

Mikroreaktori / Microreactors



Više informacija: Šalić, Tušek, Kurtanjek, Zelić, 2010: KUI, 59:227-248

Nowadays, microreactors are finding increasing application in many fields, from the chemical industry and biotechnology to the pharmaceutical industry and medicine. They offer many fundamental and practical advantages over classical macroreactors (large surface to volume ratio, excellent mass and heat transfer, shorter retention time, smaller amount of reagents, catalysts and waste products, laminar flow, effective mixing).

Microreactors consist of a network of microsized channels etched into solid substrate. Typical dimensions of microchannels are in the range from 10 μm to 500 μm . They are connected to a series of reservoirs for chemical reagents and products to form a complete device called "chip". Microreactors can be produced from glass, silicon, quartz, metals and polymers. Optimal material depends on chemical compatibility with solvents and reagents, costs and detection methods used in process control. The most commonly used material is glass since it is chemically inert and transparent.

One of the aims of today's research in the field of microtechnology is developing of so-called micro-total-analysis-systems. Such a device would perform sampling, sample preparation, detection and data processing in integrated manner.