

Fuzzy based technique for microchip lead inspection using machine vision

Authors(s): Yasser Hawari, Momoh JE Salami, Abdurazzag Ali Aburas

Abstract

This research develops a fuzzy based algorithm for microchip image lead inspection. Leads are inspected for count, planarity, offset, pitch and span defects. Firstly, it utilizes fast preprocessing techniques and blobpsila features extraction methods to achieve high inspection rates. Using the features extracted, the algorithm first finds a proper thresholding value. It then applies fuzzy logic to make a decision on the status of the IC based on these features. The algorithm proposes a structured way for building the fuzzy systems as well as the associated set of inference rules.

Keywords: Inspection, Machine vision, Filters, Charge coupled devices, Image edge detection, Feature extraction, Inference algorithms, Manufacturing, Computer vision, Mechatronics

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