International J. of Engg. Research & Indu. Appls. (IJERIA).
ISSN 0974-1518, Vol. 3, No. III (August 2010), pp. 55-67

ENHANCEMENT OF IR IMAGES TO DETECT METALLIC OBJECTS BY USING IMAGE DECONVOLUTION

MOHAMMED MAQBOOL AHMED, B. G. KRISHNA REDDY AND SARDAR ALI

Abstract

IR infrared imaging technique is used in conjunction with image disconsolation algorithms in order to enhance detection capabilities of the NDT personnel in detecting defects such as pitting voids & Cracks. The technique applied here is the distribution of heat remains fairly homogenous in a healthy metal and can be seen as a flat surface under infrared imaging camera. However, things change Drastically If There Is Discontinuity in the Homogenous metal, such as defects. This change is exploited in this work as an output of a defect function which produces this output when healthy metal images is given as an input to it. Therefore disconsolation methodology has been utilized here to isolate (deconvolve) the defect function and be able to regenerate the output image without any other obscuring elements. This result in the enhancement of the detection of IR Camera & Non Destructive Testing persons.

Keywords: Deconvolution, Infrared Images, Image Enhancement, Blind Deconvolution, Detection of Defects & Morphological Operations