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Application of automatic ultrasonic testing system based on joint robot in Fusion Engineering

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The articulated arm robot has precise mechanical link, similar to the human arm and it is integrated with the ultrasonic testing system, which can provide users with a flexible automatic ultrasonic testing scheme. The Institute of Plasma Physics, Chinese Academy of Sciences, has introduced a multi joint mechanical arm ultrasonic testing system from the French M2M company, and developed a variety of detection methods based on the system. This paper focuses on the application of the technology in ITER Feeder explosive welding composite plate, EAST W/Cu divertor tube plate weld, CFETR vacuum chamber austenitic stainless steel welding seam detection. The results of test show that the automatic ultrasonic inspection system which based on joint robot has the characteristics of flexible system, high detection efficiency and good repeatability and it will have a wide application prospect in fusion engineering.

Eligible for student paper award?

Yes

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