Apply Machine Vision to the Inspection of PU-Packing

邱奕契,李韋辰

Mechanical Engineering

Engineering

chiou@chu.edu.tw

Abstract

Packing is widely used in machinery to prevent fluid from leaking. Under the pressure of high productivity and high quality, current method using bare eye to inspect becomes inadequate. In view of that, we developed a machine vision-based system for detecting flaws of PU-packing. The system consists of three inspection stations. The first station uses an area-scan camera to check the top and bottom faces of the packing. The second station also uses an area-scan camera to check the interior of the packing with the help of infrared LED backlight. The third station uses two line-scan cameras to inspect the inner and outer surfaces of the packing simultaneously. By using radius variance inspection, projection inspection, coordinate transformation, and normalized grayscale variance inspection methods, seven common defects were successfully detected, including deformations, burs, interstices, scratches, blisters, air bubbles, and inclusions.

Keyword：Automatic Optical Inspection, Line Scan, Flaw Detection, Seal Element