Lab on a Chip

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

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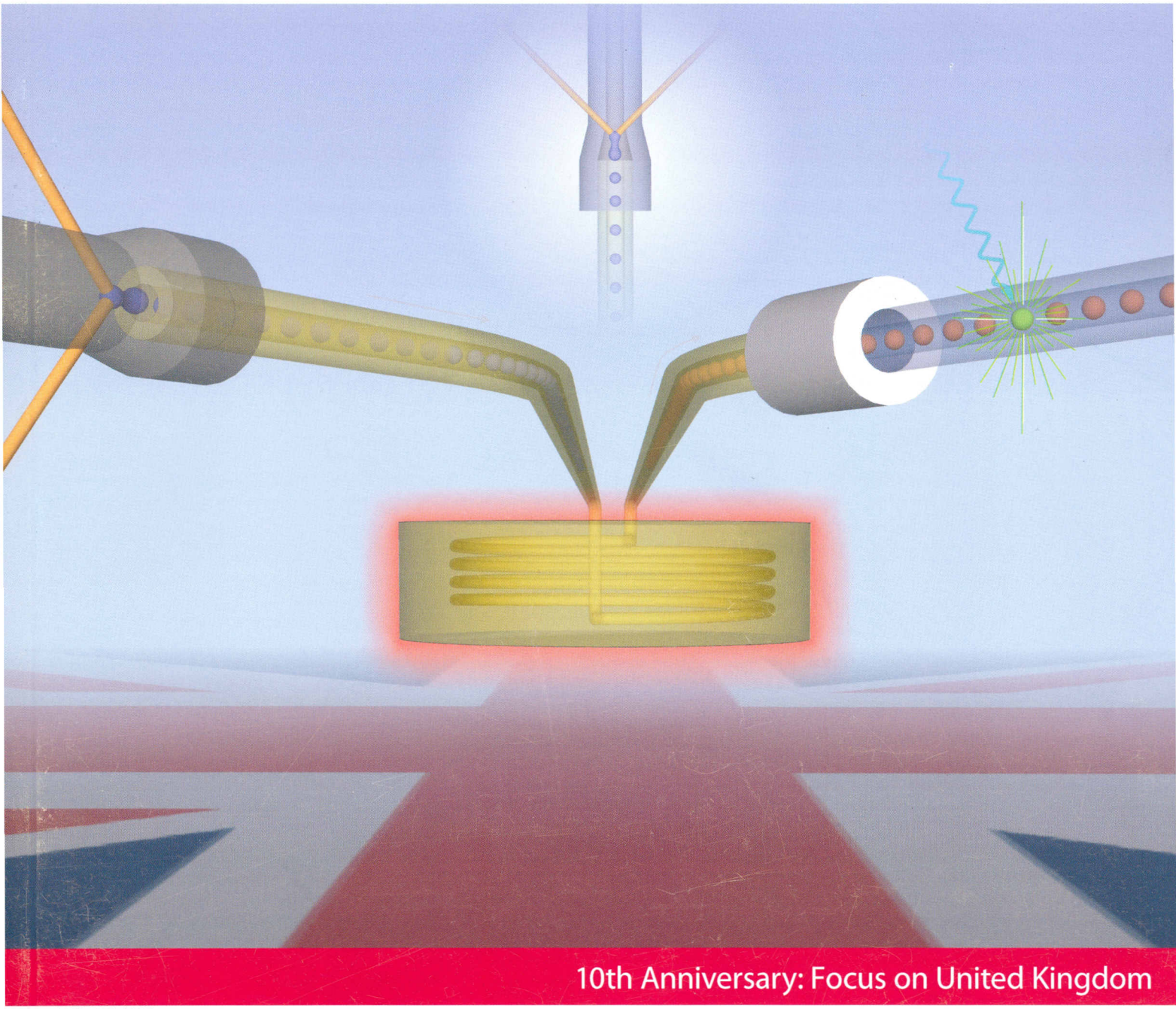

10th Anniversary: Focus on United Kingdom

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PAPER

deMello *et al.*

A stable droplet reactor for high temperature nanocrystal synthesis

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Cover
See deMello *et al.*, pp. 1221–1227.
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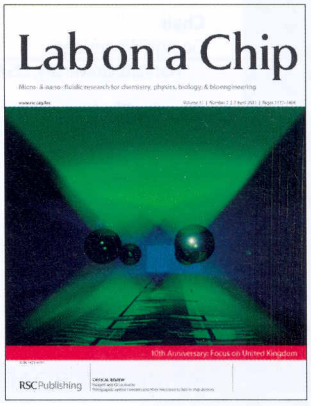

