Abstract

Non-destructive Evaluation (NDE) has become one of the most widely used technique for flaw detection due to its many advantages. One major problem faced in the process is the pre-processing of the obtained b-scan image to eliminate the system-generated noise. Not many processing techniques exist for the de-noising of such images given the random nature of the noise present. This paper gives an account of some of the de-noising and enhancement techniques which can be used for Time of Flight Diffraction (TOFD) technique for detecting weld defects. Results of the application of these techniques to the actual images obtained from scanning are shown, and the techniques are also compared with the aim of finding the most suitable one. In this paper, we have utilized various filters and transforms and have estimated the results by calculating the Peak Signal-Noise Ratio (PSNR) of each of the processed images.
The final processed images have been tabulated and presented for different real-time scan signals.

References


Index Terms

Computer Science

Signal Processing
Keywords
De-noising  Image Enhancement  Filter  Curvelets  Wavelets  TOFD