

complexes since no direct structural parameters under the same extraction conditions have been obtained yet.

Conclusion

A novel polyfunctional neutral organophosphorus ligand 1,2,4,5-tetra(diphenylphosphinyl)benzene **I** containing four $\text{Ph}_2\text{P}(\text{O})$ - groups fixed on the benzene platform was synthesized and studied as an extractant for U(VI), Th(IV) and lanthanides(III) ions from HNO_3 solutions. The influence of aqueous and organic phases on the extraction efficiency was elucidated and stoichiometry of the extracted complexes was determined. The presented data showed that the structure of the bridge between the phosphoryl groups in the molecule of polyfunctional neutral organophosphorus extractants has a considerable effect on both the extraction ability and the extraction order in the lanthanides(III) series. The extraction efficiency of compound **I** towards U(VI), Th(IV) and lanthanides(III) ions is significantly higher than that of its analogue **V** with methylene spacers between the $\text{P}(\text{O})$ groups and the benzene ring. Compound **I** extracts U(VI) more effectively than tetraphenylmethylenediphosphine dioxide, one of the most effective extractants of actinides and lanthanides from nitric acid solutions but ranks below in the extraction of Th(IV) and Ln(III).

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