Inside cover
See Padgett and Di Leonardo, pp. 1196–1205.
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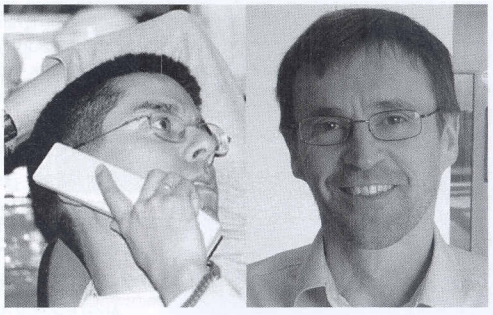
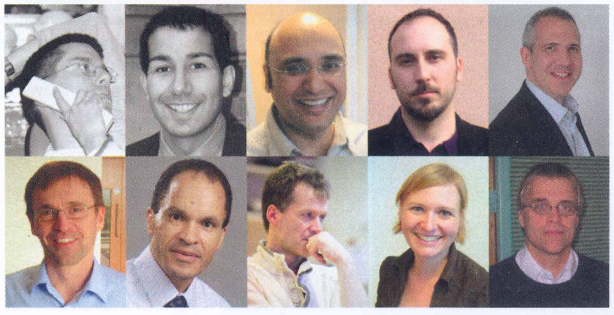
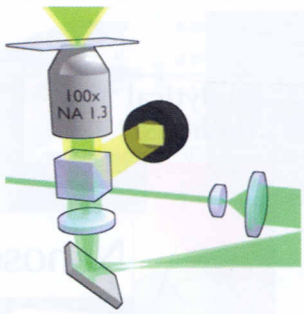
THEMED ISSUE: 10TH ANNIVERSARY FOCUS ON UNITED KINGDOM

