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本期封面图片由浙江省
医疗器械检验研究院
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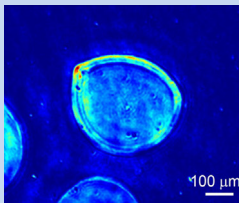


Multi-exposure image fusion based on tensor decomposition and convolution sparse representation

180084

Qi Yubin, Yu Mei, Jiang Hao, Shao Hua, Jiang Gangyi

In view of the problem about the loss of detail and color distortion in multi-exposure image fusion, a multi-exposure image fusion method based on tensor decomposition and convolution sparse representation was proposed.

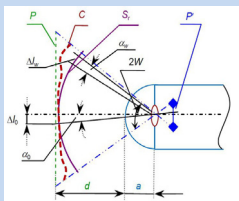


Biology microscopy using well-distributed sphere digital in-line holography

180110

Tian Peng, Yan Wei, Li Fanxing, Yang Fan, Wu Yunfei, He Yu

Traditional pinhole spherical wave digital in-line holography has proved to be powerful imaging tools. Image quality is affected by uncertain round of pinhole. A well-distributed sphere wave generation method was proposed and wide field of view and high resolution microscopy were demonstrated.

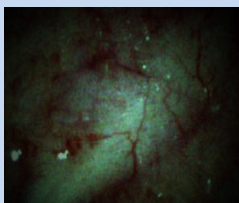


The study of the methods for evaluating the matching rate of capsule endoscope pixels and its resolution effectiveness

180112

Jia Xiaohang, Zhang Qinyuan, Yan Qinglai, Yang Shiming, Chen Debao

The evaluation for the matching level between the optical resolution and the pixels number on the full field of view of the capsule endoscope, and the evaluation methods for the resolution effectiveness of pixels number were established.

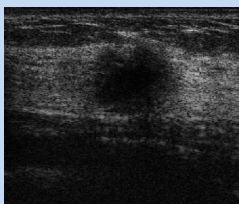


A vascular enhancement algorithm for endoscope image

180167

Jiang Hongpeng, Zhang Kejian, Yuan Bo, Wang Liqiang

Endoscopic image quality plays an important role in the diagnosis of early lesions and dysplasia. A blood vessel enhancement algorithm based on spectral absorption characteristics of blood vessels was proposed.

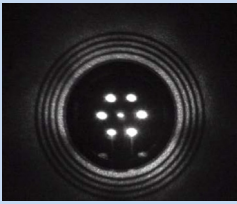


The grade classification algorithm of breast tumor based on ultrasound RF signals

180368

Tong Ying, Yan Yu

A novel efficient method based on the ultrasound radio frequency (RF) signals was proposed to distinguish the breast tumors grades. Extensive experiments demonstrated the effectiveness of the new proposed method.

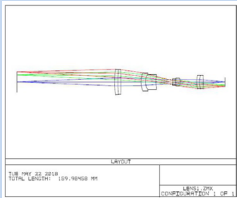


Optimization design and realization of a keratometer

180373

Chen Peng, Wang Cheng, Zheng Gang, Chen Minghui, Xiang Huazhong, Zhang Dawei

To realize a simplified keratometer, a design proposal based on corneal reflex imaging was proposed. The experiment results show that the precision of the measurement error is ± 0.02 mm and the measurement range is from 5.5 mm to 11.6 mm (30 m^{-1} to 60 m^{-1} in diopter of cornea).

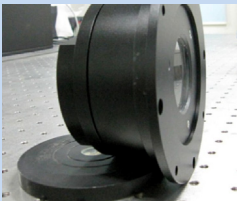


Design of optical system for high accuracy imaging keratometry

180392

Zhang Xueying, Wang Jinsong, Huang Guolin, Xu Pengfei

In order to reduce the alignment deviation of the imaging keratometer along the optical axis and improve the measurement accuracy of corneal diopter, a high precision imaging keratometer optical system was designed.

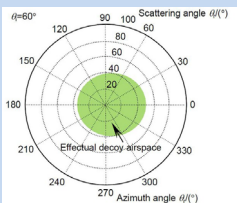


Application of image rotating mechanism of prism in ultra-high speed rotating mirror camera

180399

Chang Lihua, Li Jian, Wang Wei, Wang Xu, Zhang Guangsheng, Gao Peng, Xiao Zhengfei, Shang Changshui

The principle of image rotating mechanism based on prism was introduced and the image rotating mechanism using Pechan prism matching the high speed rotating mirror camera was designed.

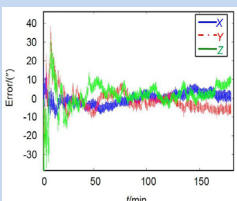


Deceiving ability of typical natural objects used for false target in laser decoy jamming

180453

Sun Chunsheng, Zhang Shuang, Zhang Xiaohui

Aiming at the applications of natural objects false target in laser decoy jamming, its deceiving ability characterized by decoy airspace was calculated and analyzed.



Ship angular flexure measurement method based on ring laser gyro units

180556

Zheng Jiaying, Dai Dongkai, Wu Wei, Zhou Jinpeng

For ship angular flexure measurement based on the ring laser gyro units, a simplified attitude matching method was proposed. This method can track both the slow-varying angular flexure caused by sunshine heating and the short-time large-magnitude angular flexure caused by factors such as helm's operation.