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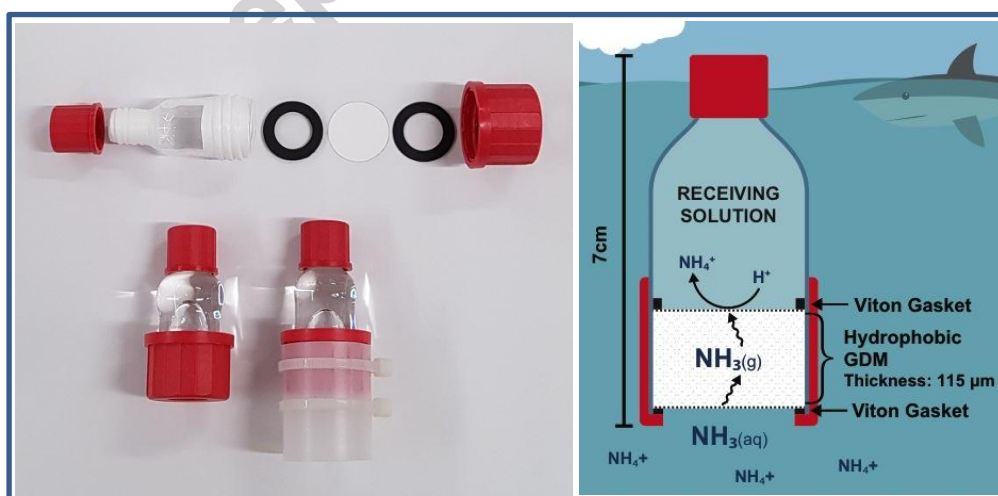
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### Abstract

A novel passive sampler based on gas-diffusion across a hydrophobic membrane is described for the determination of the time-weighted average concentration of dissolved molecular ammonia in high ionic strength aquatic environments, such as sea, coastal and estuarine waters, for a period of 3 days. The passive sampler developed is cheap, easy-to-use, reusable, and has a dynamic concentration range of 2.0 to 12  $\mu\text{M}$ , which covers the water quality guideline trigger value of 11.4  $\mu\text{M}$  ( $160 \mu\text{g L}^{-1} \text{NH}_3\text{-N}$ ) for high conservation value waters, making this a powerful new tool for water quality managers involved in long-term ammonia monitoring. The gas-diffusion-based passive sampler was calibrated under laboratory conditions and deployed in a tank of seawater in the laboratory and at an estuarine site for proof of concept, and a good agreement between passive and spot sampling was achieved in both cases.

Graphical abstract



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