

Summary of M.Sc. thesis
**Studies on some Diaryl formazans and their Chelates with Cerium,
Thorium and Uranyl ions**

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Summary

The thesis consists of 3 chapters

Chapter 1: includes a literature survey about the previous studies that have been reviewed in the chemistry of formazan derivatives concerning structure, color changes interpretation, ability of complex formation, stability of complexes, and uses giving special attention to acetyl and cyano formazan derivatives, which are ligands under investigation.

Chapter 2: is the experimental part including materials, preparation of various compounds and solutions, instruments used, working procedures, and methods of calculations applied.

Chapter 3: includes the obtained results and their discussion.

Some diaryl formazans were prepared and their mass spectra were studied to determine their exact molecular weight and the nature of their fragmentation. The ionization constants for these compounds' NH, COOH, and OH groups, stability constants for their complexes with cerium, thorium, and uranyl ions, and thermodynamic ionization and complex formation parameters were also calculated. Complexes of the ligands with cerium, thorium, and uranium ions in the solid state were also prepared, and a precise chemical analysis was conducted in addition to measuring their absorption spectra in the infrared and ultraviolet ranges and nuclear magnetic resonance spectra. and thermogravimetric analysis were also investigated.

The thesis ends with a list of references used to conduct the research and analyze and interpret the obtained results.