

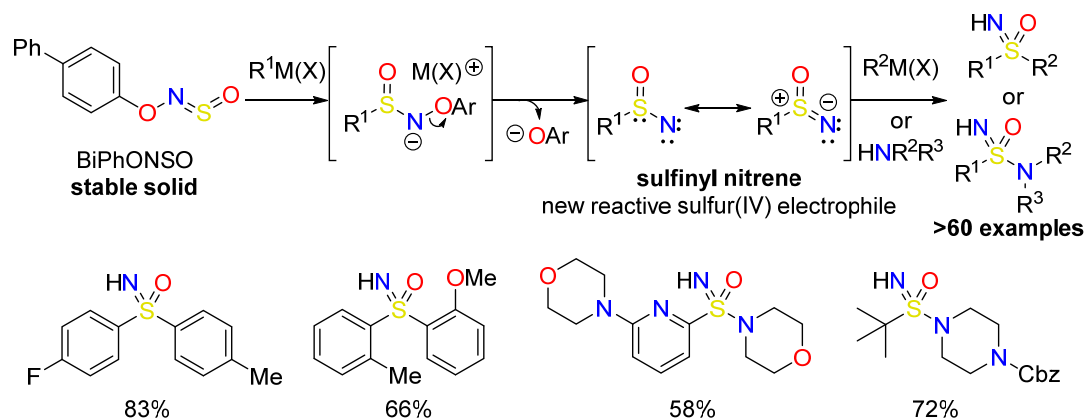
GENERATING AND EXPLOITING SULFINYL NITRENES

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Sulfinyl nitrenes are an anomalous class of nitrenes which are electrophilic at sulfur rather than nitrogen. They have appeared in only a handful of literature reports and have mainly been derived from explosive sulfinyl azides.[1] As such, their potential in organic synthesis has thus far remained unfulfilled. Following on from our work on the synthesis of sulfonimidamides from the sulfinylamine reagent TrNSO,[2] we report the facile generation of sulfinyl nitrenes from the novel reagent BiPhONSO and their subsequent reaction with carbon and nitrogen nucleophiles to afford sulfoximines and sulfonimidamides.[3] A broad range of (hetero)aryl, alkyl and alkenyl organometallic reagents, as well as primary, secondary and aromatic amines are compatible with the reaction. We will present experimental and computational evidence to support the intermediacy of sulfinyl nitrenes in our process.



[1] T. J. Maricich, V. L. Hoffman, *J. Am. Chem. Soc.* **1974**, *96*, 7770-7781.

[2] T. Q. Davies, A. Hall, M. C. Willis, *Angew. Chem. Int. Ed.* **2017**, *56*, 14937-14941.

[3] T. Q. Davies, M. J. Tilby, A. Hall, F. Duarte, M. C. Willis, *manuscript in preparation*.