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Title

Terahertz Spectroscopic Inspection and Analysis of Xylitol and D-Xylose

Source

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Abstract

In the present paper, THz spectra of xylitol and D-xylose are measured at room temperature in the frequency region of 0. 3~2. 6 THz. The results show that characteristic absorption peak of D-xylose was found at 1. 67, 1. 96 and 2. 46 THz, and those of xylitol at 1. 62, 1. 87 and 2. 51 THz. At the same time, density functional theory was applied to obtain the structure and vibration frequencies of the single molecules of two samples in THz region. The simulation results reveal that some of the absorption peaks result from the intra-molecular modes, while the others have to be attributed to intermolecular interaction or phonon modes. (14 References).