Ambipolar phosphine derivatives to sensibilize Ln(III): synthesis and luminescent properties

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Different types of organic chromophores are used as "antenna" in order to sensibilize emission of Ln(III). Asymmetrical D-π-A type polar chromophores which contain O- or N-function in their structure for binding with the metal centre are new perspective class of "antenna" ligands.

Herein we report the design and synthesis of ambipolar phosphine oxides with unusual stereoelectronic properties (Fig. 1) and Ln(III) complexes based on them. Due to the strong π-conjugation, these ligands exhibit intensive singlet emission in the range of 400-550 nm[1] and seems to be effective "antenna" for NIR emissive Ln(III) complexes.

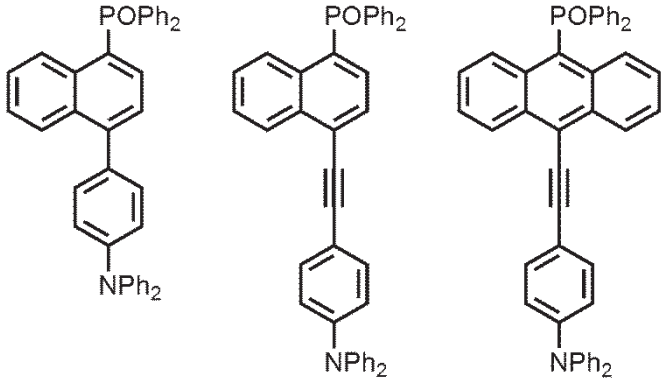

Figure 1. Ambipolar phosphine derivatives.

References:
[1] I. Kondrasenko, Zheng-Hua Tsai, Kun-you Chung, Yi-Ting Chen, Y.Yu. Ershova, A. Doménech-Carbó, Wen-Yi Hung, Pi-Tai Chou, A.J. Karttunen, and I.O. Koshevoy, *ACS Appl. Mater. Interfaces,* 8 (2016) 10968−10976

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