Visible-Light-Mediated Formation of C–N Bonds

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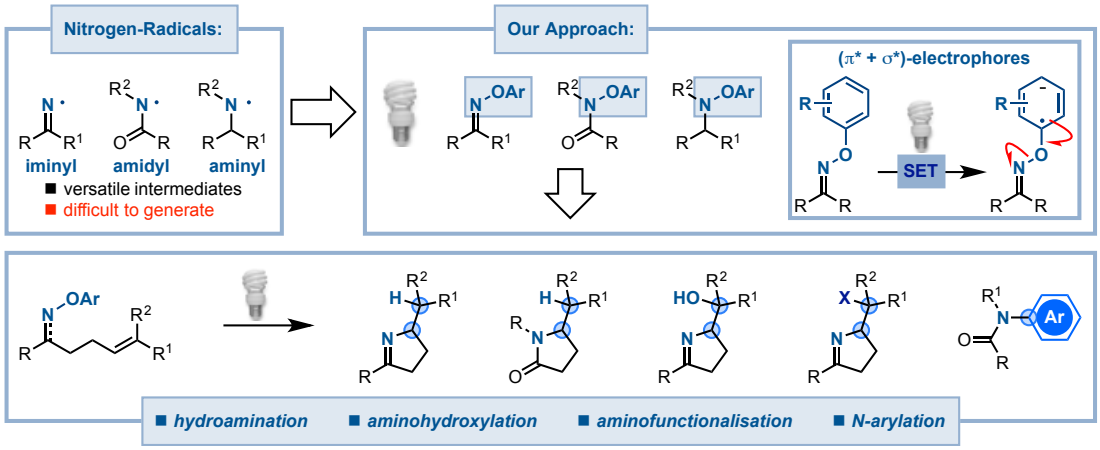
Nitrogen-containing compounds are a privileged class of molecules, which have applications in medicines, agrochemicals, dyes and materials.[1] As a result, the construction of C–N bonds is an extremely active area of research. Nitrogen-centered radicals are a versatile class of intermediates however, the difficulties associated with their generation have significantly thwarted their use in synthetic chemistry.[2]

We have accomplished the formation and use of iminyl,[3] amidyl[4] and aminyl[5] radicals in novel aminofunctionalization reactions through the design of a new class of reactive oximes, hydroxyamides and hydroxylamines. Owing to their redox properties, they could be successfully engaged in hydroamination, amino-fucntionalization and N-arylation reactions.



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