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BOOK OF ABSTRACTS

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PO-40: Rh-Catalyzed Two-Fold C-H Activation of *N*-Arylpyrroles To Ullazine-Based Organic Photosensitizers

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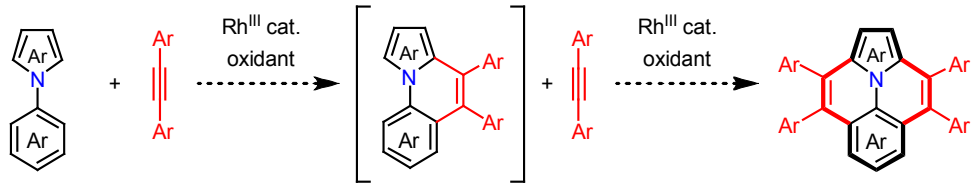
Transition-metal catalyzed C-H bond activation has proven to be a powerful synthethic methodology to access to polycyclic aromatic hydrocarbons (PAH's) from readily available starting materials.[1] Recently, we have described the synthesis of a novel class of *N*-doped cationic PAH's bearing the benzo[*c*,*d*]fluoranthene scaffold by double Rh(III)-catalyzed [4+2] oxidative annulation of 2-arylbenzimidazoles with alkynes.[2] We herein report the exploration of a new synthetic route to aza-cyclopenta[*c*,*d*]phenalenes (Ullazines) by Rh(III)-catalyzed two-fold C-H activation (double [4+2] oxidative annulation) of *N*-arylpyrroles with alkynes (Scheme 1). Ullazines possess a conjugated aromatic 16 electron π-system isoelectronic with pyrene which are useful building blocks for organic materials with important applications in dye-sensitized solar cells (Figure 1).[3]



Scheme 1. *Rh-catalyzed route to Ullazines*

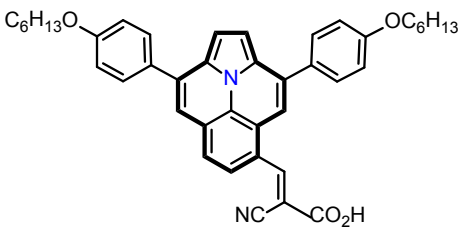


Figure 1. *Ullazine-based organic photosensitizers*

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