Photoinduced Generation of C–N Bonds

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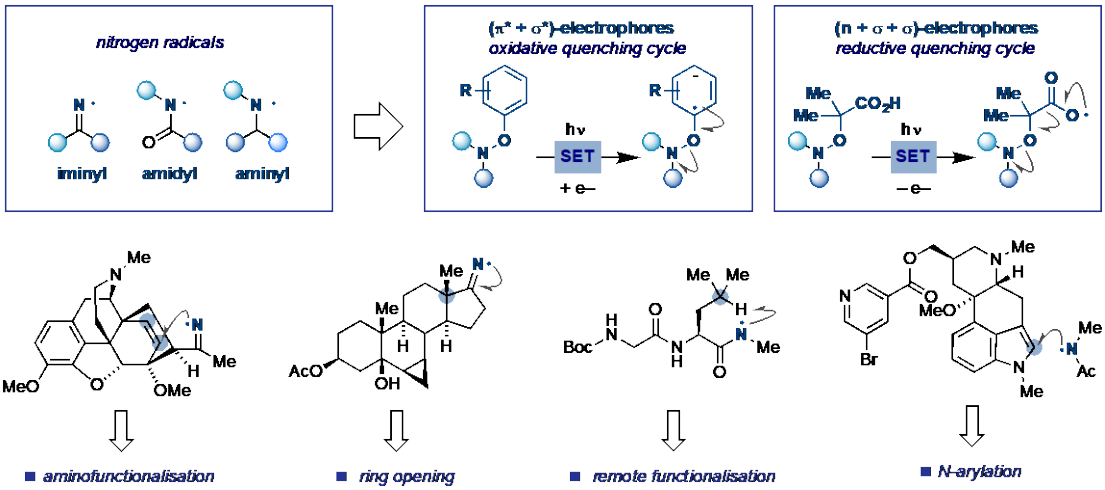
Nitrogen-containing molecules represent the structural basis of many medicines, agrochemicals, dyes and materials. As a result, the construction of C–N bonds is an extremely active area of research. Nitrogen-radicals are a versatile class of synthetic intermediates however, the difficulties associated with their generation have thwarted their use in chemistry.[1] We have developed two classes of hydroxylamine derivatives as N-radical precursors that can be activated upon photoinduced single electron transfer.[2] Owing to the nature of the electrophore installed on the O-atom both oxidative and reductive quenching cycles can be exploited. This has enabled aminofunctionalizations,[3] remote functionalizations[4] and *N*-arylation reactions.[5] The mechanistic aspects and the synthetic potential of these processes will be discussed.



References

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