



Flow-based chemiluminescent methods for the environmental water analysis

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The growing presence of organic pollutants in environmental water, which have been proved to be highly toxic and harmful to human health, has become an important international issue. This has resulted in rapid development in the application of various analytical methods for water monitoring. Given the enormous efforts, constraining time and discontinuous operation associated with most of these methods, there exists an urgent interest in fast, simple, cost-effective and real-time techniques suited to water monitoring applications. For this purpose and combining with high sensitivity of optical detection, flow-based optical methods for the environmental water analysis has been widely studied in China. The National High-Tech Research and Development Program of China (863 Program) in the 10th and 11th two Five-Years period has initiated “The Development of Integrated Optical Techniques for the On Line Monitoring of Organic Pollutants in Sea Water” as one of its important projects in the Area of Resource & Environment Technology, aiming to design and fabricate automatic analysis instruments suited to ship carry and in situ monitoring. As one of the important optical detection method, flow injection chemiluminescent analysis was also accepted as grant support from this program. During the years, we had developed a serial of flow-based chemiluminescent methods for the determination

metal ions and organic compounds in water. This work not only obtained the grant support from 863 Program, but also it was my great honour being awarded the FIA Award for Science from the Japan Association for Flow Injection Analysis (JAFIA), the Division of the Japan Society for Analytical Chemistry (JSAC) in ICFIA 2008. I would like to take this opportunity to extend my personal thanks to Prof. Masaaki Yamada who had retired from Tokyo Metropolitan University few years ago for his support and help when I worked in his group. It was Prof. Yamada bring me to the way of flow injection chemiluminescent analysis. I am often proud of the experience worked with Prof. Yamada and published some papers with him. I also thank to Prof. Toshiyuki Hobo, my Ph.D supervisor; Prof. Shoji Motomizu, former President of JAFIA who had awarded me the FIA Award for Research Advances at 2000 for their greatly encouragement during I studied and worked in Japan from 1992 to 2002. FIA was developed by Professors Ruzicka and Hansen in 1975, 34 years have passed. However, comparing the history of other analytical chemistry methods, FIA is relatively young. Many new ideas, for examples, microfluidics and nano technology, have been combined into this technique. FIA made analysis easy and convenience, FIA will also make analysis much lower cost and more quickly.