

Spin dynamics in covalently linked radical ion pairs

Research advisor: Jerzy Karpiuk, DSc, Eng, jkarpiuk@ifpan.edu.pl

Why birds are able to sense the Earth's magnetic field? What is the role of light in the process? While these questions still remain to be answered, it is accepted that the interaction of radical ion pairs with magnetic field forms most likely the basis of magnetoreception mechanism. Though the spin change in such pairs is also of fundamental importance in photosynthesis, photoinduced charge separation or light generation in OLEDs, the effect of structural factors is poorly understood. The proposed PhD dissertation will address intersystem crossing processes in photoinduced intramolecular electron transfer and will be focused on the effect of molecular structure on the spin dynamics. The molecules to be studied are synthesised in our Group and their photophysics will be studied in a state-of-the-art spectroscopy laboratory.