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Accession number:20113714318999 Title:THz chemical imaging for biological applications Authors: Ajito, Katsuhiro (1); Ueno, Yuko (1) Author affiliation:(1) Microsystem Integration Laboratories, NTT Corporation, Atsugi 243-0198, Japan Corresponding author: Ajito, K.(ajito.katsuhiro@lab.ntt.co.jp) Source title: IEEE Transactions on Terahertz Science and Technology Abbreviated source title:IEEE Trans. Terahertz Sci. Technolog. Volume:1 Issue:1 Issue date:September 2011 Publication year:2011 Pages:293-300 Article number:6005325 Language:English ISSN:2156342X Document type: Journal article (JA) Publisher:IEEE Microwave Theory and Techniques Society, 2458 East Kael Circle, Mesa, AZ 85213, United States Abstract:THz spectroscopy is advantageous in analytical chemistry because it can detect and

Abstract:THz spectroscopy is advantageous in analytical chemistry because it can detect and identify intermolecular interactions in chemical compounds, such as hydrogen bonds and hydrations, and molecular networks. Recent advances in THz components, such as ultrashort pulsed lasers and photoconductive antennas, have improved the sensitivity of THz time-domain (TDS) spectroscopy and have made the THz chemical imaging possible. THz chemical imaging can reveal hydrogen bond distributions and will be a very powerful tool in biology, pharmacology, and life sciences. THz-TDS is also promising for the quantitative chemical analysis and detection of molecules and clusters in nanospace and ice.

Number of references:71