

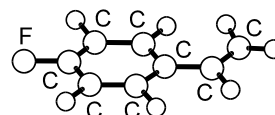
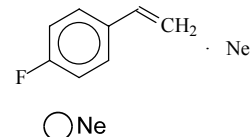
831  
LIF

 $\text{C}_8\text{H}_7\text{FNe}$ 
**1-Ethenyl-4-fluorobenzene – neon (1/1)**
 $\text{C}_1$ 

 4-Fluorostyrene – neon (1/1)  
(weakly bound complex)

(large-amplitude motion)

|  |                        |                                |
|--|------------------------|--------------------------------|
| State  | $\tilde{X}^1\text{A}'$ | $\tilde{\text{A}}^1\text{A}''$ |
| Energy [eV]  | 0.00                   | 4.253                          |
| $r_0(\text{C}_8\text{H}_7\text{F} \cdots \text{Ne})$ [Å] | 3.368(2)               | 3.334(1)                       |



A stream of neon was passed over heated 4-fluorostyrene and expanded through a heated nozzle and into a vacuum chamber. After passing through a skimmer the beam was excited by UV radiation from an intracavity doubled single-mode ring dye laser and the fluorescence was detected by a photomultiplier. Spectra were obtained by scanning the ring dye laser and rotational analysis yielded rotational constants for the ground and excited states. These constants are consistent with a structure in which the neon atom lies above the plane of the 4-fluorostyrene molecule in both the  $S_0$  and  $S_1$  states.

Lakin, N.M., Pietraperzia, G., Becucci, M., Castellucci, E., Coreno, M., Giardini-Guidoni, A., van der Avoird, A.: J Chem. Phys. **108** (1998) 1836.