

March 04-05, 2019
Berlin, Germany

Milos Netopilik, Int J Drug Dev & Res 2019, Volume 11
DOI: 10.21767/0975-9344-C1-005

Models of chromatography separation and their application for improving SEC resolution

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The effectivity of chromatography separation, i.e., resolution depends on construction of the chromatograph in the first place on the detectors cells volume and for polymer of given molecular weight, strongly on operational variables, as concentration and flow-rate. The effect of concentration is not important for polymers in theta solvents. However, the concentration effect is important for polymers in. The effective hydrodynamic volume of dissolved macromolecules decreases with increasing concentration. The spatial distribution of the analyte with respect to the longitudinal axis of the separation system, developing in time, can be approximated by the binomial distribution and the elution curve is obtained numerically from the spatial

distributions developing in time. The elution curve is then obtained by observing the developing spatial distribution in a fixed point representing the detectors. The concentration effect is observed as deviations from this model which can be calculated numerically.

Biography

Milos Netopilik has completed his PhD at Institute of Macromolecular Chemistry and Postdoctoral studies from Virginia Polytechnic Institute and Technical University. Now, he works in Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic and works in the theory of separation. He has published more than 68 papers in reputed journals.

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