

7. Results

The aim of my PhD. thesis was development of software tools for optimization of background electrolytes in electrophoresis, study of system peaks and general theory of electromigration. During my study I cooperated on the programming of the program PeakMaster 5 and I implemented theory of amplitudes to it (PeakMaster 5.2). The main subject of my work was development of the program Simul 5. During my study I added several new features, which significantly improved its capabilities and fields of applications.

Both programs are often used at many universities all over the world. Especially, program PeakMaster is very popular among wide range of users thanks to its fast calculation of pH with very good ionic strength correction.

Further, I cooperated on finding of some real systems, whose prediction was based on linearization of electromigration problem and properties of system peaks such as discovery of oscillating electrolytes, systems without stationary system zones (without regulation functions) or utilization of system peaks in micellar electrophoresis for determination of CMC of micelles.

... will be briefly reviewed in the following chapters.