Investigation of research papers published in the field of "Application of Bioluminescence and Chemiluminescence to Flow Injection Analysis"

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Abstract

Since the first report of the Flow Injection Analysis (FIA) system by J. Růžička and E.H. Hansen in 1975, situations in the fields of chemical analysis were drastically changed [1]. The chemical reaction control became able to be controlled accurately by the FIA technique, and the repetition reproducibility was improved and the high sensitivity analysis was realized. The chemiluminescence (CL) reaction, also known as blood stain identification, is efficient for qualitative analysis because it also efficiently emits light even for a small amount of analyte, but it is difficult to generate CL with good reproducibility in batch mode. In order to overcome the disadvantages of such a CL reaction, Rule and Seltz developed an analyzer in 1979 combining a CL reaction with the FIA system [2]. As a result, highly sensitive analysis of the substance to be measured by the CL reaction was realized. Since then, various types of CL-FIA methods have been developed. Furthermore, a bioluminescence-FIA (BL-FIA) method was developed by A. Nabi and P.J. Worsfold in 1986 [3]. In this method, bacterial luciferase was immobilized in the BL-FIA system. With the advent of the FIA method, analytical methods using the CL reaction and the BL reaction have been actively developed. In this presentation, history, current status, and future perspectives of the field of both CL-FIA and BL-FIA developments will explain.
References:

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