2 STRESZCZENIE W JĘZYKU ANGIELSKIM

The subject of the doctoral thesis concerns the synthesis, reactivity of half sandwich metalocarbonyl complexes of iron, molybdenum and ruthenium and their potential application in biochemistry.

Chapter 1 of the literature covers basic information on transition metal chemistry and describes selected ligands found in organometallic complexes. Chapter 2 deals with the concept of biometaloorganic chemistry as an inderdisciplinary science. This section describes examples of the use of organometallic compounds in biochemistry. Chapter 3 describes bioorthogonal reactions, which in recent years have become more popular due to the possibility of reactions in living organisms without interfering with naturally occuring biological processes in cells.

The research part discusses the procedures of developed methods for the preparation of metallocarbonyl complexes. This part has been devided into four subsections in which there were descriptions of the conducted research on: photochemical reactions of complexes with β-diketones, reactions of complexes with monosaccharide phosphite, catalytic substitution of halogen in the starting complex and attempts to develop a new method of biomolecule labeling using *„click"* reactions.

The experimental part presents methods that were used to identify and characterize the compounds obtained and detailed procedures for the preparation of new organimetallic conjugates.