

# Elaboration of some signal processing algorithms in ultrasonic techniques: application to materials NDT

**Redouane DRAI, F. SELLIDJ, Mohamed KHELIL, Amar BENCHALA**

**Abstract:** In ultrasonic techniques, information on defect characterization possibilities has required more evolved technique development than classical methods. To obtain a high probability of defect detection, these methods use signal-processing algorithms in order to enhance the signal-to-noise ratio. These methods are also used to discriminate between planar and volumetric defects. In this paper, some signal-processing algorithms are developed and implemented on a computer to allow their utilization in real-time processing of ultrasonics NDT results.

**Keywords :** Cross-correlation function, Hilbert transform, NDT, Split spectrum techniques, Ultrasonics