

**Abstract:** Noninvasive imaging methods, such as MRI, are one of the most used methods in today's medicine. New MRI techniques that are being developed focus on measuring  $^{19}\text{F}$  nuclei or saturation transfer between  $^1\text{H}$  nuclei signals of contrast agent (CA) and water molecule. For these purposes, it is advantageous to use complexes of paramagnetic metal ions, whose magnetic properties cause increased rate of relaxation and thus reducing acquisition time.

In this bachelor thesis two new ligands **L1** and **L2** are prepared, whose complexes with metal ions, such as  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$ , could find a potential use as CAs in methods mentioned above.