Leave a light on. Photochemical arylation protocols.

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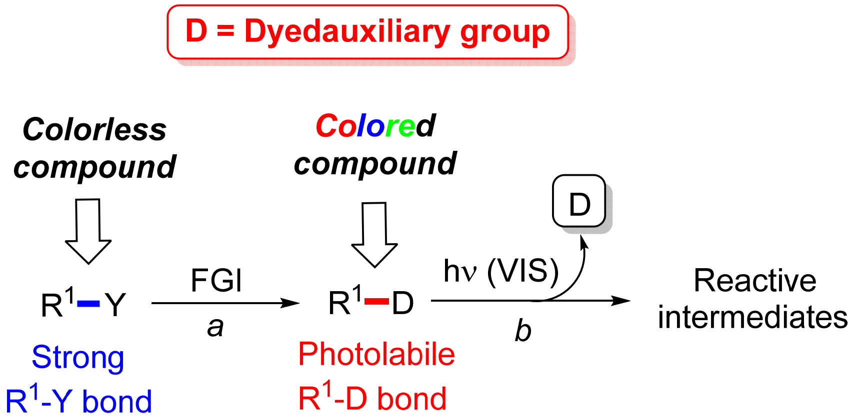
In recent years, solar/visible light promoted photochemical reactions have merged as an important tool to perform selective, efficient, and eco-sustainable procedures,[1] but, in most cases, the use of a photocatalyst able to absorb visible light and activate the (colorless) organic substrate is often required.

In this contest, the use of molecules bearing a dyedauxiliary group, that is a moiety able to impart both colour and photoreactivity, can be employed as precursors of high reactive intermediates (including carbon centered radicals) via visible light irradiation under (photo)catalyst-free conditions.[2] The strategy is llustrated in the scheme below.



Arylazo sulfones are a class of yellow to red bench stable derivatives of aryldiazonium salts that exhibit a wavelength selective reactivity and release an aryl radical intermediate upon visible-light exposition. Such behaviour has been exploited in recent years for the forging of various Ar–C and Ar–heteroatom bonds.[3]

[1] König, B., Walter de Gruyter GmbH & Co. KG: Berlin, 2013.

[2] D. Qiu, C. Lian, J. Mao, M. Fagnoni, S. Protti, *J. Org. Chem*. **2020**, *85*, 12813 – 12822.

[3] See for recent examples: L. Di Terlizzi, S. Scaringi, C. Raviola, R. Pedrazzani, M. Bandini, M. Fagnoni, S. Protti, *J. Org. Chem.* **2022**, *87*, 4863; Y Gao, S. Sparascio, L. Di Terlizzi, M. Serra, G. Yue, Y. Lu, M. Fagnoni, X. Zhao, S. Protti, *Adv. Synth. Cat.* **2023**, *365*, 1082-1087.