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科研论文

本期封面图片由中物院微系统与太赫兹研究中心刘杰提供（190682）

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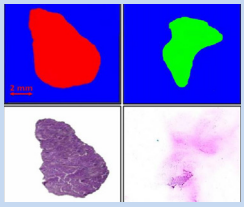
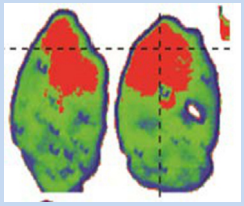
Review



Applications of terahertz imaging technology in tumor detection 190638

Shi Chenjun, Wu Xu, Peng Yan

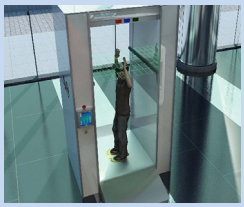
Many terahertz imaging methods in tumor detection were listed and analyzed. The basic principle of these imaging methods and the works done by different groups worldwide were introduced. At last, the prospect of terahertz imaging technology applied in biomedical field was presented.



Research progress of terahertz medical imaging 190721

Yan Zhiyao, Huang Wanxia, Huang Qingqing, Zou Yi, Zhu Liguo, Shi Qiwu

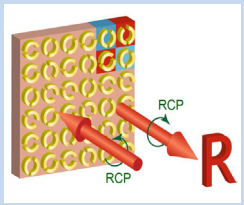
A brief introduction on the terahertz medical imaging systems and the applications of terahertz medical imaging in biological tissues from in vitro to in vivo were presented. The recent development of nanoparticle contrast agents for improving the contrast of terahertz imaging in vivo also was reviewed.



Terahertz near-field MIMO-SAR technology for human security inspection 190682

Liu Jie, An Jianfei, Zhou Ren, Yu Yang

The application of terahertz near field MIMO-SAR technology in human body security inspection was introduced. Then the system composition and imaging algorithm were introduced, and finally a prospect of development was made.

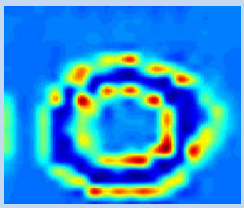


Metasurface-based computer generated holography at terahertz frequencies 190674

Liu Xingbo, Wang Qiu, Xu Quan, Zhang Xueqian, Xu Yuehong, Zhang Weili, Han Jiaguang

A review of recent progress in metasurface-based terahertz CGH from author team was presented. A meta-hologram with simultaneous and independent phase and amplitude control over each pixel was presented. Then different responses under different incident polarization states were designed.

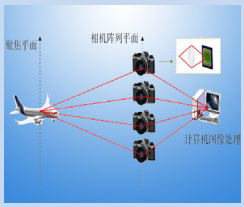
Article



Terahertz wave propagation and imaging detection characteristics in plasma 190075

Geng Xingning, Li Jining, Xu Degang, Liu Chang, Fan Xiaoli, Yao Jianquan

The theoretical model of ununiform plasma sheath was established based on scattering matrix method and the transmission characteristics of 0.1 THz～10 THz wave were simulated.



An experimental study on terahertz light field data acquisition and digital refocusing 190670

Yang Moxuan, Zhao Yuanmeng, Zuo Jian, Lv Nanfang, Zhang Cunlin

An experiment on the data acquisition and digital refocusing of the terahertz light field was conducted. Experimental results showed the feasibility and ability of terahertz light field imaging to improve image quality and enrich retrieval effects.