

White luminescence of organic molecule as a function of its structure

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Substances emitting white light are of great practical importance, yet obtaining such materials requires using and balancing luminescence from two or more excited states of a molecule. A method of white light generation used in white fluorophores discovered in our group is to combine emission from a locally excited state and a product of adiabatic process, e.g., excited state electron or proton transfer. The proposed PhD dissertation will be focused on experimental studies of photophysics of such molecules, and in particular on investigation of the structure effect on radiationless processes reducing the quantum yield of white emission, as well as will attempt to reduce the efficiency of these processes. The molecules are synthesised in our chemical laboratory and are studied in a state-of-the-art optical spectroscopy laboratory.