

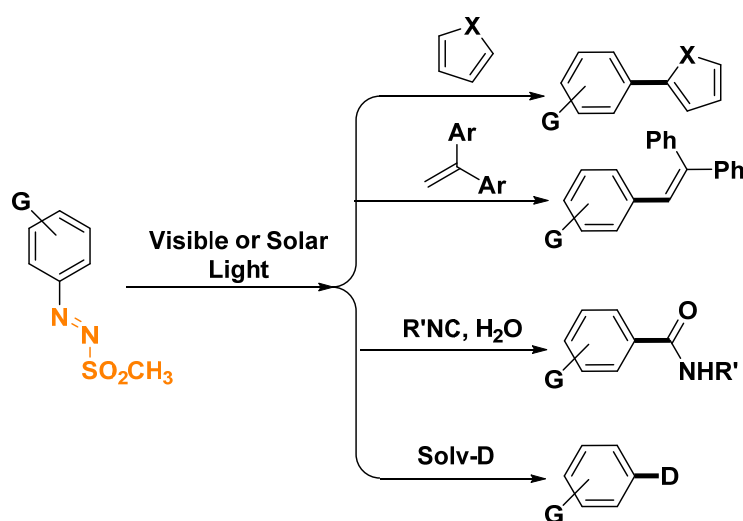
# ARYLAZO SULFONES: PHOTOACTIVATABLE SUBSTRATES FOR METAL-FREE ARYLATIONS

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Arylazo sulfones are bench-stable and smoothly prepared aromatic derivatives that bear a  $-N_2SO_2CH_3$  moiety (dubbed as *dyedauxiliary group*), able to impart both color and photoreactivity to the molecule. Such compounds can indeed generate aryl radicals (via homolytic cleavage of the N–S bond) and triplet aryl cations (in turn obtained via N–S bond heterolysis) in a wavelength-selective fashion, under irradiation with visible and UV light, respectively, whereas upon sunlight exposition both species are released [1]. In the last years we exploited the peculiar photoreactivity of arylazo sulfones in a wide range of synthetic protocols for the preparation of (hetero)biaryls [1], allyl- and vinyl-arenes [2], aromatic amides [3] as well as of deuterated aromatics [4] (see scheme below). Notably, most of the presented processes occur under metal- and photocatalyst-free conditions, and only visible (or solar) light is needed to activate the substrates.



[1] S. Crespi, S. Protti, M. Fagnoni, *J. Org. Chem.* **2016**, *81*, 9612

[2] L. Onuigbo, C. Raviola, A. Di Fonzo, S. Protti, M. Fagnoni, *Eur. J. Org. Chem.* **2018**, 5297

[3] M. Malacarne, S. Protti, M. Fagnoni, *Adv. Synth. Catal.* **2017**, *359*, 3826.

[4] H. I. M. Amin, C. Raviola, A. A. Amin, S. Protti, M. Fagnoni, *Submitted*.