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机械工程

基于RGB颜色空间的异性纤维识别检测算法

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摘要:

研究了棉纤维的RGB色彩空间分布模型,提出了精确物理模型算法——彩色聚色算法.在此基础上,提出了实时检测算法.为了进一步提高算法效率,研究了改进后的实时检测算法,用于实现异性纤维检测系统中目标与背景的识别.由于识别目标的多样性以及复杂性,仅靠一两个特征无法得到满意的结果,通过提取颜色、面积、形状等特征,提出了基于组合特征的彩色图像多目标识别方法,通过多个目标特征的组合可以提高目标识别的质量.

关键词: 异性纤维;彩色图像分割;组合特征

Foreign fiber recognition and detection algorithm based on RGB color space

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Abstract:

The cotton fiber distributing model in RGB color space was studied in the article and an accurate physical model arithmetica color image clustering algorithm was proposed. A real- time detecting algorithm was developed on this basis. In order to enhance the algorithm efficiency, the improved real-time detecting algorithm was presented to extract the target from backgrounds in the foreign fibers inspecting system. Due to the complexity and diversity of recognizing a foreign fiber, it is hard to meet the requirements using one or two characters. A multiple targets recognition method based on combined characters such as color, area and shape was presented, which can highly increase the quality of targets recognition.

Keywords: foreign fiber; color image segment; combined characters

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