Lab on a Chip

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

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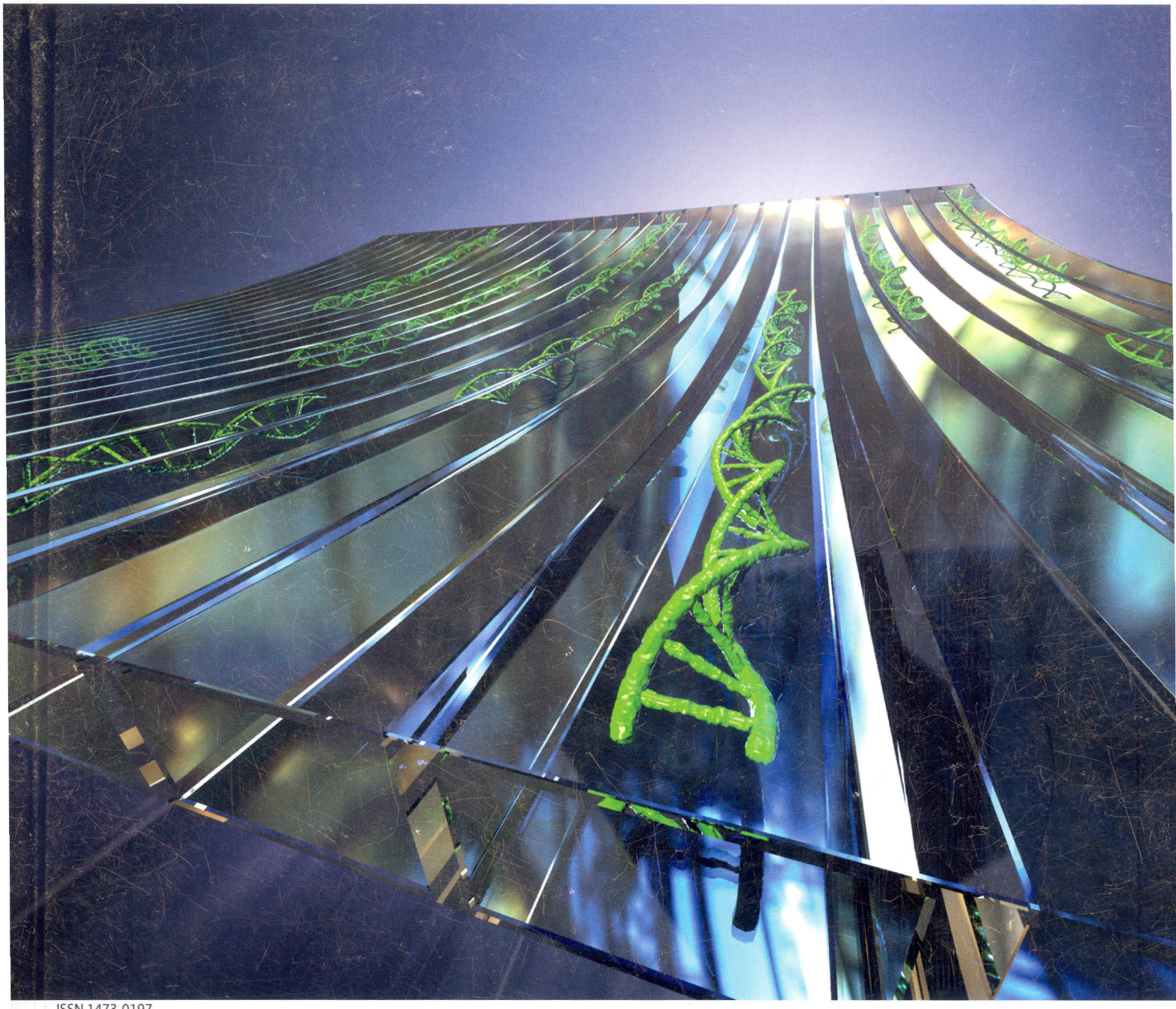

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PAPER

Jo et al.

Nanochannel confinement: DNA stretch approaching full contour length

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Cover
See Jo *et al.*, pp. 1721–1729.
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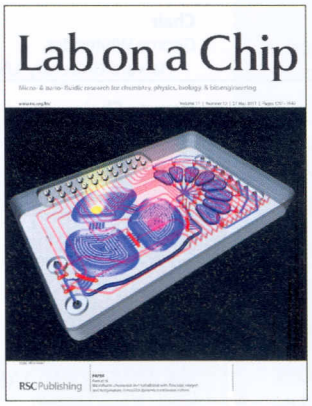

