**Synthesis and Functionalization of Aza[5]phenacenes.**

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# Synthesis and Functionalization of Aza[5]phenacenes

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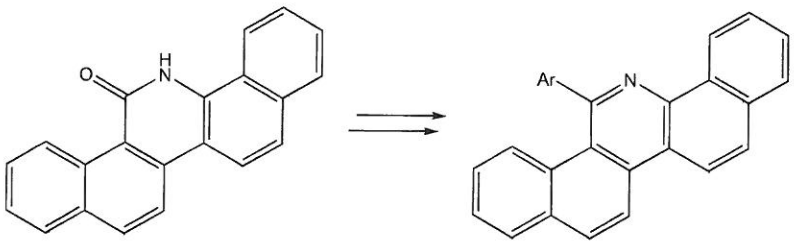
The study of organic electronics based on π-electron network molecules has made rapid progress in recent years. Phenacenes with their extended two-dimensional π-conjugated structure are suitable for this purpose as they can provide charge-transporting pathway when arranged into appropriated thin layer in solid state.[1]

This work is aimed at the development of new efficient methodology towards the synthesis of various aza[5]phenacenes with δ-lactam rings in its structures. Possibilities of functionalization or derivatization of [5]phenacene with δ-lactam ring are also discussed (Scheme 1). The resulting compounds are subsequently investigated in terms of their material properties, especially for the formation of the thin film structures capable of efficient semiconductivity. In addition, the complexation properties of suitable aza-derivatives as ligands with transition metals or lanthanides can be studied due to their potential application as photoluminescent complexes in OLEDs.[2]




Ar = phenyl, 2-pyridyl, 2-thienyl, 3-thienyl, etc.

Scheme 1. Functionalization of [5]phenacene with δ-lactam ring

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*References*

1. Pisula, W.; Feng, X.; Müllen, K. *Chem. Mater.* **2011**, *23*, 554.
2. Chi, Y.; Chou, P.-T. *Chem. Soc. Rev.* **2010**, 39, 638.