Microfluidic "thin chips" for chemical separations

Gaspar A., Salgado M., Stevens S., Gomez F.A.

Department of Chemistry and Biochemistry, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032-8202, United States; Department of Inorganic and Analytical Chemistry, University of Debrecen, Debrecen, Hungary

Abstract: This paper describes the design, development and application of microfluidic "thin chips"; fabricated from PDMS. Thin chips consist of multiple layers of PDMS chemically bonded onto each other. Unlike thicker PDMS chips that suffer from lack of sensitivity due to PDMS absorption in the VIS and UV range, the thinness of these chips allows for the detection of chromophoric species within the microchannel via an external fiber optics detection system. C18-modified reversed-phase silica particles are packed into the microchannel using a temporary taper created by a magnetic valve and separations using both pressure- and electrochromatographic-driven methods are detailed.
Author Keywords: Electrochromatography; Microfluidic thin chips; PDMS; Reversed-phase silica particles

Year: 2010
Source title: Electrophoresis
Volume: 31
Issue: 15
Page : 2520-2525
Link: Scorpus Link
Document Type: Article
Source: Scopus
Authors with affiliations:

1. Gaspar, A., Department of Chemistry and Biochemistry, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032-8202, United States, Department of Inorganic and Analytical Chemistry, University of Debrecen, Debrecen, Hungary
2. Salgado, M., Department of Chemistry and Biochemistry, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032-8202, United States
3. Stevens, S., Department of Chemistry and Biochemistry, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032-8202, United States
4. Gomez, F.A., Department of Chemistry and Biochemistry, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032-8202, United States