

## Micro-flow analysis with monolithic columns

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### Abstract

Miniaturization in flow analysis can be done by several ways, one of them is Sequential Injection Chromatography (SIC), which use monolithic columns for separation processes and presently is already becoming well-established analytical technique.

Monolithic materials proved their role both as sorbents for solid phase extraction and chromatographic separation. These methods profit from large active surface (mesopores) and highly porous structure (macropores) of the monoliths. Although available commercially, significant benefit arises from ease of their preparation in laboratory. Numerous approaches can be used for preparation of monoliths leading to materials varying in active surface, porosity, chemistries, polymer properties, and size [1]. This flexibility results in extraction and separation sorbents including formats such as pipette tip for solid phase extraction (SPE), micro-

column SPE, well-plate SPE, and HPLC analytical and capillary columns that are finding applications in manual, semi-automated, and on-line methods [2]. Typical target samples include complex environmental and biological matrixes, as well as all kinds of inorganic and organic analytes including biomolecules. A broad range of micro-flow analysis methods have already been developed using monoliths [3].

Fundamentals, overview, trends, and perspectives of monoliths in micro-flow analysis will be discussed. An overview of several recent applications of the use of monolithic columns in micro-flow techniques will also be pointed out.

### Biography:

Petr Solich is working in Department of Analytical Chemistry, Charles University, Czech Republic.