

Microfluidic Devices for Chemical Processing and Separations

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Microfabricated fluidic devices constructed on planar substrates can be advantageous for manipulating small sample volumes, rapidly processing materials, and integrating sample pretreatment and separation strategies. To carry out a complete assay, functional elements can be serially integrated on these devices with interconnecting channels having essentially zero dead volume. In addition, all fluidic manipulations in and between elements can be automated under computer control. The design, fabrication, and testing of microfabricated electrophoretic and chromatographic separation devices coupled with sample processing reactions will be presented.

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