Title:	Proton-Triggered Fluorescence Switching in Self-Exfoliated Ionic Covalent Organic Nanosheets for Applications in Selective Detection of Anions
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Abstract:	The exfoliation of covalent organic frameworks into covalent organic nanosheets (CONs) not only helps to reduce fluorescence turn-off phenomena but also provides well-exposed active sites for fast response and recovery for various applications. The present work is an example of rational designing of a structure constructed by condensing triaminoguanidinium chloride (TGCl), an intrinsic ionic linker, with a fluorophore, 2, 5-dimethoxyterephthalaldehyde (DA), to produce highly fluorescent self-exfoliable ionic CONs (DATGCl-iCONs). These fluorescent iCONs are able to sense fluoride ions selectively down to the ppb level via the fluorescence turn-off mechanism. A closer look at the quenching mechanism via NMR, zeta potential measurement, lifetime measurement, and density functional theory calculations reveals unique proton-triggered fluorescence switching behavior of newly synthesized DATGCl-iCONs.
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