

JET-FTIR-SPECTROSCOPY OF PYRROLE CLUSTERS

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Jet-FTIR spectroscopy is a powerful technique to investigate small hydrogen bonded clusters^a. The filet-jet-spectrometer combines a $600 \times 0.2 \text{ mm}^2$ slit nozzle with a commercial FTIR-instrument^b.

Pyrrrole is a five-membered heterocyclic aromat with hydrogen bond donor (N–H) and acceptor (π -system) functionalities. Weak N–H $\cdots\pi$ hydrogen bonds^c play an important role in biological systems. Therefore, weakly bound aggregates of pyrrole and some of its methylated derivatives have been systematically characterised by the filet-jet-spectroscopy.

In pyrrole-2-carboxaldehyde, the additional carbonyl group offers a better hydrogen bond acceptor site and leads to the formation of more conventional N–H \cdots O hydrogen bonds. Its dimer has therefore been investigated as a small model system for hydrogen bonding in peptides.

^aT. Häber, U. Schmitt, C. Emmeluth and M. A. Suhm *Faraday Discuss.* **118**, 2001, 331–359.

^bC. A. Rice, N. Borho and M. A. Suhm *Z. Phys. Chem.* **219**, 2005, 379–388.

^cA. Gómez-Zavaglia and R. Fausto *J. Phys. Chem. A* **108**, 2004, 6953–6967.