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标题: Terahertz spectroscopic investigations of leather in terahertz wave range
作者: Song, MJ (Song Mei-jing); Li, JS (Li Jiu-sheng)
编者: Yao J; Zhang XC; Yan D; Liu J
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摘要: Pulsed THz time-domain spectroscopy is a coherent technique, in which both the amplitude and the phase of a THz pulse are measured. Recently, material characterization using THz spectroscopy has been applied to biochemicals, pharmaceuticals, polymers and semiconductors and has given us important information. Moreover, THz imaging has progressed and is expected to be applicable for the identification of narcotics and explosives. The most important and characteristic point of THz spectroscopy is said to be its ability to observe intermolecular vibrations in contrast to infrared spectroscopy (IR), which observes intramolecular vibrations. Coherent detection enables direct calculations of both the imaginary and the real parts of the refractive index without using the Kramers-Kronig relations. Terahertz wave spectroscopy has been used to study the properties and absorption spectra characteristic of materials. In this paper, the spectral characteristics of cow skin, pig skin sheep skin, horse skin and deer skin have been measured with terahertz time-domain spectroscopy in the range of 0.1 similar to 2.0THz. The results show that THz-TDS technology provides an important tool for quality analysis and detection of leathers.
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地址: [Song Mei-jing; Li Jiu-sheng] China Jiliang Univ, Ctr THz Res, Hangzhou 310018, Peoples R China
通讯作者地址: Song, MJ (通讯作者),China Jiliang Univ, Ctr THz Res, Hangzhou 310018, Peoples R China
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