

Visible light-mediated synthesis of organophosphorus compounds: synthetic and mechanistic investigations

Sami Lakhdar

University of Caen Basse-Normandie, France

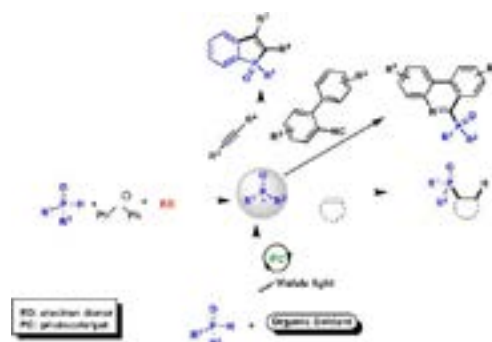
Reactions involving phosphorus centered radicals play a pivotal role in the construction of organophosphorus ligands, biologically active molecules and p- conjugated molecules. Common synthetic approaches for the generation of such radicals imply the use of harsh reaction conditions. In this communication, we show that access to a large variety of organophosphorus compounds can be achieved under mild reaction conditions through: i) visible light photoredox catalysis or ii) visible light irradiation of Electron-Donor-Acceptor complexes (EDA). The scope and limitations of these methods will be discussed with a special focus on their mechanistic aspects.

Recent Publications

1. D E C Corbridge (2013) Phosphorus: Chemistry, Biochemistry and Technology, 6th ed, CRC Press: Boca Raton, FL.
2. L D A Quin (2000) Guide to Organophosphorus Chemistry; Wiley Interscience: New York.
3. V Quint, F Morlet-Savary, J F Lohier, J Lalevée, A C Gaumont and S Lakhdar (2016) Metal-free, visible light-photocatalyzed synthesis of benzo[b] phosphole oxides: synthetic and mechanistic

investigations. Journal of American Chemical Society 138(23):7436–7441.

4. L Noël-Duchesneau, E Lagadic, F Morlet-Savary, J F Lohier, I Chataigner, M Breugst, J Lalevée, A C Gaumont and S Lakhdar (2016) Metal-free synthesis of 6-phosphorylated phenanthridines: synthetic and mechanistic insights. Organic Letters 18(22):5900–5903.
5. G Fausti, F Morlet-Savary, J Lalevée, A C Gaumont and S Lakhdar (2017) Chemistry- A European Journal 23:1–6.



Biography

Sami lakhdar is working as a professor at University of Caen Basse-Normandie, France. He has his research experience in the field of organic and inorganic chemistry

sami.lakhdar@ensicaen.fr

 Notes: