

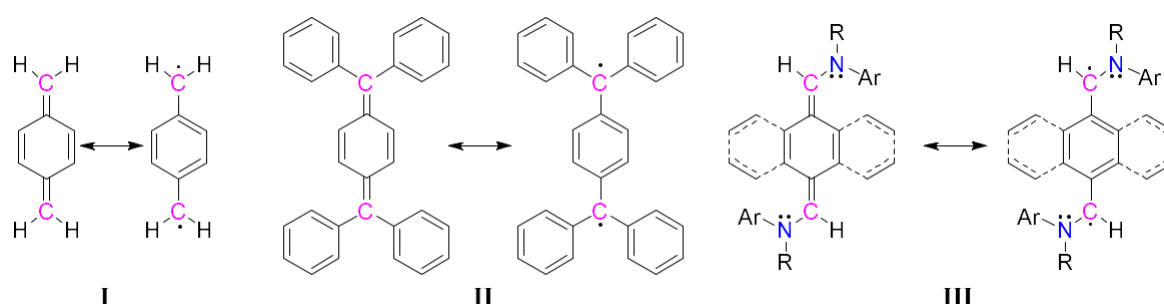
## Internal Webinar

### Synthesis of $\alpha,\alpha'$ -Diamino-p-Quinodimethanes with Three Stable Oxidation States: A Partially Hydrogen Substituted Thiele's Hydrocarbon

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p-Quinodimethane aka p-xylylene **I** is a very important intermediate in polyxylylene formation reaction.<sup>1</sup> But because of its diradical character it shows very high reactivity, only studied insitu by spectroscopic methods. Whereas its tetrasubstituted derivatives are quite stable and well studied which are known as Thiele's Hydrocarbon **II** families.<sup>2</sup> In spite of this, the chemistry of partially-substituted-p-quinodimethane derivatives have been studied scarcely. Thus in this project, we studied the synthesis and characterization of various derivatives  $\alpha, \alpha'$ -disubstituted-p-quinodimethanes **III** and its higher analogues so that this study will make a bridge between p-xylylene and its tetrasubstituted derivatives. These compounds exhibits stepwise electrochromism and we were able to isolate the crystalline compounds from all the corresponding three-oxidation states: neutral, radical-cation and dication.



#### Reference:

1. Para-Quinodimethanes: A Unified Review of the Quinoidal-Versus-Aromatic Competition and its Implications. Casado, J. *Top Curr Chem (Z)* (2017) 375: 73
2. Maiti, A.; Stubbe, J.; Neuman, N. I.; Kalita, P.; Duari, P.; Schulzke, C. Chandrasekhar, V.; Sarkar, B.; Jana, A. CAAC based Thiele and Schlenk hydrocarbon. *Angew. Chem. Int. Ed.* 2020, 59, 6729–6734.

**Friday, Jun 12<sup>th</sup> 2020**

**10:00 AM**