Creating new electron-deficient types of functional dyes that are potentially useful as electron acceptors in solar cells

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We have developed synthetic protocols for the preparation of several classes of electron-deficient functional dyes that have a first reduction potential close to the traditional fullerenes. These include (i) functionalization of BODIPY core at *meso*-position; (ii) creation and functionalization of BOPHY platform; (iii) selective synthesis of 2-pyridone-BODIPYs; (iv) creation of electron-deficient "Manitoba Dipyrromethene" (MB-DIPY) chromophores and (v) discovery of hybrid β-isoindigo-aza-DIPY systems (Figure 1).

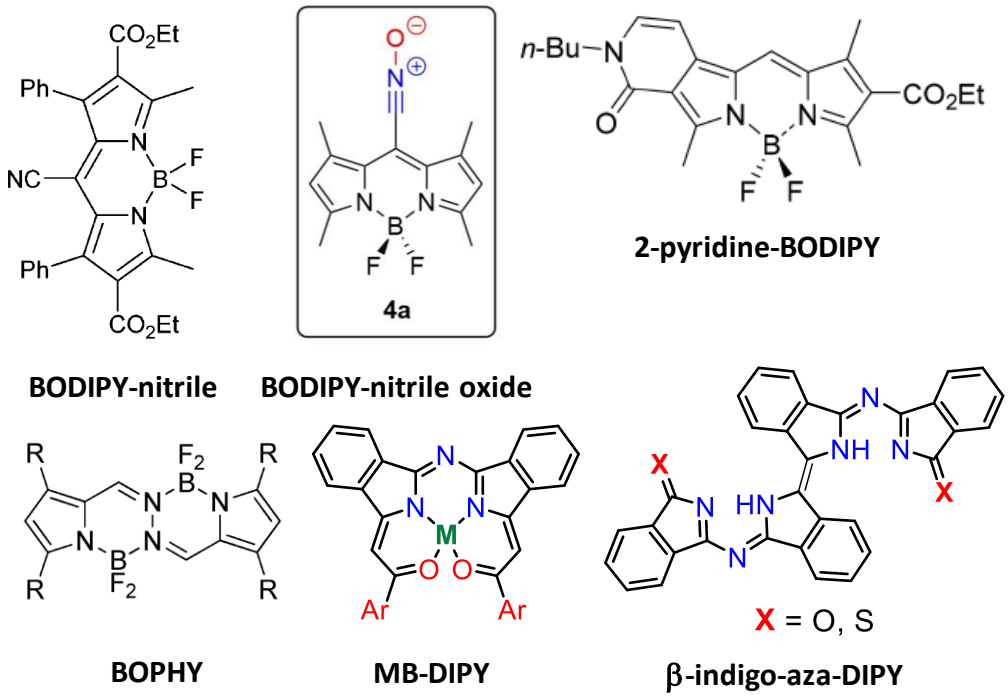

Figure 1. Representative examples of the functional dyes that will be discussed.