

Derivatization-based LC-Fluorescence method: Achieving Versatile and Sensitive NO_x determination

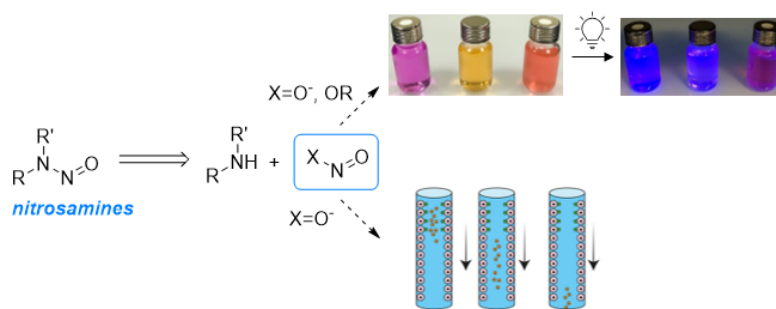
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Nitrosamines are suspected highly potent carcinogens which are formed when secondary amines react with nitrosating agents. Therefore, it is crucial to be able to identify nitrosating agent sources and to quantify them on trace levels.

Building upon the findings of Jo et al. [1], we have developed a derivatisation method coupled with fluorescence detection (FLD), enabling nitrite content determination as low as 1 ppb in pure water. Reached sensitivity ranges match the practical methodology limits, due to ubiquitous NO_x uptake during sample/reagent preparation.



This optimized method allowed us to measure nitrosating agent content in various water qualities ranging from water for injection to air conditioning condensation water. It also allowed us to quantify its NO_x uptake upon storage.

We have extended this systematic investigation to commonly used solvents and reagents, which allowed us to identify crucial sources of nitrosating agents as well as inadequate storage conditions for some consumables.

[1] Jo, *J. Org. Process Res. Dev.* **2023** 27 (10), 1820-1826