应用光学 2009, 30(2) 296-299 DOI: ISSN: 1002-2082 CN: 61-1171/O4

论文

GaAs-玻璃粘接阴极组件热辐射放气成份质谱分析

徐江涛

西安应用光学研究所第二研究室微光夜视技术国防科技重点实验室, 陕西西安710065

摘要：

为解决负电子亲合势GaAs光电阴极电子发射灵敏度低的问题，运用质谱计对GaAs-玻璃粘接阴极组件在高温热辐射除气时的放气成份进行了分析, 获得了GaAs电子发射层原子级表面。结果表明：组件150℃为表面放气，450℃为材料体内放气，580℃为洁净表面获得温度，大于650℃ 时GaAs发射层面有As蒸发。这说明严格控制发射层表面洁净温度，是保证制备高性能阴极灵敏度的关键。

关键词： GaAs组件 玻璃粘接 热辐射除气 质谱分析

Mass spectrometric analysis for gas components baked from glass cementation cathode module

XU Jiang-tao

Key Laboratory of Low Light Level Technology of COSTIND,
Xi'an Institute of Applied Optics, Xi'an 710100, China

Abstract:

The gas components released from the glass cementation cathode module during the high temperature bake was analyzed with a mass spectrometer to resolve the problem of low GaAs photocathode emission sensitivity. The atomic level surface of GaAs electronic emission layer was obtained. The analysis result indicates that the degas temperature of the module surface is 150℃, the degas temperature of the material is 450℃, the temperature for clean surface is 580℃, and As evaporation occurs on the GaAs emission emission layer at the temperature higher than 650℃. It shows that the strict control of the clean temperature of the emission layer surface is the key to obtain high-performance sensitive cathode.

Keywords: GaAs module glass cementation heat radiation degas mass spectrometric analysis

收稿日期 1900-01-01 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

通讯作者: 徐江涛

作者简介:

参考文献：

本刊中的类似文章

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人		邮箱地址	
反馈标题		验证码	3619