INFRARED SPECTRA OF MOLECULAR IONS FORMED FROM SF_4 AND SF_6 AND TRAPPED IN A NEON MATRIX

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When SF_4 or SF_6 is subjected to Penning ionization and photoionization by excited neon atoms and their resonance radiation (16.6-16.8 eV) and the products are rapidly frozen in an excess of solid neon, the resulting solid deposit shows prominent infrared absorptions which can be assigned to cation and anion products. Among the species identified through their infrared absorptions are SF_3^+, SF_5^+, SF_5^-, and F_2SO^+. The assignments are aided by consideration of the spectra of related systems and by the results of ab initio calculations.