

ABSTRACT

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Title of diploma thesis: Sequential injection chromatography - testing of modern chromatographic columns for fast and effective separations

Following diploma theses is focused on method of optimized separation of three red azo-colorants (Carmoisine, Ponceau 4R, Red 2G) using Sequential injection chromatography system. During this method the spectrophotometric detection in VIS range was used with wavelengths of 380, 480, 500 and 600 nm. Column Chromolith[®] SpeedROD CN 50x4.6 was tested. First the separation with mixture of phosphoric acid and ammonium hydroxide pH 6 as a mobile phase was used. Unfortunately none of used concentration of mobile phase didn't separate all colorants. Carmoisine was eluted quite late. Therefore experiment was changed into gradient separation. Different concentrations of phosphoric acid and ammonium hydroxide based mobile phases were used. First mobile phase had concentration 0.06 % and second one had 0.01 %. This method enabled to separate all colorants in optimum time and quality. Calibration, reproducibility and yield were measured. As sample for comparison two syrups Malina light and Albert sirup černý rybíz were used.