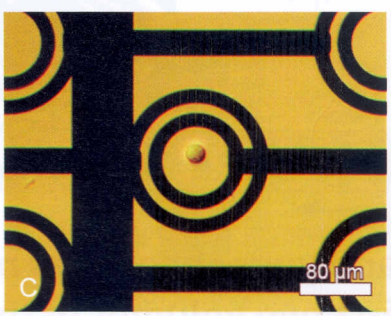
EDITORIAL

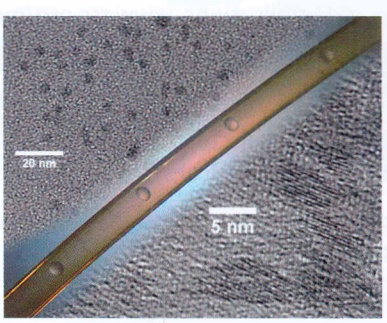


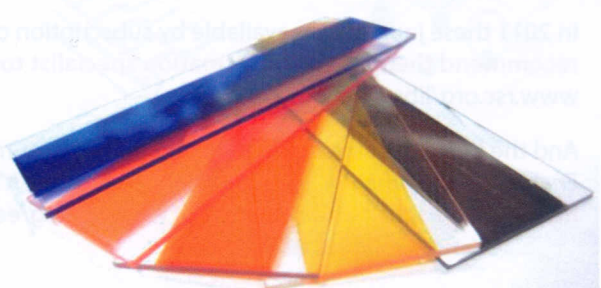
PROFILE

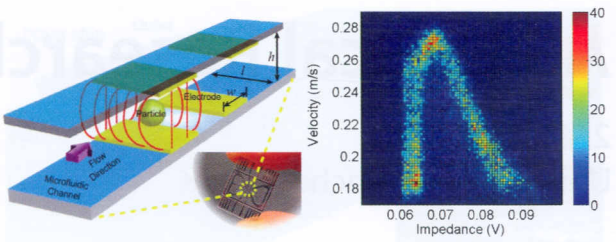


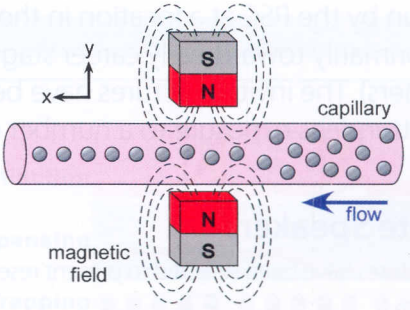


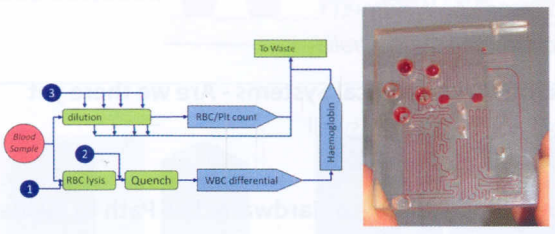


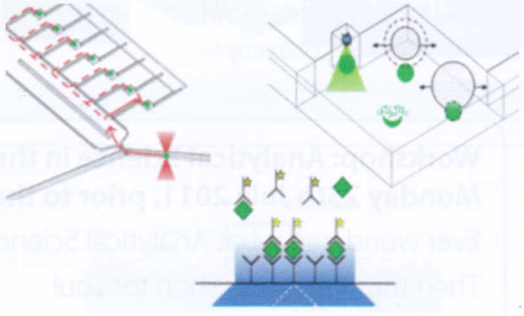










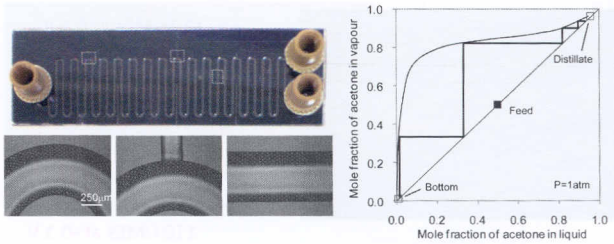


1311

Development of multistage distillation in a microfluidic chip

K. F. Lam, E. Cao, E. Sorensen and A. Gavriilidis*

Multistage microscale distillation chips were designed, fabricated and evaluated for the separation of acetone–water and methanol–toluene mixtures.

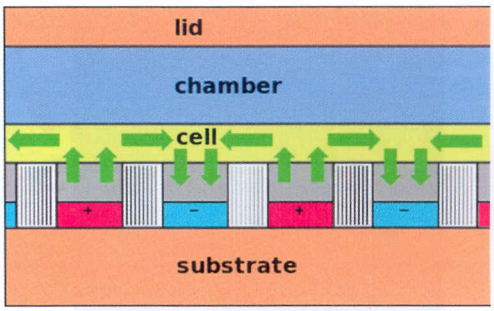


1318

3D numerical simulation of a lab-on-a-chip—increasing measurement sensitivity of interdigitated capacitors by passivation optimization

Christian Jungreuthmayer,* Gerald M. Birnbaumer, Juergen Zanghellini and Peter Ertl

A novel design of dielectric sensors is presented in this work, which offers a significant increase of the measurement sensitivity of LOCs.

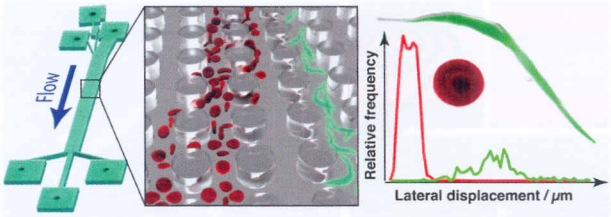


1326

Separation of parasites from human blood using deterministic lateral displacement

Stefan H. Holm, Jason P. Beech, Michael P. Barrett and Jonas O. Tegenfeldt*

We present the use of a modified deterministic lateral displacement device to separate living parasites from human blood. Trypanosomes cause human African trypanosomiasis (sleeping sickness) and finding parasites in a patient's blood is the only way at present to safely diagnose the disease.

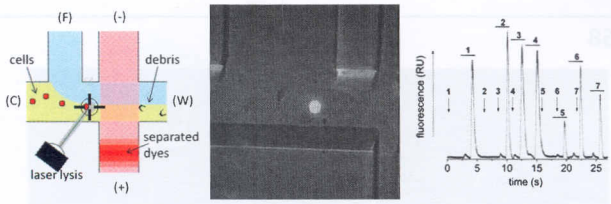


1333

Continuous analysis of dye-loaded, single cells on a microfluidic chip

K. Scott Phillips, Hsuan Hong Lai, Emily Johnson, Christopher E. Sims and Nancy L. Allbritton*

Continuous analysis of fluorescent dyes in single cells is achieved in a supported-membrane-coated, hybrid glass/PDMS microchip.

