HIGH RESOLUTION INFRARED SPECTRA OF $^{120}SnD_4$

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High resolution FTIR spectra of the ν_2/ν_4 and the ν_1/ν_3 bands of $^{120}SnD_4$ have been measured with a Bruker 120 HR interferometer. The sample was prepared under vacuum using a two step synthesis. The ν_2/ν_4 region (425-620 cm^{-1}) was studied using a liquid He-cooled bolometer, while an MCT detector was used in the ν_1/ν_3 region (1275-1455 cm^{-1}). The resolutions of the spectra are 0.0033 cm^{-1} and 0.0024 cm^{-1}, respectively.
The ν_1/ν_3 band system has been analyzed rotationally, and a set of molecular parameters have been obtained. The measurement of the first and second stretching overtones is in progress, too. The results will be compared with those of normal stannane, SnH_4. In the case of normal stannane vibrational localisation has been found to take place in stretching vibrational overtones. Thus the dynamical symmetry of stannane, a spherical top molecule, has been found to become that of a prolate symmetric top.

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