

## **Automated thresholding in radiographic image for welded joints**

### **Abstract**

Automated detection of welding defects in radiographic images becomes non-trivial when uneven illumination, contrast and noise are present. In this paper, a new surface thresholding method is introduced to detect defects in radiographic images of welding joints. In the first stage, several image processing techniques namely fuzzy c means clustering, region filling, mean filtering, edge detection, Otsu's thresholding and morphological operations method are utilised to locate the area in which defects might exist. This is followed by the implementation of inverse surface thresholding with partial differential equation to locate isolated areas that represent the defects in the second stage. The proposed method obtained a promising result with high precision.