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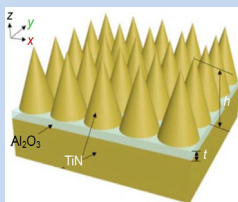
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### Review

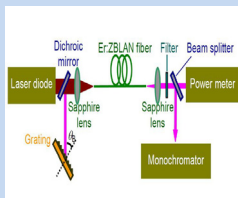


#### Progress on infrared and terahertz electro-magnetic absorptive metasurface

180666

Deng Honglang, Zhou Shaolin, Cen Guanting

The basic concepts and background of metasurfaces were introduced, and the design and development of several absorptive metasurface devices in the infrared & THz bands were summarized and its potential problems and prospective in future were discussed.



#### Research progress of Er:ZBLAN fiber lasers at the wavelength of 3 $\mu\text{m}$

190070

Zhang Xin, Shu Shili, Tong Cunzhu

The development status of Er:ZBLAN fiber laser was introduced. The technical difficulties encountered in the development of Er:ZBLAN fiber laser were discussed. Moreover, their future development directions were also summarized and prospected.

### Article

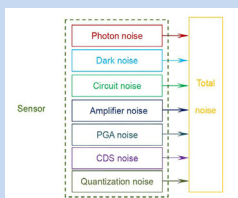


#### Hysteresis nonlinear modeling and inverse compensation of piezoelectric actuators

180328

Liu Xin, Li Xinyang, Du Rui

Hysteresis operator was introduced and using Bayesian regularization training algorithm to train BP neural network to construct hysteresis model of piezoelectric ceramic actuator, an experimental study was conducted on a piezoelectric actuator developed by IOE, CAS.

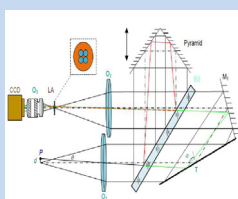


#### Research on the test methods of charge accumulating TDICMOS detector

180504

Liang Nan, Zhang Feiran, Cai Shuai, Li Bo, Li Tao

Based on TDICMOS characteristics, the test methods of charge-DN factor, full well charges, transfer efficiency and readout noise were proposed. These test methods were verified, and the correctness of these testing methods and the feasibility of the engineering were proved.

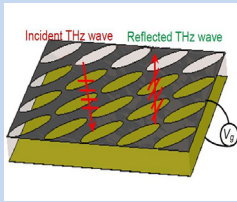


#### Oblique incidence dynamic phase-shifting interferometer based on inclination angle deflection

180516

Liu Zhiyuan, Chen Lei, Zhu Wenhua, Ding Yu, Ma Yun, Zheng Donghui

An oblique incidence dynamic phase-shifting interferometer based on inclination angle deflection was proposed to quickly obtain the surface distribution of optical surface with flatness of micron dimension.

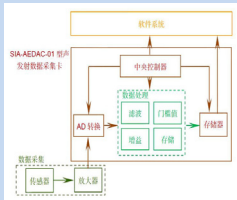


### Broadband terahertz tunable metasurface linear polarization converter based on graphene

180519

Zhang Hongtao, Cheng Yongzhi, Huang Mulin

A terahertz broadband tunable reflective linear polarization converter based on oval-shape-hollowed graphene metasurface was proposed and verified by simulation and Fabry-Perot multiple interference theory.

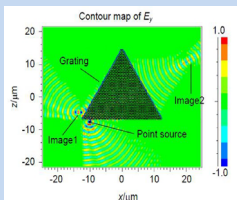


### The real-time acquisition and analysis software system for laser-induced plasma acoustic wave signal

180534

Liu Xuejun, Wu Jiajun, Qiao Hongchao, Zhao Jibin, Li Changyun, Zhang Yinuo, Wan Lanjun

In order to realize the online detection of laser shock processing and aim at the phenomenon of laser-induced plasma acoustic wave, the SIA-AEDAC-01 acoustic emission acquisition card was used to collect acoustic wave signals.

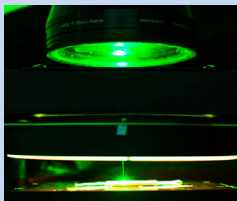


### Dual subwavelength imaging based on two-dimensional photonic crystals

180577

Niu Jinke, Liang Binming, Zhuang Songlin, Chen Jiabi

A focusing structure which can achieve negative refraction and dual subwavelength imaging was proposed, based on two-dimensional (2D) photonic crystal (PC) which consists of air holes in silicon.

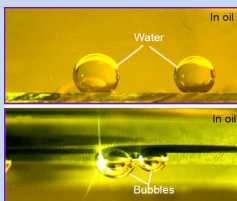


### Femtosecond green laser processing of magnesium alloy

180672

Zhu Yiliang, Xie Xiaozhu, Huang Qingpeng, Hu Wei, Ren Qinglei

A femtosecond green laser with wavelength of 515 nm was used to process the AZ31 magnesium alloy. The laser ablation threshold and ablation rate of Mg alloy were calculated. The mechanism of femtosecond green laser process was determined.



### Effect of pre-wetting on the wettability of laser ablated Al superhydrophobic/superhydrophilic surface

190022

Zheng Zhixia, Yang Huan

A regionally controllable superhydrophobic/superhydrophilic mixed surface was prepared by laser ablation, and the effects of pre-wetting on the surface wettability of samples under water and oil were studied, as well as the stability of the surface wettability of samples.