Inside cover
See Ram *et al.*, pp. 1730–1739.
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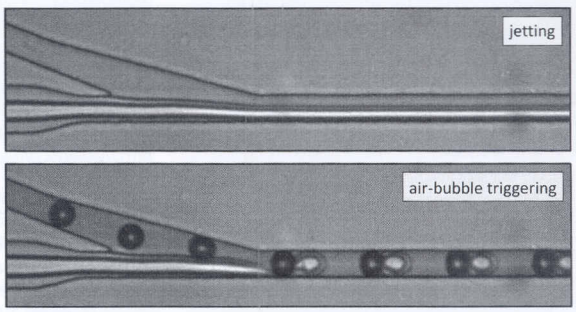
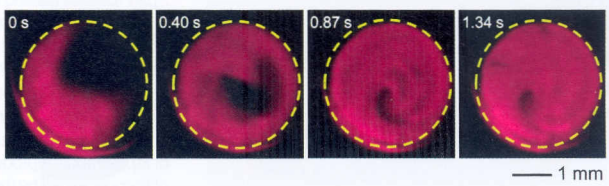
COMMUNICATIONS



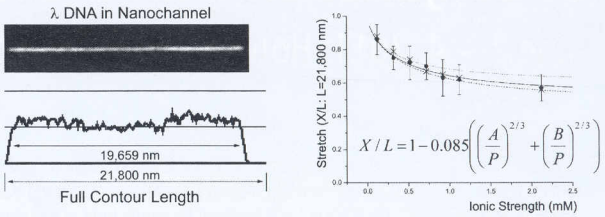


1721

Nanochannel confinement: DNA stretch approaching full contour length

Yoori Kim, Ki Seok Kim, Kristy L. Kounovsky, Rakwoo Chang, Gun Young Jung, Juan J. dePablo, Kyubong Jo* and David C. Schwartz*

This paper reports fully stretched DNA molecules confined in nanochannels. To validate Odijk's equation, we measure DNA elongation by varying ionic strength and channel dimensions with a Monte Carlo simulation. Collectively, we present a more complete understanding of nanochannel confined DNA stretching.

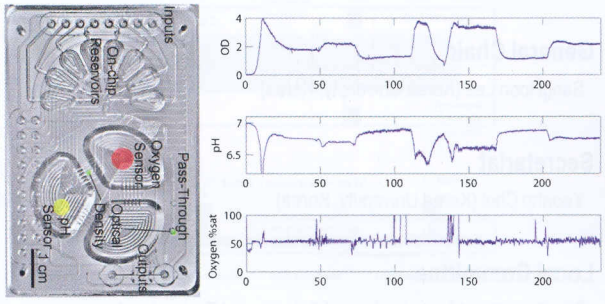


1730

Microfluidic chemostat and turbidostat with flow rate, oxygen, and temperature control for dynamic continuous culture

Kevin S. Lee, Paolo Boccazzi, Anthony J. Sinskey and Rajeev J. Ram*

We present a continuous cell culture device combining active microfluidics with large volume (1 mL) growth chambers. Integrated flow control, online sensors, and rapid offline sampling enable chemical analysis of multiple steady state and dynamic environmental conditions.

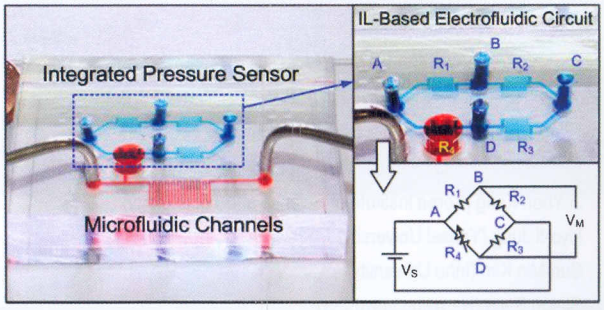


1740

Integrated ionic liquid-based electrofluidic circuits for pressure sensing within polydimethylsiloxane microfluidic systems

Chueh-Yu Wu, Wei-Hao Liao and Yi-Chung Tung*

This paper reports an ionic liquid-based electrofluidic pressure sensor that can be seamlessly integrated into PDMS microfluidic systems.

