

## BOOK REVIEW

### **Kinetic and Thermodynamic Stability of Cerium(IV) Complexes with a Series of Aliphatic Organic Compounds**

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Investigation of the thermodynamic and kinetic aspects in formation and redox decomposition of the complexes with cations in anomalous oxidation states (OSs) is of considerable importance in relation to the problem of stabilizing the unstable OSs of elements. This problem has recently become particular significance due to the accumulation of information on unusual OSs and the development of a number of topical issues in materials science. While the thermodynamic criteria for the OSs stabilization are well known, much less developed the corresponding kinetic criteria.

A definite barrier to obtaining information on the values of the kinetic parameters characterizing the intramolecular redox decomposition of variable-valence metal complexes has been the lack of sufficiently well developed techniques for their determination. The present book reports on a number of proposed kinetic generalizations of the classical thermodynamic methods for investigating the complex formation and also on their kinetic analogues by means of which been possible not only to determine kinetic parameters of intracomplex redox decomposition and the thermodynamic parameters of formation for a series of organocerium(IV) complexes but also to establish a correlation between ones.

In originally developed for the study of cerium(IV) complexes, these techniques can also be used in studying the coordination compounds of other transition metals. Kinetic parameters of intracomplex redox decomposition, determined on their basis, can be used to form the kinetic stabilization criteria for unstable OSs in transition metal complexes as well as in solving the theoretical and practical problems of the OSs stabilization by complexation. The present work has remarkable scientific, methodical, and methodological significance. It is addressed to researchers in the area of coordination and physical chemistry, faculty members and advanced students.

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