ing energy (this is most evident from superposition of the two spectra). Finally, the experimental C_{1s} spectrum was measured (Fig. 2) and found to be in excellent agreement with the theoretical spectrum for the 4 : 1 mixture of (III) and (II) respectively; agreement between theoretical and experimental spectra was complete, not only absolute binding energies but also overall spectral envelope, and when normalized to a horizontal baseline the experimental spectra were exactly superimposable on the theoretically derived one. We therefore conclude that the vinylic fluorine adjacent to the aromatic ring is most susceptible to nucleophilic replacement with sodium borohydride in diglyme.

Fig. 2 Experimental C_{1s} spectrum of the mixture of II and III hydroheptafluoroindene. (Binding energies in eV.)

This provides a further striking example of how ESCA can be used in structural elucidations where other more familiar spectroscopic techniques are inadequate.

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Further Studies of Binary CO_2 Complexes of Nickel in Low Temperature Matrices

OUR recent publication¹ described in *Nature Physical Science* a mass spectra which we attributed to Ni/CO_2 complexes. Recent research in our laboratory into the system $Ni/N_2/Ar$ indicates that many, if not all, of these lines are in fact Ni/N_2 complexes, resulting from trace impurities in our gas mixture.

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