C(sp^2)-*H* & C(sp^3)-*H* Activation *via* Redox Neutral Photoredox Catalysis.

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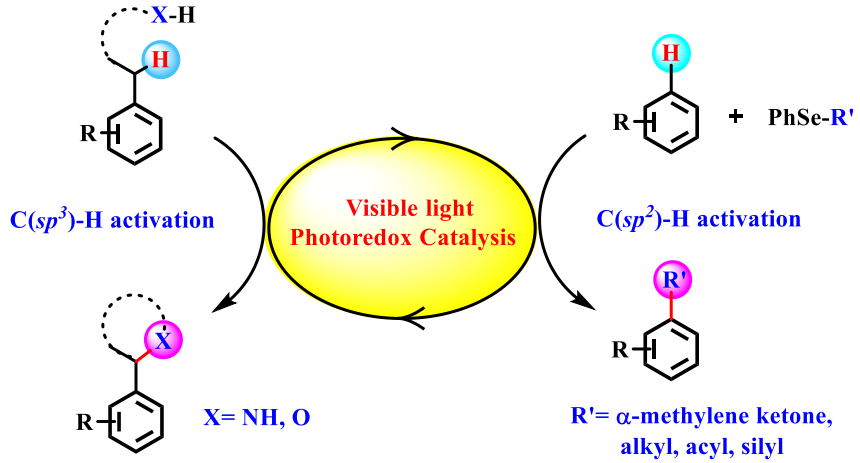
Abstract: Arene radical cation chemistry under visible-light photoredox catalysis has been explored to introduce various azole moieties directly at the benzylic position[1] as well as on arene ring[2] through C(sp^3)-H and C(sp^2)-H activation respectively. Furthermore, utilizing this chemistry, structurally diverse O/N-heterocycles including total synthesis of (–)-codonopsinine and (+)-centrolobine have also been achieved involving benzylic C(sp^3)-H functionalization.[3] In addition, we have developed an arylation strategy for different t-amines *via* γ- and α-C(sp^3)-H activation enabling coupling of γ- and α-amino alkyl radical with different aryl diazonium salt.[4] Photocatalytic α-arylation of ketone as well as alkylation, acylation and silylation of arenes *via* C(sp^2)-H functionalization have been achieved by the coupling of in situ generated R$^\bullet$ radical (R$^\bullet$ = α-methylene ketone, alkyl, acyl, silyl radical) with arene radical cation involving reductive activation of [PhSe–R].[5]

Figure/Scheme (if any):



References and Notes:

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2. Pandey*, G.; Singh, D; Laha, R. *Asian J. Org. Chem.* **2017**, *6*, 469 – 474.
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Bio-Sketch of Speaker

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Ganesh Pandey studied Chemistry at Banaras Hindu University, Varanasi, India. After completing his Ph. D. in 1980, he proceeded to Purdue University, U.S.A. for his post-doctoral studies in the group of Prof. Harry A. Morrison where he studied the photobiology of urocanic acid, the skin pigment. On returning to India in mid-1983, he first joined Panjab University, Chandigarh as a CSIR "Pool Officer" and within six months moved to Indian Institute of Chemical Technology, Hyderabad as a Scientist and continued there until July 1991. He moved again to National Chemical Laboratory, Pune in 1991 and continued there until February 2013.

He again moved as a Director of Centre of Biomedical Research, Lucknow in 2013 and continued there till February 2019.

His research interest continues in the area of the total synthesis of natural products, development of newer synthetic methodologies, asymmetric synthesis and radical-ion chemistry and drug discovery.

Dr. Pandey is recipient of some of the most prestigious prizes in India such as **Shanti Swarup Bhatnagar Prize,** J. C. Bose Fellowship, P. C. Ray Memorial award and Goyal Science Prize. He is the Fellow of all the three National Science Academies of India. He also served as **Editor of TETRAHEDRON** and an Editorial Board Member for ***Asian Journal of Organic Chemistry*** *and* ***Chinese Chemistry Letters.***