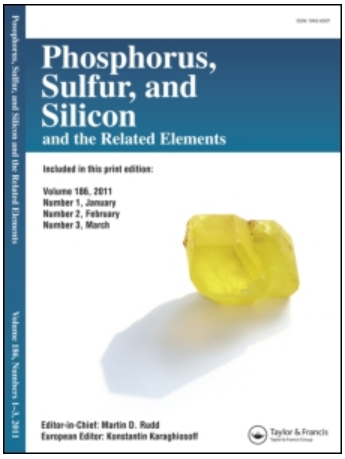

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STUDY OF THE COORDINATION COMPOUNDS OF SYNTHETIC AND PETROLEUM SULPHOXIDES

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STUDY of the COORDINATION COMPOUNDS of SYNTHETIC and PETROLEUM SULPHOXIDES.

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In recent years much attention has been given to extraction and solvation properties of sulphoxides,which are potential extractants for radioactive,non-ferrous and rare metals as well as organic and inorganic acids.
In the present study the investigations on the extraction with aromatic,aliphatic,cyclic and petroleum sulphoxides have been presented. The work was carried out at the Institute of Chemistry of the Bashkirian Branch A.S. USSR.
Interactions between sulphoxides and water as well as different metal salts have been studied quantitatively.
The mechanism for the acids and metal salts extraction was suggested.
Thermodynamics of sulphoxides extraction depending on their molecular structure has been investigated.
Entropy factors were found to effect extraction. Sulphoxides basicity was correlated with extraction constants. The latter depend on substituent electronegativity at the sulphur atom.
Data on identification of sulphoxide complexes formed as well as the technique of their synthesis with d-,f- element chlorides and nitrates were presented.
IR-,UV-,Raman spectra,PMR-spectroscopy as well as chemical analysis and determination of the Molecular Weights were used to investigate the composition of the complexes.
Thermodynamic parameters (ΔH, ΔS, ΔG) of complexing were obtained with calorimetric measurings on a Kalvet Microcalorimeter.

It was shown,that sulpxides and their metal complexes might be used as the stationary phases in Gas-Liquid Chromatography. Infinite-dilution solute activity coefficients were obtained at several temperatures in sulphoxides and their complexes. From these the following solute partial molar quantities were determined in each liquid phase: the excess enthalpy, excess entropy,enthalpy and entropy of the solution. The results were discussed in terms of the intermolecular interactions.