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Accession number:20112814137322
Title:Terahertz spectroscopic testing of food additive tert-butylhydroquinone
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Source title:Guang Pu Xue Yu Guang Pu Fen Xi/Spectroscopy and Spectral Analysis
Abbreviated source title:Guang Pu Xue Yu Guang Pu Fen Xi
Volume:31
Issue:7
Issue date:July 2011
Publication year:2011
Pages:1809-1813
Language:Chinese
ISSN:10000593
CODEN:GYGFED
Document type:Journal article (JA)
Publisher:Science Press, 18,Shuangqing Street,Haidian, Beijing, 100085, China
Abstract:Terahertz time-domain spectroscopy (THz-TDS) technique has a wide range of applications in nondestructive testing. After many years study, people have found that many materials have characteristic absorptions in terahertz range. This letter studies the THz spectra of tert-butylhydroquinone (TBHQ), a food additive that was reported excessively in Mak chicken of McDonald. The authors applied terahertz nondestructive testing technique in identifying this material, testing the absorption and refractive index. The absorption spectra of TBHQ and flour mixture in 0.2~2.2 THz were also investigated. The simulation of vibration for single molecular was undertaken. The results represent that this method is possible by comparing the difference in absorption lines and this method paves the way for detecting food additives.
Number of references:14