

The aim of this thesis is to offer a brief overview of energetic transfer taking place in photosynthetic antenna systems by studying an example antenna and trying to simulate its behavior. Utilising modern literature, we describe the structure of photosynthetic antenna systems, their properties and the methods used to study them. We follow this by proposing a model of the kinetics of energetic states in the studied system. The theoretical section is followed by analysis of measured absorption and fluorescence excitation spectra of the actual chlorophyll + carotenoid dimers with use of OriginPro2020 and Python3. With this knowledge, we have developed a simulation to fit our model to the experimental values. We utilize the Quantarhei Python3 package to calculate the absorption spectra and the FES spectrum is constructed by solving a system of differential equations proposed from the kinetics model and fitting the measured data. From there, we extract the efficiency of energy transfer in the dimer.