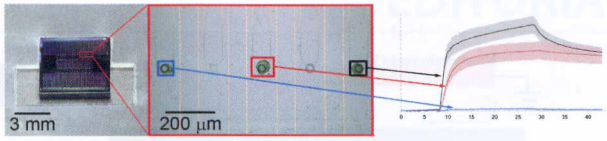


1372

Multiplexed inkjet functionalization of silicon photonic biosensors

James T. Kirk, Gina E. Fridley, Jeffrey W. Chamberlain, Elijah D. Christensen, Michael Hochberg and Daniel M. Ratner*

This work describes a rapid piezoelectric non-contact printing technique for the multiplexed functionalization of dense arrays of silicon photonic biosensors.

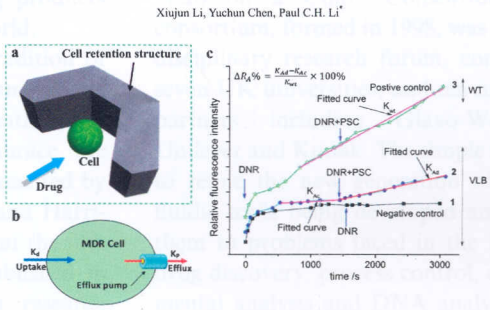


1378

A simple and fast microfluidic approach of same-single-cell analysis (SASCA) for the study of multidrug resistance modulation in cancer cells

XiuJun Li, Yuchun Chen and Paul C. H. Li*

To study multidrug resistance, a new microfluidic approach combined with the concept of 'same-single-cell analysis' (SASCA) has been developed by investigating drug accumulation in MDR cancer cells, with the advantages of simpler protocols, faster assay, and more 'identical' and reliable controls compared to previous methods.

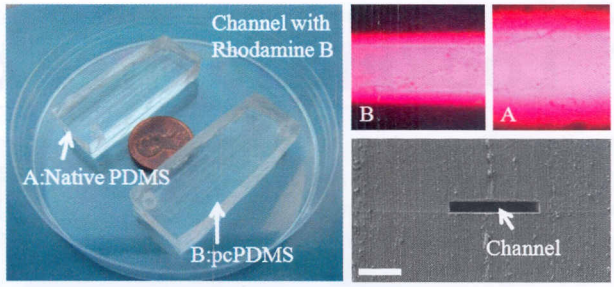


1385

Studies on Parylene C-caulked PDMS (pcPDMS) for low permeability required microfluidics applications

Yinhua Lei, Yaoping Liu, Wei Wang,* Wengang Wu and Zhihong Li

This note introduced a complete fabrication strategy of Parylene C-caulked PDMS (pcPDMS) for low permeability required microfluidics applications.

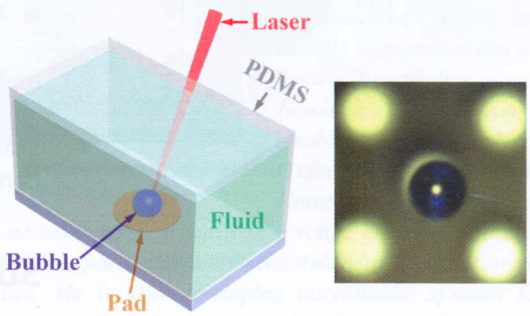


1389

Laser-induced thermal bubbles for microfluidic applications

Kai Zhang, Aoqun Jian, Xuming Zhang,* Yu Wang,* Zhaohui Li and Hwa-yaw Tam

We present a unique bubble generating technique in microfluidic chips using continuous-wave laser-induced heat, which allows the generation of bubbles at almost any location in the microchannel and thus enables microfluidic control at any point of interest.



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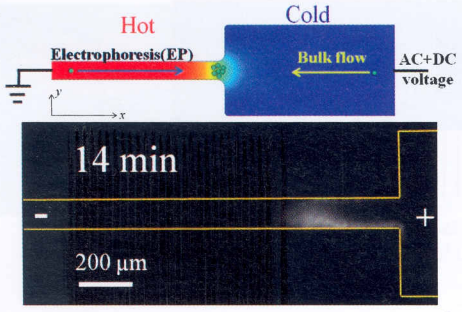

Towards high concentration enhancement of microfluidic temperature gradient focusing of sample solutes using combined AC and DC field induced Joule heating

Zhengwei Ge, Wei Wang and Chun Yang*

An improved electrokinetic technique for enhancing microfluidic temperature gradient focusing of sample solutes using combined AC and DC field induced Joule heating effects in PDMS microchannels.