

2-COLOR IONIZATION DIP SPECTROSCOPY OF SIZE ASSIGNED HYDROGEN-BONDED CLUSTERS

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Source: INSTITUTE OF PHYSICS CONFERENCE SERIES Issue: 114 Pages: 421-424 Published: 1991

Times Cited: **0** (from Web of Science)

Cited References: **4** [[view related records](#)] [Citation Map](#)

Abstract: Vibrational spectra of supersonically cooled complexes of p-cresol with H₂O were analyzed by mass-resolved two-photon ionisation, dispersed fluorescence and stimulated emission, detected by two colour ionisation dip. In p-cresol.(H₂O)₁ progressions of the intermolecular cluster stretch vibration were observed with similar frequencies in the S₀ - and S₁ - state. The intermolecular stretch of p-cresol . (H₂O)₃ again has similar frequencies in the S₀-and S₁-state but has a considerably higher frequency than in p-cresol.(H₂O)₁. In p-cresol.(H₂O)₃, further intense intermolecular bands arise beside the totally symmetric stretch vibration, namely the hydrogen-bridge bending and torsion vibration.

Accession Number: WOS:A1991FW89900099

Document Type: Article

Language: English

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Publisher: IOP PUBLISHING LTD, TECHNO HOUSE, REDCLIFFE WAY, BRISTOL, ENGLAND BS1 6NX

Web of Science Categories: Physics, Multidisciplinary

Research Areas: Physics

IDS Number: FW899

ISSN: 0951-3248