Assembly Defect Detection of Atomizers Based on Machine Vision

Jiankun Wang, Hong Hu  
 Department of Mechatronic Engineering  
 Harbin Institute of Technology, Shenzhen  
 Shenzhen, Guangdong Province, China  
honghu@hit.edu.cn

Long Chen and Caiying He  
 Technology Center  
 Shenzhen Colibri Technologies Co. Ltd  
 Shenzhen, Guangdong Province, China  
 longchen@colibri.com.cn

ABSTRACT

Atomizers are assembled in an automated assembly line, which inevitably creates assembly defects. In this paper, we use machine vision technology to detect assembly defects in atomizers. We propose two algorithms: an image processing algorithm, and a deep learning algorithm based on convolutional neural network. For design of the image processing algorithm, we set the region of interest for detection according to the position of different assembly defects. For the deep learning algorithm, we adopt the MobileNet model and propose a new training program to improve detection accuracy. The paper also includes an evaluation of the performance of the two algorithms and analyzes their advantages and disadvantages.

KEYWORDS

Atomizer, Assembly defect detection, Convolutional neural network, Machine vision

1 Insert Heading Level 1

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