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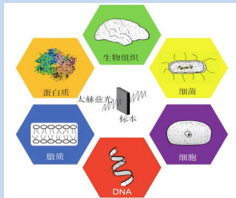
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本期封面图片由上海理工大学张学典(170633)提供

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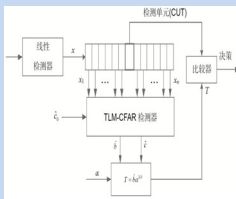


- Applications of terahertz technology in medical science and research progress 170528

Ye Hui, Xi Mingrong, Cao Hanyu, Lan Feng, Hou Minmin

The applications of terahertz imaging and spectroscopy in medical science and medical research progress are introduced, and the difficulties of terahertz technology and potential biological safety also are discussed.

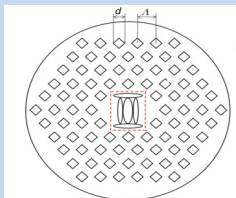
Article



- A cycle elimination TLM-CFAR detector for Weibull clutter 170593

Han Dongjuan, Tan Xiaomin, Shi Pingyan

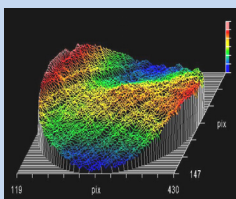
For the problem of CFAR detection in Weibull clutter background, a CFAR detector—cycle elimination TLME-CFAR detector is proposed. Then the performance of the detector is studied by Monte Carlo simulation and compared with the MLH-CFAR detector.



- Characteristics in square air hole structure photonic crystal fiber 170633

Zhang Xuedian, Yuan Manman, Chang Min, Lu Xinglian, Chen Nan, Nie Fukun, He Menghui, Qi Ningning, Zhuang Songlin

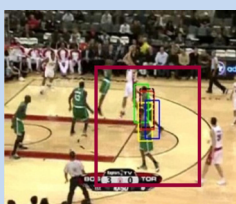
A new photonic crystal fiber structure with an elliptical air hole as the core surrounded by square air holes is proposed. And the effects of different fiber core ellipticity and different filled material on birefringence, dispersion and nonlinearity of photonic crystal fiber are discussed.



- Optimization of sparse subaperture array model for stitching detection of plane wavefront 170638

Luo Qian, Wu Shibin, Wang Lihua, Yang Wei, Fan Bin

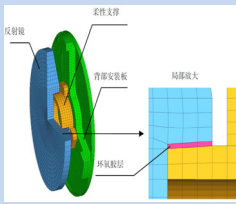
A mathematical model for stitching detection of plane wavefront is established to deduce the relation curve between the subaperture number k and fill factor M .



- An object tracking algorithm based on color, space and texture information 170643

Hou Zhiqiang, Wang Liping, Guo Jianxin, Chu Peng

In order to deal with complex scene change problem in the tracking process, a tracking algorithm via multiple feature fusion is proposed. By using the complementarity of color, space and texture features, the tracking performance is improved.

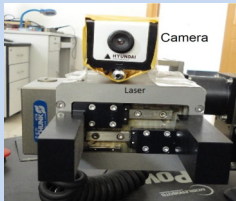


Design of flexure support of space compact reflector subassembly and dynamic analysis

170686

Liu Ming, Zhang Lizhong, Li Xiang, Li Xiaoming, Zhang Jiaqi, Meng Lixin, Liu Junjie

The mirror assembly of an electro-optical tracking and pointing system for a space borne laser communication system is studied, three flexible supports are contrasted, and the structural stiffness advantage and surface figure of the three flexible support scheme are evaluated.



A target localization method with monocular hand-eye vision

170696

Zhang Botao, Zhong Chaoliang, Wu Qiuxuan

A target localization method using a laser and the monocular hand-eye vision is put forward to improve the effective load capacity of manipulators.

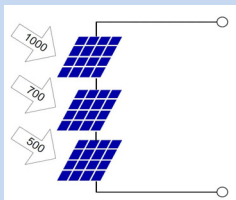


Study on wheeled polishing technology based on industrial robot

170710

Yang Rui, Yun Yu, Liu Ziwei, Liu Chengxing, Wang Ansu, Xie Bin

The wheeled polishing technique based on industrial robot is established by combining the advantages of robot control and wheeled polishing technology.

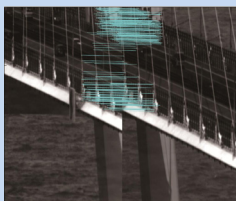


Applications of IBA for photovoltaic array under partially shaded condition

170711

Wu Zhongqiang, Yu Danqi, Kang Xiaohua

An improved bat algorithm (IBA) is proposed and used to find global optimal point, by introducing chaos search strategy in initial arrangement which can improve the uniformity and ergodicity.



Elimination method of image rotation for geostationary radiometer and its verification method

170725

Wang Meizhu, Huang Xiaoxian, Feng Qi

The image rotation errors introduced by the optical system of plane imaging with two-dimensional pointing reflection mirror are analyzed, and the image rotation elimination method for two-dimensional scanning and the verification method are proposed.