

技术及应用

CCD在不同注量率电子辐照下的辐射效应研究

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摘要 对TCD1209线阵CCD进行能量为1 1 MeV的电子辐照试验, 采用两种不同的注量率辐照后, 对器件进行常温退火试验, 在辐照与退火过程中考察CCD的光响应灵敏度、暗电流、参考电平、功耗电流等特性参数的变化规律。结果表明, CCD受电子辐照后主要产生电离总剂量损伤, 在不同注量率电子辐照下的辐射损伤效应类似于MOS器件的时间相关效应。

关键词 [线阵CCD](#) [电子辐照](#) [电离总剂量效应](#) [时间相关效应](#)

分类号

Research on Electron Irradiation Damage Effects of Charge Coupled Device

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Abstract In order to research the electron beam irradiation damage effects of CCD, TCD1209 linear CCD was irradiated by the 1 1 MeV electron beam under two kinds of fluence rates. Room temperature annealing was carried after the irradiation experiment. In the experiment, photoelectric responsibility, dark current, reference voltage, and consumption current of CCDs were investigated. The results show that the damage of CCD under electron irradiation is total ionization dose effect, and is similar to time dependent effect of MOS devices.

Key words [linear CCD](#) [electron beam irradiation](#) [total ionization dose effect](#) [time dependent effect](#)

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