On Line Defect Inspection System of Flat Shape Face Masks

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ABSTRACT

This thesis investigates the defect inspection of flat-shape face masks using machine vision. The inspection items on masks include both steel wire and cotton cloth. The length and position of steel wires on masks are firstly detected. The defects of cotton cloth include stains, cracks, foreign bodies, etc. The image process inspection steps for steel wires are color space transformation, binary value process, mask position search, inspection rectangle definition, and defect inspection. More, the inspection steps are developed for cotton cloth including position detection, image-filtering process, image division, zero-average process, feature extraction, and defect inspection. In addition, an image-matching method is used to inspect the defects of cotton defects through correlation coefficients and is compared with the proposed method. Finally, experiments on practical flat-shape face masks show effectiveness of our proposed methods.

Keywords : Image vision、Flat-shape face mask、Defect inspection、Correlation coefficient

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