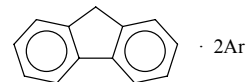


916 **C₁₃H₁₀Ar₂**Mass-selective
REMPI**9H-Fluorene – argon (1/2)**

(weakly bound complex)

C_{2v}(effective symmetry class)
(large-amplitude motion)

State	\tilde{X}^1A'	\tilde{A}^1A''
Energy [eV]	0.0	4.177
$r_0(\text{C}_{13}\text{H}_{10}\dots\text{Ar})$ [Å]	3.42(1)	



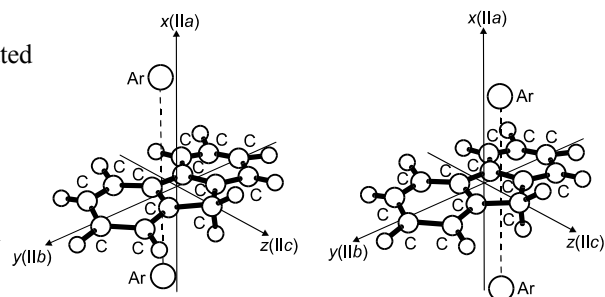
The van der Waals complex was generated by passing a mixture of argon and neon over heated fluorene and expanding the mixture into a supersonic chamber.

Excitation from the ground state to a selected rovibronic level of the \tilde{A} state was achieved by a single-frequency UV laser with a frequency width of 140

MHz. A counterpropagating ionization laser

produced ions which were analyzed in a time-of-flight mass spectrometer. The spectra were found to consist entirely of *b*-type transitions which indicates that the two argon atoms lie on opposite sides of the fluorene molecule. The rotational constants for the ground state are consistent with structures in which the argon atoms lie 3.42 Å above and below the molecular plane and with coordinates along the *c*-axis of ± 0.53 Å (see figure).

No structural information is given for the excited state.



Sussmann, R., Zitt, U., Neusser, H.J.: J. Chem. Phys. **101** (1994) 9257.