Abridged version

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Application of Phased Array Ultrasonic Transducer to Pipe and Tube Inspection

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Synopsis:

Specific flaws or defects on the inside surface of pipe cannot easily be detected by existing non-destructive methods. The authors have developed a new non-destructive tester, using ultrasonic phased array elements, which can inspect on-line the inside surface flaws and other defects. The linear array probe consists of ultrasonic vibration elements sliced into 128 bits, and sensitivity characteristics are kept constant to within 0.4 dB. The linear array probe is mounted in a water bath at the site, and the pipe to be inspected is arranged in a spiral in the bath for scanning electrically by the linear array probe. Ultrasonic echo signals are processed by computer and displayed on a B C scope. This advanced inspection method is applied to seamless pipe, including that in stainless steel, and is inspecting inside surface flaws at a high S/N ratio.

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Application of Phased Array Ultrasonic Transducer

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