Abstract

Conventionally, it is well-known that diagnosis of defects in an object depends on experience, capability and concentration of the operator. But this process is error prone and liable to subjective considerations such as fatigue, boredom and lapses in operator concentration. This reduces the reliability and consistency of the process thus precluding the undertaking of preventive maintenance with confidence. Also, the process is time consuming and expensive. In this paper, a new automatic defect detection algorithm has been developed in order to identify defects in digital radiographic images. Percolation and Otsu’s thresholding and segmentation algorithms have been used and a new procedure for displaying defects on a screen has been developed. Computer simulation based experiments have been used to demonstrate the effectiveness of the proposed algorithm. The performance of the proposed algorithm is found to be better than the existing defect detection algorithms as the results obtained are impressive with respect to the defect detection rate.


17. X-ray film recycling, accessed 01 May 2015 [online] available from