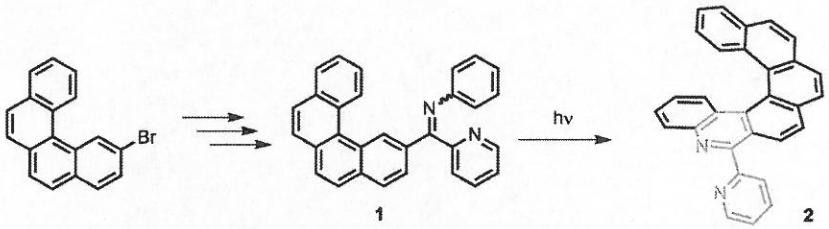
Photochemical Synthesis of Novel Bidentate Aromatic Ligands.

Kos, Martin
2016

Photochemical Synthesis of Novel Bidentate Aromatic Ligands

Student: Martin Kos
Supervisor: Dr. Vladimír Církva

Transition metal complexes bearing 2,2´-bipyridine ligands are widely utilized in many fields of research, particularly in photocatalysis [1] or as chromophors in dye-sensitized solar cells [2]. This work is focused on the synthesis of such ligands containing extended polyaromatic systems, mainly pyridyl-aza[n]helicenes and pyridyl-aza[n]phenacenes. The synthetic strategy is illustrated on preparation of 6-pyridyl-5-aza[6]helicene (**2**) (scheme 1). The imino specie **1** readily undergoes a photocyclization reaction in presence of Lewis acid to furnish the corresponding aza[6]helicene **2**. In this manner various aza[n]helicenes and aza[n]phenacenes were prepared. Synthesis of corresponding Ru(II) complexes is in progress in our laboratory.



1 2

Scheme 1

References

1. Teplý F. *Collect. Czech. Chem. Commun.* **2011**, *76*, 859.
2. Grätzel M., et al. *J. Am. Chem. Soc.* **1985**, *107*, 2988.