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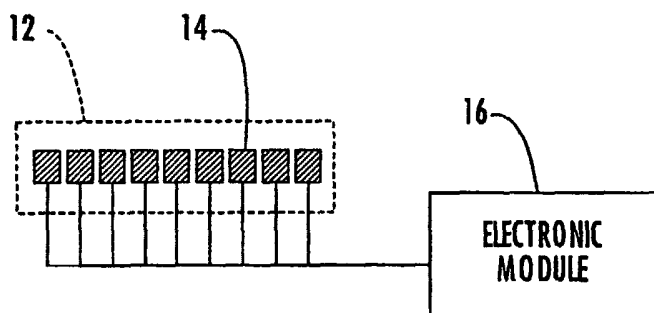
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(54) Title: STRUCTURAL HEALTH MONITORING SYSTEM UTILIZING GUIDED LAMB WAVES EMBEDDED ULTRASONIC STRUCTURAL RADAR



(57) Abstract: A method and device for performing ultrasonic damage detection in a thin-wall structure using an array of embedded Piezoelectric Wafer Active Sensors "PWAS" (12) for the transmission and reception of guided waves and a signal processing methodology based on the beamforming process. The beamforming signal processing has been adapted to the specifics of guided elastic waves traveling in thin-wall structures.

INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : G06F 19/00
 US CL : 702/35; 73/583; 310/328
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B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 USPAT EAST; ONLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MOULIN et al, Piezoelectric Transducer Embedded in a Composite Plate: Application to Lamb Wave Generation, Journal of Applied Physics, September 1997, Vol. 82, No. 5, pages 2049-2055.	1-25
A	US 6,006,163 A (LICHTENWALNER et al) 21 December 1999 (21.12.1999), column 2, lines 62-67; column 3, lines 1-41.	1-25

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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