RAMAN SPECTRA OF 9,10-DIHYDROANTHRACENE VAPOR AND MELT AT HIGH TEMPERATURES

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The Raman spectra of vapor-phase 9,10-Dihydroanthracene have been recorded at 280 deg C. The low-frequency region shows three bands at 223, 171 and 119 cm^{-1}. These have been assigned respectively as the in-phase ring-flapping (ν_{29}), the in-phase ring-twisting (ν_{36}) and as (ν_{36}) - (ν_{49}), a difference band between (ν_{36}) and the ring-puckering (ν_{49}). The difference band demonstrates that the molecule is puckered with C_{2v} symmetry. The Raman spectra of the melt (140 deg C) and the solid have also been recorded and compared to the vapor. Assignments were made and compared to predictions from molecular mechanics (MM3) calculations.