The modern science faces serious challenges which soon or later will significantly influence a further progress of civilization, but in some examples even the sustain of the current level will be a challenge. The scientific research remains an important aspect of every society which is thinking about itself as a modern. Thanking to the research we can currently use uncountable number of appliances which will be unavailable without a time consuming fundamental studies, which broaden our knowledge about e.g. absorption and emission of light crucial for formation of organic light emitting diods, a key information that allowed a fabrication of contemporary screens widely used in tv receivers or smartphones. Such actions, on the first glance absolutely purposeless research on the emission recorded for chemical substance, led to the whole family of organic compounds emitting the light in different colours. The synthesis of those compounds followed a detailed description of a behaviour have been done during just the fundamental studies whose the main goal is far away from a direct applicability. Such research broadens our knowledge about the whole range of chemical processes but also can be used for extending the knowledge on biological processes. The both mentioned aspects are in the focus of presented research proposal which takes its fundament from the idea of effective and controllable linking of two structural motifs. The first one, let's call it a macrocycle or a porphyrinoid, is a substance that very efficiently absorbs the visible light (e.g. the sunlight), but also can effectively emit a part of the absorbed light in different colours (and the energy). Such behaviour of porphyrinioids results in a popularity of those structural motifs that can be find in many scientific fields broadly defined as material science. The second element of planned structures, let's name it a peptide, can be treated as scaffold which can be modified and decorated with several „colourful" macrocycles allowing an exploration of an influence of spatial orientation on the quality of emitted energy. Peptides themselves are very important chemical compounds as they are fundamental molecules that form proteins – very complicated structures responsible in every leaving organism for e.g. a resistance to illnesses or nerve signal transduction. The proteins and peptides are built from smaller bricks known as amino acids. The peptides are responsible for many biological processes which are strongly dependent on the order and the quality of involved amino acids what creates a specific sequence. The sequence determines observed behaviour leading to organization which can be controlled by an interaction with the environment (. Nowadays peptides are synthesized in chemical labs and the order of involved bricks (the sequence of peptide) can be freely modified what leads to extending of our knowledge about proteins, but also allows to introduce controlled and planned changes in naturally occurring or artificial sequences. It is expected that a combination of a proper macrocycle with a precisely planned peptide sequence allows to expect key changes in the quality of emitted light, but also in the behaviour of amino acid chain which is a fundament for determining the optical properties, i.e. where the emission occurs and how efficient the process actually is? Thus the main goal of this project is to obtain a new class of unique structures linking in one structural motif a porphyrinoid and properly designed and crafted peptide chain. The properly designed and defined spatial structure of peptide allows a determination of an influence on the macrocycle optical properties being a result of an interaction between porphyrinoids. As the two way stimulus is predicted the influence of the macrocycle on the dynamic behaviour of the peptide chain will be also determined. The two macrocyclic motifs - tetraphyrin and triphyrin – properly joined with an amino acid create a new structural brick applicable to formation of peptide chains. An important in the presented project is a description of correlation between the used macrocycle and the peptide chain. This factor is crucial for a comprehensive picture important for determining the two way influence of the used structural motifs. Obtained information will allow to determine a correlation between a conjugated system and a peptide chain. It has to be emphasized that the presented research proposal concentrates on understanding of a fundamental behaviour of planned, based on previously observed clues and premisses, structures linking two motifs strongly influencing each other. Such approach represents a nontrivial point of view while thinking about a set of possible applications and remains the very first step for using the presented structures in the future.