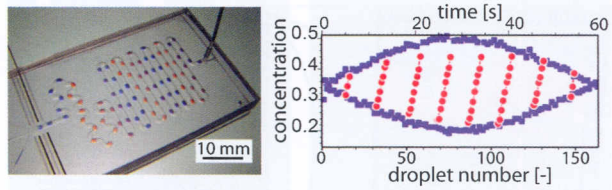


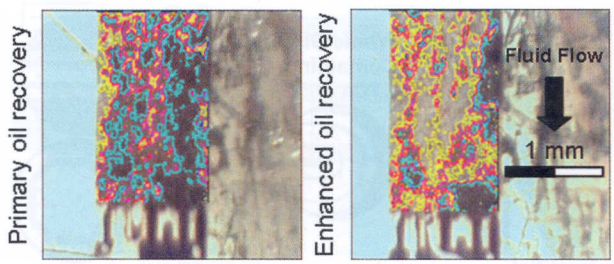
Cover
See Heikenfeld *et al.*, pp. 832–836. Time lapse experimental photos, and envisioned programmable lab-on-a-chip.
Image reproduced by permission of Jason Heikenfeld from *Lab Chip*, 2010, **10**, 832.

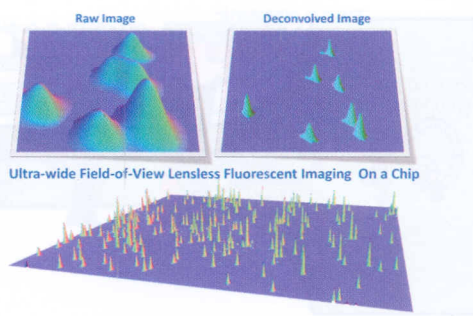
Inside cover
See Chiu *et al.*, pp. 837–842. A filtration app for enriching circulating tumor cells. A co-current filtration chip with improved hydrodynamic design reduced cellular stress. Image designed by J. S. Kuo.
Image reproduced by permission of Daniel Chiu from *Lab Chip*, 2010, **10**, 837.

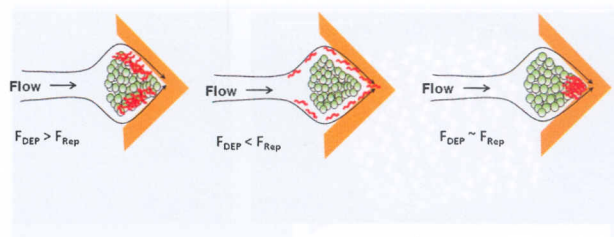
HIGHLIGHT

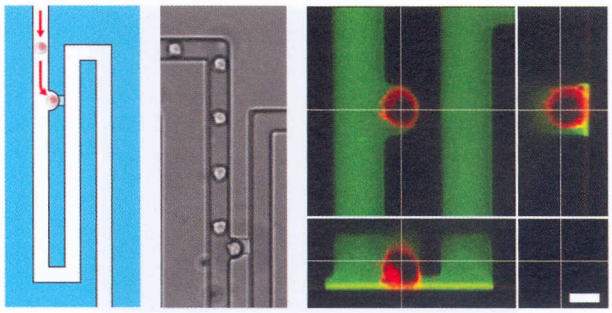
FOCUS

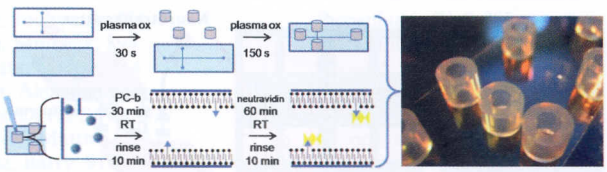


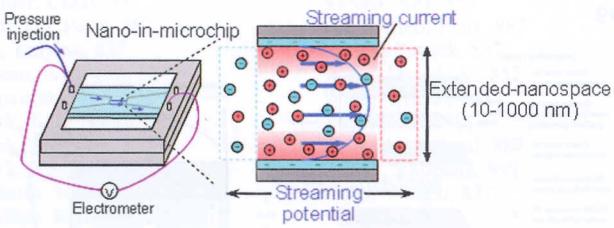


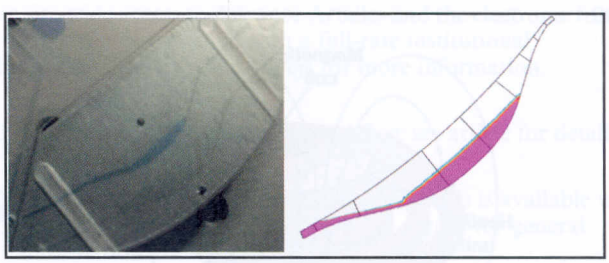












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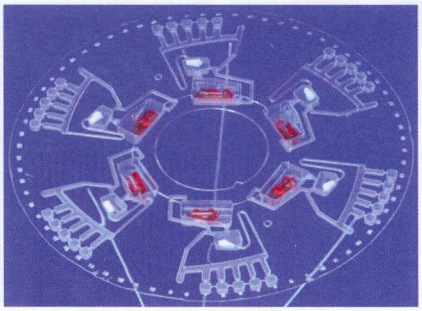

