



发光学报 2013, 34(5) 611-616 ISSN: 1000-7032 CN: 22-1116/O4

### 器件制备及器件物理

#### 线阵探测器KLI-2113总剂量辐照性能试验分析

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摘要：针对Kodak公司的商用CCD探测器KLI-2113进行了总剂量为30 krad(Si)的<sup>60</sup>Co-γ辐射试验。对比辐射前后CCD的主要参数变化,分析了总剂量辐射对CCD工作性能的影响,并研究了总剂量辐射导致CCD暗电流增大、电荷转移效率降低以及图像噪声增加等现象的内在机理,为后续CCD抗总剂量辐射加固提供依据和参考。

关键词：电荷耦合器件 总剂量辐射 暗电流 电荷转移效率 损伤机理

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#### Analysis of Total Dose Radiation Test for Linear CCD KLI-2113

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Abstract: This paper researched the Cobalt 60-γ total dose radiation test for the CCD KLI-2113 from Kodak Company by comparing the main parameters shift before and after radiation. The effect of the total dose radiation on the performance of CCD was analyzed. The results indicate that the radiation induces the increase of the dark current, the decrease of charge transfer efficiency, the increase of picture noise. There result provides reference for the total dose resistant radiation hardening in future.

Keywords: CCD total dose radiation dark current charge transfer efficiency damage mechanism

收稿日期 2013-01-25 修回日期 2013-03-01 网络版发布日期 2013-03-15

基金项目:

国家863计划重大项目(2011AA12A103)资助

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