Record Nr. UNINA9910782284803321 Terahertz sensing technology . Volume 2 Emerging scientific **Titolo** applications & novel device concepts [[electronic resource] /] / editors Dwight L. Woolard, William R. Loerop, Michael S. Shur River Edge, N.J., : World Scientific, c2003 Pubbl/distr/stampa **ISBN** 1-281-95605-8 9786611956059 981-279-666-5 Descrizione fisica 1 online resource (420 p.) Collana Selected topics in electronics and systems;; v. 32 Altri autori (Persone) LoeropWilliam R ShurMichael WoolardDwight L Disciplina 621.367 Soggetti Infrared detectors Microwave detectors Microwave devices Submillimeter waves Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. : THz-Frequency Spectroscopic Nota di contenuto CONTENTS : Preface Sensing of DNA and Related Biological Materials ; 1. Introduction ; 2. Theory for the Characterization of **Bio-Molecules** : 3. Experimental Techniques for the Characterization of Bio-Molecules 4. Comparison of Experimental Results with Theoretical Prediction 5. Applications: Artificial Neural Network Analysis : 6. Conclusions : References : Spectroscopy with Electronic Terahertz Techniques for Chemical and Biological Sensing ; 1. Introduction ; 2. Background 3. Broadband stimulus/response 4. Reflection and transmission spectroscopy with coherent detection ; 5. Sample preparation ; 6. Reflection ; 7. Transmission ; 8. Reflection from solution proteins

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## Sommario/riassunto

The last research frontier in high frequency electronics lies in the socalled terahertz (or submillimeter wave) regime, between the traditional microwave and the infrared domains. Significant scientific and technical challenges within the terahertz (THz) frequency regime have recently motivated an array of new research activities. During the last few years, major research programs have emerged that are focused on advancing the state of the art in THz frequency electronic technology and on investigating novel applications of THz frequency sensing. This book provides a detailed review of the n