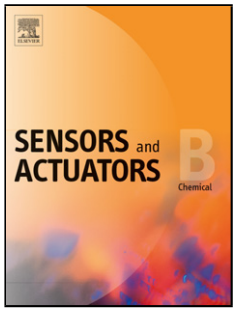

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Ammonia sensing with fluoroionophores - a promising way to minimize interferences caused by volatile amines

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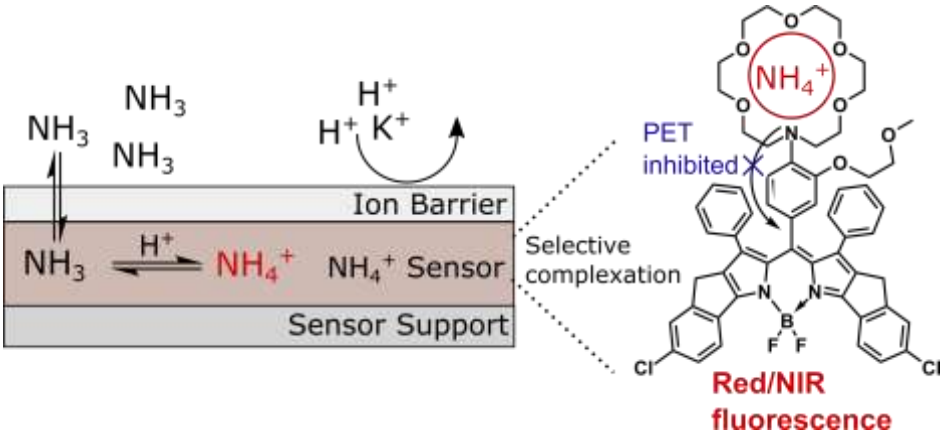
Graphical abstract



Abstract

A novel sensing concept for the selective detection of ammonia over amines is introduced. For the first time, the reversible fluorescence-based NH_3 sensor makes use of an ammonium-sensitive fluoroionophore instead of commonly utilized pH indicators. NH_3 diffuses into the sensor where a buffered internal electrolyte generates the corresponding ammonium ion, which is then detected by an ion selective NIR fluoroionophore.

Keywords: Photoinduced electron transfer; Ammonia; Fluorescence; Optical Sensor; Fluoroionophore