

工程与应用

## 磁瓦表面缺陷自动检测系统的研究

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**摘要** 开发了一种基于机器视觉技术的磁瓦表面缺陷自动检测系统。该系统根据功能面的特点设计了图像采集系统,综合运用图像处理技术,采用改进的中值滤波技术消除噪声,运用基于灰度直方图的阈值分割并二值化,经后形态学处理、Roberts边缘检测提取出缺陷轮廓,通过提取缺陷面积特征,经模板匹配模式识别,判定磁瓦的质量等级。用于生产线试运行表明,该系统运行稳定,检测结果精度高,克服了人工检测劳动强度大且误检率高的缺点。

**关键词** [机器视觉](#) [缺陷检测](#) [磁瓦](#) [图像处理](#)

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## Research on surface disfigurement of arc segments ceramic magnet automatic detection system

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### Abstract

An automatic arc segments ceramic magnet surface defect detection system based on machine vision technology has been developed. In the system, many image processing technologies have been adopted. The image acquisition system is designed according to the features of functional surface, and the improved mean filtering technology is used to eliminate noises, and the threshold segment and binarize based on gray histogram is used, and defect outline is distilled by morphology processing and Roberts edge detecting, and product quality level is decided by distilling defect area characteristic and template matching pattern recognizing method. Product line running indicates that the system takes on characteristics such as system running status is stable, detecting precision is high, which overcomes the disadvantages of large labour and low precision by handwork detecting.

**Key words** [machine vision](#) [disfigurement detecting](#) [arc segments ceramic magnet](#) [image processing](#)

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