**Alkyl SuFEx Click Hubs via Water-Accelerated Synergistic Organocatalysis**

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Along with the significant demand for sustainable homogeneous catalysis, the importance of efficient

synthesis and simple purification of complex organic compounds is attracting attention.1 In this presentation, a series of water-accelerated chemical transformations will be discussed. Firstly, unprecedented *N*-heterocyclic carbene (NHC)-catalyzed aza-Michael addition reaction is shown to access β-aminosulfonyl fluorides, which are key hubs of the sulfur(VI) fluoride exchange (SuFEx) reaction.2 In addition, new methods based on high-turnover catalytic Michael and thia-Michael addition reactions via significant hydrophobic amplification are displayed.3–5 Finally, the synergistic action of a hydrophobic Brønsted acid in combination with a hydrogen-bonding donor activator enabled the formation of the three-component Petasis-type allylation reaction.6 The developed exceptionally mild but potent catalytic systems facilitated a broad substrate scope, and enabled efficient multi-gram scalabilities. As a crucial reaction medium in all cases, water considerably augmented the reaction rate with excellent chemo- and site-selectivity (up to >99:1) compared to conventional organic solvents.



**References**

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