

工程与应用

板带材缺陷检测中的多特征优化组合方法研究

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摘要 针对冷轧板带材常见表面缺陷图像识别的特点, 提出了板带材表面缺陷多特征优化组合方法, 该方法以直方图统计特征、小波变换特征、灰度共生矩阵特征、不变矩特征等4类特征共26维特征向量为基础, 依据类间类内距离差的类别可分离性判据对特征进行优化, 选出最优特征向量组合。对6类典型板带材表面缺陷进行实验, 实验结果表明, 采用多特征优化组合方法选择出的特征向量具有较好的分离效果, 显著地提高了表面缺陷的识别率。

关键词 [板带材](#) [缺陷检测](#) [特征组合](#) [可分离性判据](#) [优化组合](#)

分类号

Research on multi-feature' s optimization combination algorithm for rolled strips defects inspection

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Abstract

A multi-feature' s optimization combination algorithm for rolled strips defects inspection is proposed aiming at the characteristic in recognition of cold rolled strips surface defects images. The method optimizes the features according to the class separable criterion of margin of within-class and among-class distance and selects the optimized feature vector combination based on four kinds of features, such as gray histogram feature, wavelet transform feature, gray level co-occurrence matrix feature and moment invariants feature, with 26 dimension feature vectors in all. The experiment is carried out for six kinds of typical rolled strips surface defects, the results show that the feature vectors selected by multi-feature' s optimization combination algorithm can get better separable effect and increase recognition rate of surface defects evidently.

Key words [rolled strips](#) [defects inspection](#) [feature combination](#) [separable criterion](#) [optimizing combination](#)

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