

자동차 차체 적용을 위한 레이저-아크 하이브리드 용접의 동축 모니터링 시스템 개발

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Development of Coaxial Monitoring System in Laser Arc Hybrid Welding for Automotive Body Application

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Abstract

In order to monitoring the weld pool to enhance the productivity in welding process, coaxial monitoring system for laser-arc hybrid welding was designed in this paper. To obtain reliable image from monitoring system, illumination system, optical filters (band pass filter and ND filter) and shutter speed of camera were optimized. Coaxial monitoring system was verified through experiments according to laser power, welding speed, arc current and interspace between laser and arc. ANOVA (Analysis of Variation) was carried out to identify the influence of process variables on bead widths extracted from captured image of monitoring system.

Key Words : Laser-arc hybrid welding, Coaxial Monitoring, Illumination system, Optical filter, Bead width measurement, ANOVA