

Crack Detection on Metal Surfaces Using Image Processing Techniques

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Abstract

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Abstract:
It is impossible to imagine an industry without a machine. Huge number of machines are working together in industry. Many times if the failure occurs in machine it becomes a challenging task to identify it. Fault may occur due to various reasons. Here the main focus is on identifying the fault occurred due to the fine crack on metal body. Faulty spare parts can be easily identified and can be replaced. But finding a fault due to the crack on metal body is becomes difficult to work out. To find out such type of faults machine disassembling is the only option. Disassembling any machine is not that much easy task and hence a system is developed here which will help in identifying the crack on metal body without disassembling any machine. It is possible to detect the exact size, location of the crack. Digital image processing concepts are used to identify the crack on a metal body. Scanning of metal body will be done to identify the crack on metal body, with the help of scanning mechanism (using ultrasonic, xray, gamma rays Radiography). The image of metal body will get captured which will get inputted to the systems for the processing purpose and by using the different algorithms of image processing, image will get processed. Firstly image will get converted into black and white form and then the digitization of image will be done. Based on the digitized data, using the segmentation process exact identification of crack location, it's length and width of the crack on metal body is detected.

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I. Introduction
In an industry, if we want to find out the crack or discontinuity in the metal body, there are different techniques already available in the market. The huge amount of research has been carried out in this area. Related to identify the crack in the metal body, there are also number of application for this particular process and this is the need of current scenario to identify the crack on the metal body without disassembling the machine but if the functioning go in a traditional way, where machine will get disassemble first

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