

# Charge Transfer mediated Metal-free Photoredox Catalysis

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Charge transfer complexes are a viable route to generate radical intermediates in the excited state through an electron transfer. These Intermediates can either be extracted to do photocatalysis<sup>1,2</sup> or can be channelized to generate a voltage in a photovoltaic device<sup>3,4</sup>. In catalysis, the main hurdle is to avoid the rapid back electron transfer that hampers the reactivity of Intermediates. Our lab has already established a catalytic scheme for generating reactive free radicals using a  $\text{Pd}_6\text{L}_4^{+12}$  octahedral supramolecule, allowing for desired product conversions<sup>3</sup>. Though highly selective, such a catalyst involves rare metals and is much less stable with different solvent conditions or substrates. With such a background in my talk, I will discuss the synthesis of a metal-free, much simpler, catalytically robust, and highly applicable acceptor molecule based on triazinium salts. Subsequently, the reactivity of substrates will be discussed with a deeper insight into the reaction mechanism and product selectivity.

## References-

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