The thesis describes the results of investigation carried out by the author in the Inorganic Chemistry Laboratories, University College of Science and Technology, Calcutta. A series of fluoro and iodo nitroso derivatives of Re(IV) have been prepared and their properties were studied with a view to compare them with those of chloro and bromo nitrosyl complexes and thereby completing the study of halonitrosorhenates. It has been attempted to compare their i.r. spectra with those of hexahalocomplexes of Re(IV) to assign the charge state of rhenium in these nitroso compounds.

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