

BODIPY derivatives: synthesis and evaluation of their optical properties

Raquel C. R. Gonçalves, Mariana B. Nogueira, Susana P. G. Costa and M. Manuela M. Raposo*

Centre of Chemistry, University of Minho, Campus de Gualtar, 4710-057, Braga, Portugal

mfox@quimica.uminho.pt

3-Difluoroborodipyrromethene, commonly known as BODIPY has been used in many innovative applications such as biological fluorescent labelling, electroluminescent devices, tunable laser dyes, components for solid state solar cells, photodynamic therapy and optical sensors (fluorimetric or colorimetric). The numerous desirable properties of BODIPY explain its growing success over recent years. It is endowed with chemical, structural and photochemical stability, both in solution and in solid state. Furthermore, it possesses a high coefficient of molar absorptivity, high quantum yield of fluorescence, negligible triplet formation and narrow band emission with high intensity peaks. Furthermore, its photophysical properties can be tuned/improved introducing groups at suitable positions in the BODIPY core.

In continuation of the work developed in our research group, we report in this communication the synthesis, characterization and evaluation of the optical properties of BODIPY derivatives having in mind their potential application as novel chromofluorogenic sensors and/or fluorescent probes for the detection of molecules, cations and anions with biological and medicinal relevance.

Acknowledgements: Thank are due to *Fundação para a Ciência e Tecnologia* (Portugal) and FEDER-COMPETE for financial support through Centro de Química (UID/ QUI/0686/2016). The NMR spectrometer Bruker Avance III 400 is part of the National NMR Network and was purchased within the framework of the National Program for Scientific Re-equipment, contract REDE/1517/RMN/2005 with funds from POCI 2010 (FEDER) and FCT.