

Tripodal fluorophores with diazine acceptors at the periphery

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To date, a wide variety of push-pull chromophores have been designed and synthesized employing a diverse portfolio of D, π , and A moieties. A number and mutual arrangement of D, π , and A parts can be further evolved to form π -systems with unique shapes and octupolar character [1]. Among them, the tripodal D-(π -A)₃ chromophores based on the central triphenylamine (TPA) donor have a privileged position. Moreover, star-shaped TPA chromophores are well-known to bring expanded conjugation leading to enhancement of two-photon absorption (2PA) properties [2].

Among others, heteroaromatics possessing sp²-hybridized nitrogen atom(s) such as (di)azines represent very popular acceptor units in this field. It is well known that (di)azine-based chromophores exhibit a remarkable emissive and nonlinear optical response, which is reflected in the enhanced fluorescent and 2PA behavior [3]. Hence, we designed and synthesized a series of TPA-based tripodal fluorophores with peripheral diazine acceptors featuring exceptional optical properties (Fig. 1). This study can serve as a reliable systematic photophysical guide comparing the (non)linear optical response of particular diazine regioisomers.

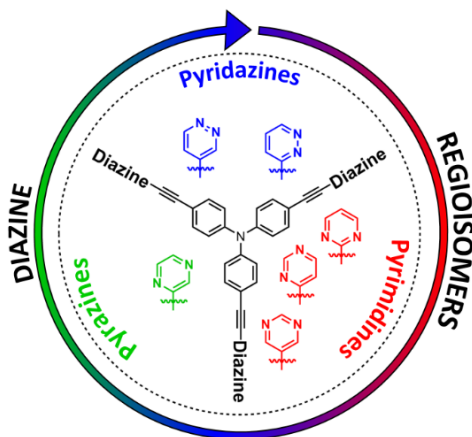


Figure 1. Tripodal triphenylamine-based fluorophores with attached electron-withdrawing diazine regioisomers.

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