

Showcasing research from Professor Wenqi "Vince" Liu laboratory, Department of Chemistry, University of South Florida, Tampa, United States.

Charge-assisted hydrogen bonding in a bicyclic amide cage: an effective approach to anion recognition and catalysis in water

We present a water-soluble hydrogen bonding cage with remarkable affinity and selectivity for highly hydrophilic anions such as sulfate and oxalate. Our molecular design strategy, utilizing charge-assisted hydrogen bonding in amide-based receptors, revalidates the critical role of hydrogen bonding for anion recognition in water. Additionally, we reveal a novel catalytic mechanism in which the cationic cage encapsulates anionic oxalate, reversing its charge and overcoming electrostatic repulsion to facilitate oxidation by permanganate.

As featured in:



See Wenqi Liu *et al., Chem. Sci.*, 2024, **15**, 16040.

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