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## 新型硅酸镨电流型闪烁探测器性能研究

@宋朝晖\$西北核技术研究所!陕西西安710024 @管兴胤\$西北核技术研究所!陕西西安710024 @代秋声\$西北核技术研究所!陕西西安710024 @王奎禄\$西北核技术研究所!陕西西安710024 @刘俊勇\$西北核技术研究所!陕西西安710024

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**摘要** 硅酸镨是一种新型的高发光强度、快响应的无机闪烁体。本工作采用硅酸镨与光电倍增管构成新型电流型探测器,并对其性能进行了实验研究。采用多种方法测量得到了该探测器的 $\gamma$ 灵敏度能谱响应曲线,检验获得探测器的 $\gamma$ 与中子的分辨本领至少在28以上。该探测器极其适于在脉冲中子、 $\gamma$ 混合场中探测脉冲 $\gamma$ 射线束。

**关键词** [硅酸镨](#) [无机闪烁体](#) [能量响应](#)  [\$\gamma\$](#)  [中子分辨](#)

**分类号** [TL812](#)

## Study on a New Current Scintillation Detector Made up of Lutetium Oxyorthosilicate

SONG Zhao-hui, GUAN Xing-yin, DAI Qiu-sheng, WANG Kui-lu, LIU Jun-yong (Northwest Institute of Nuclear Technology, P.O. Box 69-9, Xi'an 710024, China)

**Abstract** Lutetium oxyorthosilicate(LSO) is a new type of inorganic scintillator which has high scintillation efficiency and fast decay time. The properties of a current scintillation detector made up of LSO and PMT were studied. The sensitivity to incident gamma ray of different energy was measured by means of different methods. The sensitivity (ratio) of gamma to neutron is above 28 at least. The result shows this new type current scintillation detector is very appropriate for measurement of gamma pulse in a neutron-gamma mixed field.

**Key words** [lutetium oxyorthosilicate](#) [inorganic scintillator](#) [energy response](#) [discrimination of gamma and neutron](#)

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