应用光学　2005 26 (6): 074-076　ISSN: 1002-2082　CN: 61-1171/O4

UV辐射光谱的光电测量研究

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收稿日期　修回日期　网络版发布日期 2006-8-14　接受日期

摘要　为了设计出符合要求的紫外产生材料和更好地对紫外光谱进行测量，
提出了以原子材料为基础产生紫外光谱和采用紫外传感器测量紫外光谱的方法。这在对抗紫外制导方面具有十分重要的研究和实用价值。根据相关理论，
重点对原子紫外光谱，尤其是碱金属原子核外电子的能量跃迁进行了分析和计算，
列出了计算的谱线数据。介绍了目标紫外光谱的测量原理。在选用合适的紫外材料激发后，采用双光栅单色仪和紫外传感器进行测量。最后，
给出了紫外传感器对紫外辐射的测量实验结果和测量曲线。

关键词　紫外传感器　紫外光谱　原子紫外光谱　紫外辐射

分类号

Study on optoelectronic measurement of UV radiation spectrum

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Abstract In order to design the material, which can generate the ultraviolet spectrum and fit a certain requirement, and measure the ultraviolet spectrum better, a method that utilizes some atomic material and appropriate excitation source to generate the needed ultraviolet spectrum and then measures the ultraviolet spectrum with the ultraviolet sensor is proposed.This is very useful for study and application of ultraviolet guided missile countermeasure and jam. According to related theories, the ultraviolet spectrum of atomic materials, especially the electron energy transition around alkali metal atomic nucleus is analyzed and calculated, and the spectral line data is listed in this paper. The measurement principle of target ultraviolet spectrum is also introduced. After the excitation scheme of suitable ultraviolet material is selected, the ultraviolet spectrum is measured with the dual grating monochromator and ultraviolet sensor.Finally, the experimental result and the curve diagram of measurement for ultraviolet radiation spectrum are given.

Key words UV sensor　UV spectrum　atomic UV spectrum　UV radiation

DOI:

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