Automatic Detection of Weld Defects in Pressure Vessels Using Fuzzy Neural Network

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ABSTRACT

The interpretation of possible weld discontinuities in industrial radiography is ensured by human interpreters. The types of defects are porosity, lack of penetration, shrinkage, and fracture. It is thus desirable to develop computer-aided techniques to assist the interpreter in evaluating the quality of the welded joints. Using back propagation algorithm the images of weld defects are trained. The Gaussian Mixture Model (GMM) classifier is used to classify the defects in the input image. The input image is compared with the trained image and defect is detected if defect is present. The nature of the defect is identified and the type of defect is mentioned.