

Thesis Title Development of Sequential Injection Analysis with Lab-on-Valve for Acidity Determination by Micro-titration

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ABSTRACT

Micro-titration for acidity determination using “Lab-on-Valve” (LOV) with sequential injection has been developed. It was based on acid-base titration. Standard/sample (citric acid), sodium hydroxide and indigo carmine indicator were aspirated in microliter volumes through a selection valve into a holding coil before moving into a detector. The change in intensity of the indicator color was monitored at wavelength 608.9 nm. In order to increase sensitivity, the air segment technique was used to improve efficiency of mixing process and to minimize dispersion of the stack zones. Citric acid was used as a standard so the acidity was expressed as citric acid content. A linear calibration graph covered a range of 0.0-1.2%(w/v) citric acid in 10%(w/v) sugar solution. Precision was found to be 1.2% RSD for 11 replicated injections of 0.6%(w/v) citric acid. The developed method was applied to determine acidity in fruit juice samples. The results obtained from the proposed method agreed with those obtained from the standard classical titration method.