

عنوان مقاله:

Inspection of Ultrasonic Welded Parts Made of Glass Fiber Reinforced Plastics by Active Thermography Method

محل انتشار:

هفدهمین همایش ملی و ششمین کنفرانس بین المللی مهندسی ساخت و تولید (سال: 1399)

تعداد صفحات اصل مقاله: 4

نویسندگان:

Hamed Tirband - MSc Student of Mechanical Engineering, Tarbiat Modares University/Faculty of Mechanical Engineering.

.Davood Akbari - Assistant Professor, Tarbiat Modares University/Faculty of Mechanical Engineering

Pouya Faraji Kalajahi - Ph.D. Student, Faculty of Mechanical Eng., Tarbiat Modares University, Tehran, Iran

Milad Mohammadian - MSc, Faculty of Mechanical Eng., Tarbiat Modares University, Tehran, Iran

خلاصه مقاله:

Ultrasonic welding is considered as a rapid joining process. Recently application of this method in joining of polymeric parts is increasing. Applicability of this method in joining of thermoplastic materials is confirmed by many researchers. However a few researches have been conducted on applicability of ultrasonic method in joining of thermosets. On the other hand ultrasonic welding of polymeric welded materials specially thermosets may have challenges. One of the major challenges could be the existence of various defects such as detachments, voids and incomplete fusion. Consequently ultrasonic welding of polymeric parts shall be continued by inspections. Numerous nondestructive testing (NDT) methods are introduced to inspection of polymer-based materials. Active IR Thermography is one of the well-known NDT methods in inspection of polymer based materials and polymer-based composites. Therefore it can be used to inspection of welded polymeric parts. In present research two polymeric parts made of glass fiber reinforced epoxy were joined by ultrasonic welding. At the next stage IR thermography was employed to inspection of welded parts with artificial defects and the applicability of IR thermography in detection of various types of defects were investigated.

کلمات کلیدی:

(Ultrasonic welding, Thermography, Glass Fiber Reinforced Plastic (GFRP

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