



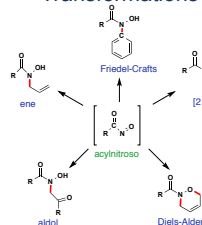
An Environmentally Friendly Procedure for the Synthesis of Nitrogen-Containing Molecules

Francisco J. Mancillas, Benjamin Newmeyer, Charles Frazier, Javier Read de Alaniz



Sustainable Reaction Design

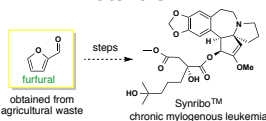
Design Novel Chemical Transformations



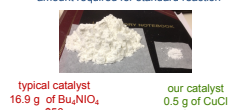
Use Environmentally Benign Reagents



Utilize Renewable Starting Materials

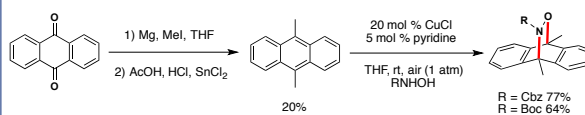


Minimize Waste Byproducts

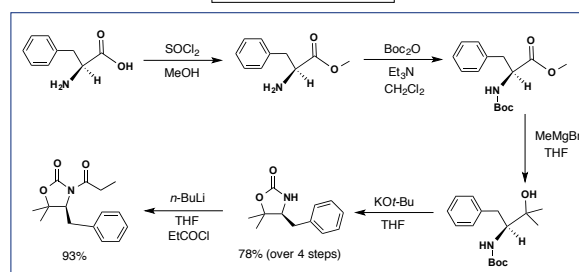


Synthesis of Starting Materials

9,10-Dimethylantracene

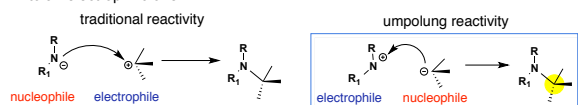


Evan's Chiral Auxiliary

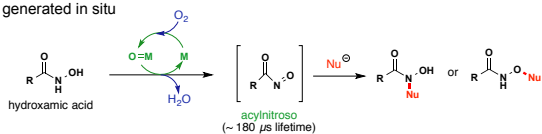


Nitroso Chemistry: A Novel Transformation

Our approach consists of inverting the classical nitrogen nucleophilic reactivity to an electrophilic one:



Acylnitroso intermediates are exceptionally good electrophiles and can only be generated in situ



Separation and Purification Techniques

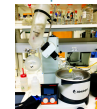
Diels-Alder reaction



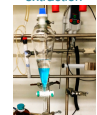
TLC



rotovaporation



extraction



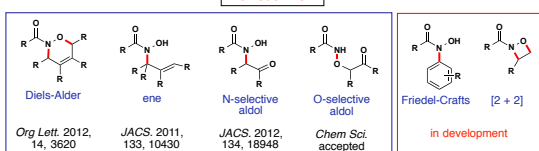
column chromatography



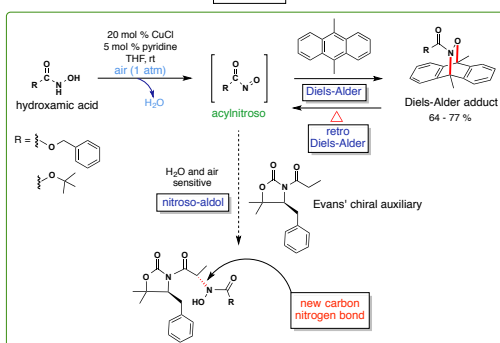
Results

In conclusion, we have developed mild reactions conditions (20% mol CuCl, 5 mol % pyridine, THF, air and room temperature) for the *in situ* formation of transient acylnitroso compounds, which were efficiently trapped using a hetero-Diels-Alder (HDA) reaction. Based on the ¹H-NMR and IR spectroscopy obtained from the HDA adducts, we concluded that the conversion of the HDA reaction run under the described mild reactions conditions is 100%. Furthermore, the HDA adducts were obtained in reasonable yields 64-77%. Further investigations are underway to explore the chemistry of the nitroso-aldol reaction.

Previous Work



This Work



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