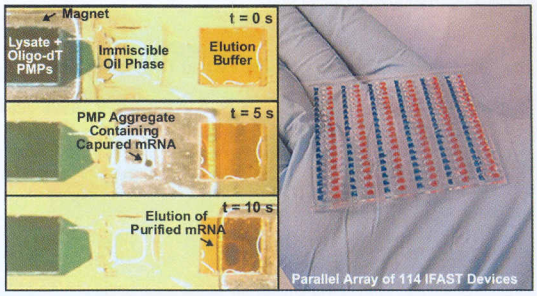


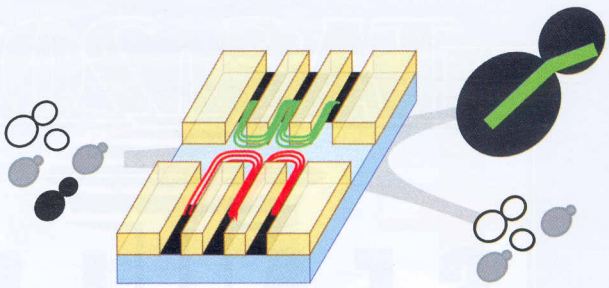
1747

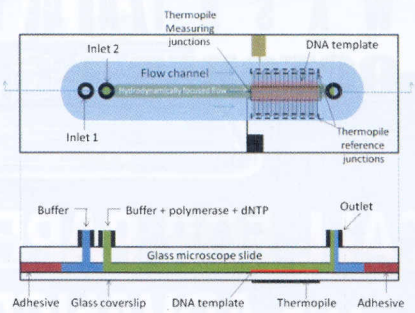
One-step purification of nucleic acid for gene expression analysis *via* Immiscible Filtration Assisted by Surface Tension (IFAST)

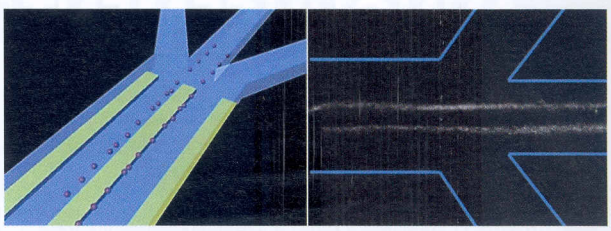
Scott M. Berry, Elaine T. Alarid and David J. Beebe*

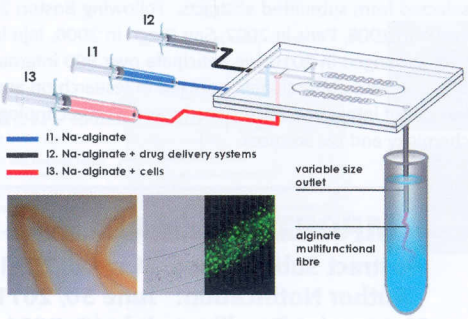
We utilize "pinned" aqueous/organic interfaces to streamline nucleic acid purification, such that NA from multiple samples can be isolated in parallel in less than 5 minutes without sacrificing performance.

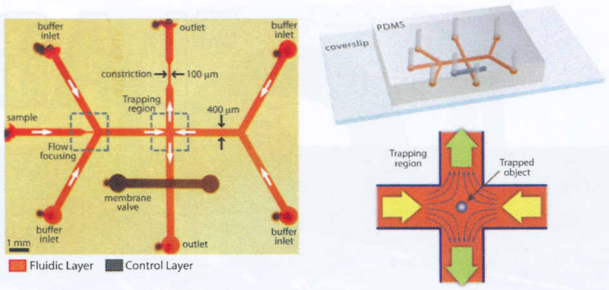


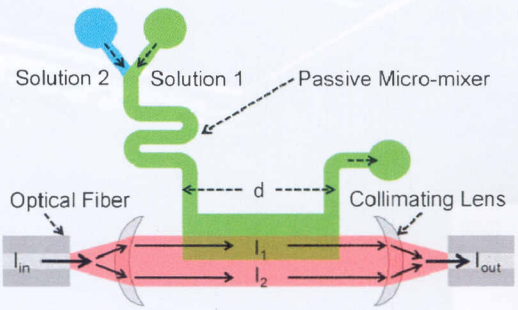


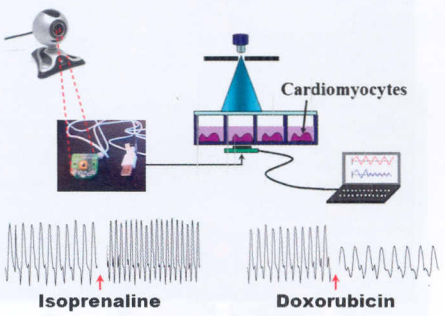


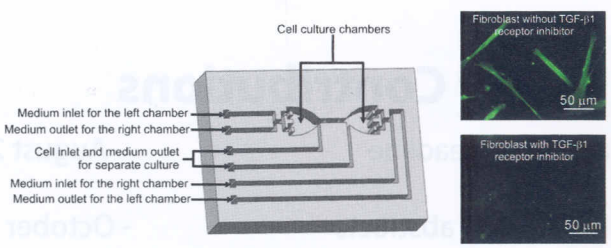












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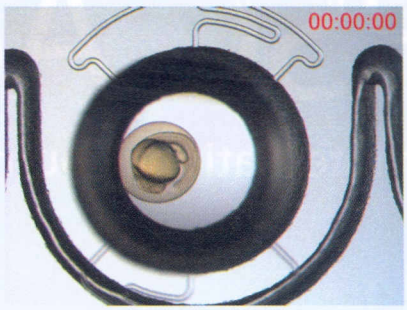

TECHNICAL NOTES