

# ABSTRACT

The Diploma Thesis deals with preparation of one phosphonate and two phosphinate derivatives of dipicolylamine. Dissociation constants of prepared ligands were determined by potentiometric and NMR titration. Coordination properties of the compounds were studied by combination of potentiometry and UV-VIS spectrophotometry. Stability constants of complexes with selected transition metal ions ( $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$  and  $\text{Zn}^{2+}$ ) and alkali-earth metals ions ( $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ) were calculated. Acid-base and coordination properties in the solid state were studied by X-ray diffraction on single-crystals.