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**Characterization of Bismuthate Oxidized Americium (V,VI) in Acidic Solution
Using X-ray Absorption Fine Structure Spectroscopy**

EXAFS and XANES analyses were applied in a study of americium higher oxidation states (AmO_2^+ and AmO_2^{2+}) in acidic solution using a sodium bismuthate (NaBiO_3) oxidizing agent. EXAFS results for the Am-LIII absorption edge of AmO_2^+ and AmO_2^{2+} showed a mixture of both oxidation states with no AmO_2 present. The stability of the AmO_2^+ species in nitric acid solution was also established using ultraviolet visible spectroscopy prior to EXAFS spectroscopy. The resulting bond distance was found to be 1.84Å for the Am=O and 2.49Å for the Am-O. Although a mixture of Am(V) and Am(VI) oxidation states was found, the information shows the local electronic structures of what can be anticipated during a separation process involving the use of NaBiO_3 .