

Targeted Incorporation of Pyridine Nitrogen into Indolo[3,2,1-*jk*]carbazole

Birgit Meindl^a, Thomas Kader^a, Berthold Stöger^b, Paul Kautny^a, and Johannes Fröhlich^a

^aInstitute of Applied Synthetic Chemistry, TU Wien, Vienna (Austria)

^bX-Ray Centre, TU Wien, Vienna (Austria)

Indolo[3,2,1-*jk*]carbazole (ICz, Figure 1) was recently introduced in our research group as donor moiety in bipolar host materials for phosphorescent OLEDs. It was shown, that besides the donor properties, this molecule also holds weak acceptor properties, which can be increased by incorporation of pyridine nitrogen in the indolo[3,2,1-*jk*]carbazole scaffold (NICz, Figure 1). [1] [2]

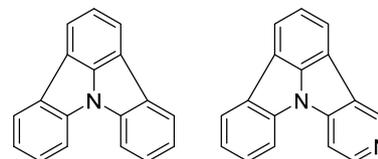


Figure 1: ICz (left), NICz (right)

The different positions of the nitrogen lead to electrochemical changes and also to different orientation and packing in the crystal structure because of non-classical C-H...N hydrogen bonds, which will be investigated in larger NICz based systems, like shown in Figure 2.

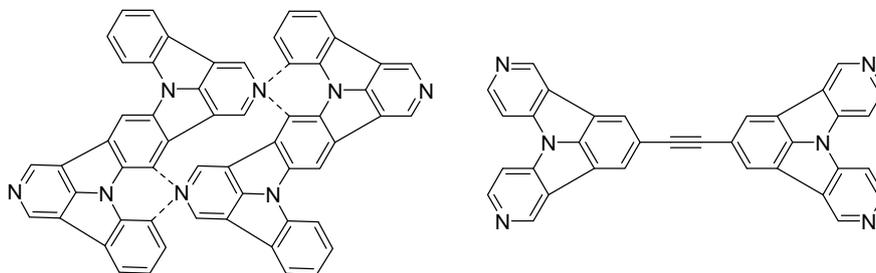


Figure 2: Examples of target molecules

Synthetic approaches towards these larger systems as well as results from characterization will be presented within this contribution.

[1] P. Kautny, D. Lumpi, Y. Wang, A. Tissot, J. Bintliger, E. Horkel, B. Stöger, C. Hametner, H. Hagemann, D. Ma, and J. Fröhlich, *J. Mater. Chem. C* 2, 2069. (2014).

[2] T. Kader, B. Stöger, J. Fröhlich, P. Kautny, *Chem. Eur. J.* 25, 4412. (2019).