Invariant shape features and Relevance Feedback for Weld Defect Image Retrieval

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Abstract : Relevance feedback mechanism is used in Content-based Image Retrieval (CBIR) to attempt to minimize the amount of interaction between the user and the system required to improve the retrieval system performance. In this work, such system is proposed for weld radiograms in radiographic testing, with the aim of searching from the overall image database, interactively with the radiograph expert, discontinuities similar to some common weld defect types such as, crack, lack of penetration, porosity and solid inclusion. Similarity measures use feature vectors based on shape descriptors invariant to usual geometric transformations. Experiments over the tested database demonstrate that the CBIR gives good results and is practical and promising for the future of welded joint radiographic examination.

Keywords : weld defect, Radiographic testing, shape descriptor, CBIR, relevance feedback