Utilizing Sodium Amides in Deep Eutectic Solvents

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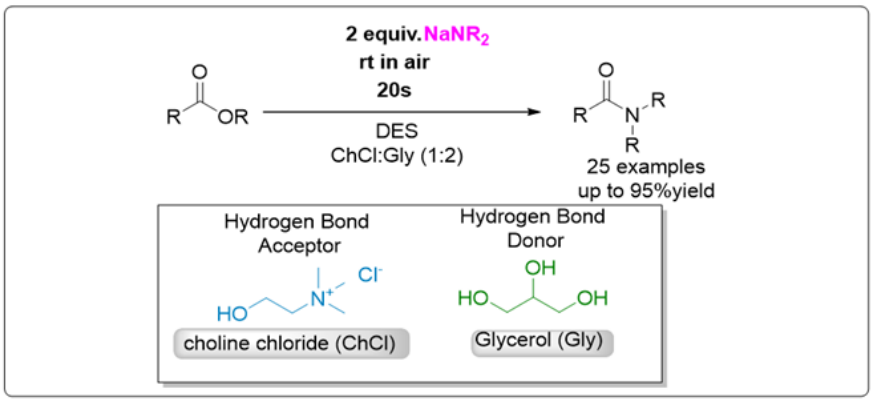
Sodium chemistry has received a recent renaissance due in part to its greater abundancy compared to lithium along with its ability to offer unique reactivity. Despite this renewed interest, organosodium reagents are highly reactive requiring strictly inert conditions as well as cryogenic temperatures (-78 °C) to prevent unwanted side reactions. Recent work from our group and others has shown that organolithium reagents and even organosodium reagents can be utilized in air by using Deep Eutectic Solvents (DES) [1]. Formed by the combination of a hydrogen bond acceptor (e.g. choline chloride) and hydrogen bond donor (e.g. glycerol), DES are recognized as inexpensive, environmentally friendly, and tunable solvents with growing applications [2].

This work will showcase how sodium amides can be used in DES for nucleophilic substitution reactions to esters and fluoroarenes. Building off recent work, we will also demonstrate how batch conditions can be upgraded to flow.[3]



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