

RECENT CHEMISTRY OF CHROMIUM AND URANIUM IN
SUPERACIDIC MEDIA

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An extensive Raman spectroscopic investigation of the Lewis acid/Lewis base behaviour of CrO_2F_2 dissolved in HF of varying acidity and basicity has shown that it exhibits no significant Lewis acidity in basic HF and that considerable enhancement of the acidity of HF is required to cause fluoride transfer from the solute to the medium.

Amphoteric behaviour of the fluoride, fluorosulphate and triflate of chromium(III) has been studied for each of these solutes in the HF, HSO_3F and $\text{CF}_3\text{SO}_3\text{H}$ solvent systems.

Following the stabilization of solvated U^{3+} in acidic HF and the subsequent demonstration of its disproportionation as the acidity of the medium is reduced [1], lower oxidation states of uranium have been studied in HSO_3F and $\text{CF}_3\text{SO}_3\text{H}$ to which appropriate Lewis acids have been added.

- 1 T.A. O'Donnell, Chem. Soc. Rev., **16** 26-27 (1987).

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