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## **Synthesis of Amidoazaphenacenes for Applications in Molecular Electronics.**

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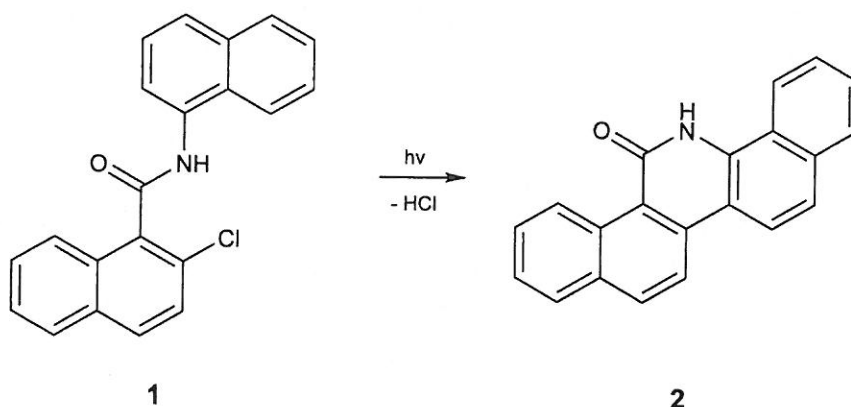
# Synthesis of Amidoazaphenacenes for Applications in Molecular Electronics

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Research and development in organic electronics (OLEDs, OFETs) based on  $\pi$ -electron network molecules has made rapid progress in recent years. Phenacenes with their extended two-dimensional  $\pi$ -conjugated structure are suitable for this purpose as they can provide a charge-transporting pathway when arranged into appropriate thin layer in solid state.<sup>1</sup>

This work is focused on preparation of amidoazaphenacenes (e. g. **2**, Scheme 1). Their amide functional groups can form hydrogen bonds which have a positive effect on the formation of a stable supramolecular structure to facilitate the charge carrier transport in thin solid film.<sup>2</sup>

Amidoazaphenacenes (e. g. **2**, Scheme 1) were prepared by photocyclization of various *ortho*-chloro-substituted aromatic amides (e. g. **1**, Scheme 1). This well-known methodology<sup>3</sup> has been used for cyclization of small molecules only and we have found it useful also for a preparation of large phenacene-like systems. The resulting compounds will be subsequently investigated in terms of their material properties, especially for the formation of the thin film structures capable of efficient semiconductivity. These findings will be utilized for the synthesis of other amidoazaphenacenes.



Scheme 1. Photocyclization of aromatic amide