Conclusions

- We have developed new method for CMC determination that is based on the measurements of system peaks eigenmobilites in capillary electrophoresis. The proposed method is more precise and eliminates specific systematic errors occurring when using some standard methods. The proposed method has been optimized considering intensities (amplitudes) of system peaks.

- The implementation of micelization process into simulation program PeakMaster enables the description of electromigration and prediction of the system peaks existence in micellar systems. Simulation programs currently allow users to calculate system eigenmobilites and even to optimize the micellar separation system. We have experimentally verified the theoretical prediction of extended simulation program PeakMaster as well as the hypothesis on CMC determination.

- We have clarified the mobilization of stationary system peaks due to the BGEs ionic strength, which causes splitting of system peak and EOF marker. As a consequence an additional peak has appeared in the electropherogram, which causes difficulties during experiment evaluation. The proper identification of both system and EOF marker peaks has been possible using the set of different detection wavelengths.

- Capillary zone electrophoresis has been used to reveal a structure and charge of nanoparticles in the recently synthesized bulky polymer micelles in different pH regions and to
characterize the effect of the PVP fraction added to PS-PMA on the final structure. Our results have confirmed that capillary zone electrophoresis is a suitable method for the structure characterization of copolymer micelles.

- LFER model has been used to compare three teicoplanin-based chiral stationary phases in four mobile phases. We have characterized the contribution of various interactions to the retention in the given separation systems and evaluated the influence of mobile phase composition on the participation of different interactions types in the retention mechanism. The obtained results can simplify the optimization procedure for separation of the enantiomers of interest.