

## Topic: Protein Technology

The handling of small but precisely determined volumes enables micro segmented-flow technique to become an excellent tool for handling of sensitive and expensive materials. So, this technique is best suited for handling of proteins for scientific as well as for medical, diagnostic or technical purposes.

Micro segmented flow technique was firstly applied for optimization of protein crystallization by the group of R.M. Ismagilov. This procedure improves the procedures of gaining larger protein crystals for X-ray analysis, which is essential for the determination of the three-dimensional geometries of the biomacromolecules.

The application of micro segmented flow suppresses the biofouling of microchannels caused by adsorbing macromolecules. The decoupling between the protein-containing process liquid inside the fluid segments and the channel walls by the inert carrier liquid leads to a strong improvement of the handling conditions of proteins inside microsystems. This is of particular interest for applications of proteins in enzymatic reactions, in antibody-based assays and in molecularbiological procedures.

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