9 Summary

This disertation thesis concerns about chemiluminiscence or fluorescence determination of pharmaceutical compounds by modern flow methods.

The theoretical part gives a recent overview of scientific knowledge about flow methods, chemiluminiscence reactions and the application of CL detection in the flow methods. The flow injection analysis, sequential injection analysis and multicommutation are mainly discussed. The next topic is focused on principles of luminiscence techniques, mainly chemiluminiscence and important chemiluminescence reactions. Papers dealing with automated chemiluminescence determination of pharmaceutical compounds by sequential and flow injection analysis published in years 2001-2006 were collected and analysed in a review article which was published in a scientific journal.

The experimental part may be devided into two issues. The first one deals with the proposal of original automated analytical SIA-CL methods. These methods can be applied either in quality control of pharmaceuticals (verapamil assay in tablets, indomethacin assay in ointment and gel and release test of semisolid dosage form containing salicylic acid) or can be utilized in routine measurement of environmental samples (chlorsulfuron assay in waters and soil extracts).

The second issue is focused on the study of possible enhancement of chemiluminescence yield of chemiluminescence reactions of verapamil and endralazine with permanganate or $[Ru(bipy)_3]^{3+}$ complex by suitable organic solvents. Positive effect on the CL enhancement and better repeatability of SIA-CI results was attained with mixed aqueous-organic media containing 2-propanol, 1,2-propanediol, 1,2-butanediol or dimetylformamide.