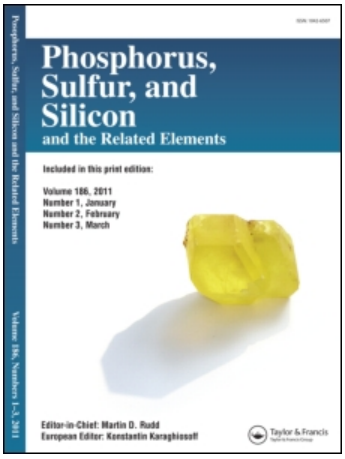

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Synthesis and Coordination Properties of Multifunctional Carbamoylmethyl Phosphonates

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Synthesis and Coordination Properties of Multifunctional Carbamoylmethyl Phosphonates

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Bifunctional carbamoylmethylphosphonates are useful extractants for lanthanide and actinide ions and the structural mechanics involved in extraction processes have been under study in our laboratory. We have recently prepared several new multifunctional ligands of the general types $(RO)_2P(O)CH[C(O)NR_2][CH_2C(O)NR_2]$, $[(RO)_2P(O)]_2CHCH_2C(O)NR_2$ and $[(RO)_2P(O)CHC(O)NEt_2]_2CH_2$. The syntheses and characterization data for the new extractants will be described. The coordination chemistry of these ligands with lanthanide and actinide ions has been studied and crystal structure determinations for selected complexes will be shown. Lastly, liquid-liquid extraction distribution measurements for several ligands with lanthanide ions will be presented.