Microfluidic lab-on-a-foil for nucleic acid analysis based on isothermal recombinase polymerase amplification (RPA)

Sascha Lutz,* Patrick Weber, Max Focke, Bernd Faltin, Jochen Hoffmann, Claas Müller, Daniel Mark, Günter Roth, Peter Munday, Niall Armes, Olaf Piepenburg, Roland Zengerle and Felix von Stetten

A lab-on-a-foil for isothermal recombinase polymerase amplification (RPA) of dsDNA is presented. All liquid and dry reagents are prestored. The chip is processed and read out in a standard laboratory device.

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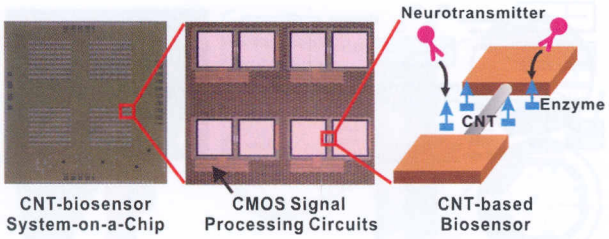
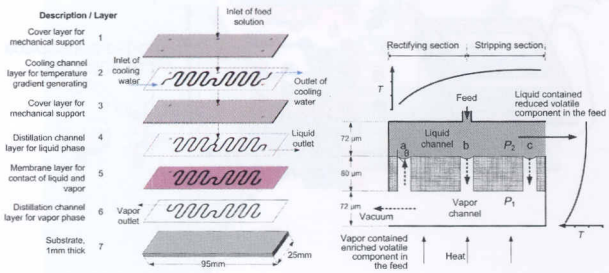


Biosensor *system-on-a-chip* including CMOS-based signal processing circuits and 64 carbon nanotube-based sensors for the detection of a neurotransmitter

Byung Yang Lee, Sung Min Seo, Dong Joon Lee, Minbaek Lee, Joohyung Lee, Jun-Ho Cheon, Eunju Cho, Hyunjoong Lee, In-Young Chung, Young June Park,* Suhwan Kim* and Seunghun Hong*

Uniform arrays of carbon nanotube (CNT)-based biosensors were integrated with CMOS signal-processing circuits into a CNT-biosensor system-on-a-chip (SoC) for the detection of glutamate, a neurotransmitter.

899

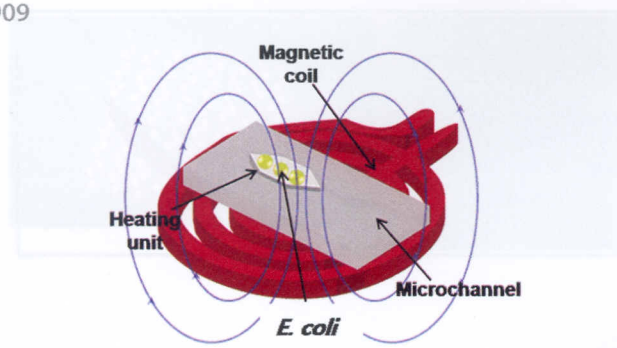


Vacuum membrane distillation by microchip with temperature gradient

Yaopeng Zhang, Shinji Kato* and Takanori Anazawa

A microfluidic setup for water–methanol distillation is proposed by generating a temperature gradient on a miniaturized system of vacuum membrane distillation.

909



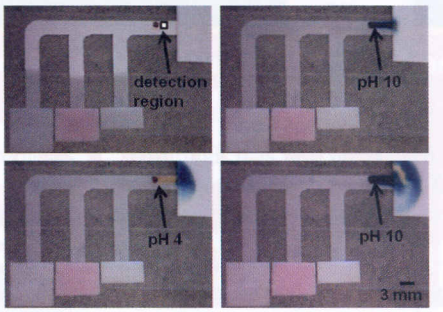
Wireless induction heating in a microfluidic device for cell lysis

Seung-ki Baek, Junghong Min and Jung-Hwan Park*

A wireless induction heating system in a microfluidic device was devised for cell lysis to achieve convenience, portability and economic efficiency by wireless operation, easy fabrication and disposability.

Controlled reagent transport in disposable 2D paper networks

Elain Fu,* Barry Lutz, Peter Kauffman and Paul Yager



Demonstration of programmed fluid delivery using a simple 2D paper network. The geometry of the network results in the sequential arrival of fluid from each of the three inlets, buffers of pH 10, 4 and 10 that produce a change in the color of the pH indicator in the "detection zone" from blue to yellow to blue.

AUTHOR INDEX

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