

Research on Plane Imaging Technology of Line Structure Light based on Confocal
Microscopy

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ABSTRACT

In 2005, the theory of line structure light confocal scanning microscopy was put forward firstly in China by Xingyu Gao and Zexin Xiao in the Institute of Opt-mechatronics of Guilin University of Electronic Technology. Though the lateral resolution of line confocal microscopy can only reach or approach the level of the traditional dot confocal microscopy. But compared with traditional dot confocal microscopy, it has two advantages. One of them is to improve the traditional scanning method of dot confocal plane imaging. Plane imaging only performs one-dimensional scanning, with imaging velocity greatly improved and scanning mechanism simplified. Based on the further research on the theory of line structure light confocal scanning microscopy, imaging technology of one-dimensional scanning is put forward on condition of line structure light confocal microscopy. Its validity and reliability are also verified by experiments.