

Kindly consider this Paper for senate approval.

PH 823

~~PH 823~~

rsr

## Phased Array Ultrasonic and Time of Flight Diffraction

**Phased Array Ultrasonic Testing (PAUT) :** Basic concepts of PAUT , Beam steering and focusing , Beam Scanning patterns- Electronic scanning, Sectorial scanning , Dynamic depth focusing, Delay laws.

**Characteristics of PAUT probe :** Types of PAUT probe, characteristic feature of Linear array probes Scanning patterns, Phased array imaging A scan, B scan, S scan and C scan, Digitization principle,

**Time of Flight Diffraction (TOFD) :** Theoretical basis of TOFD, Accuracy of measurement-probe shoe effect, probe separation error, coupling film thickness, variation in velocity

**Equipments and data(TOFD) :** Equipment requirements ,Data collection systems, Signal amplitudes and comparison with other techniques Processing, display and analysis of TOFD data

**Applications:** Phased Array UT and TOFD , Codes and Standard requirements for PAUT and TOFD inspection.

### References :

1. *Introduction to Phased Array Ultrasonic Technology Applications* , Olympus NDT, 2004.
2. *Phased Array Testing: Basic Theory for Industrial Applications* , Olympus NDT, 2010.
3. *Engineering application of ultrasonic Time of Flight Diffraction* , second editlon ,J. P. Charlesworth and J. A. G. Temple
4. *Non Destructive Testing Handbook Volume 7 (Ultrasonic testing)* , Workman, Gary L. and Kishoni, Doron (technical editors); Moore, Patrick O. (editor), ASNT, 2007

Guide: M. Ashde

H.O.D 7/3/2019

Chairman

96

Signature