ARTÍCULO PUBLICADO

Journal: Applied Optics

Paper: Feasibility study of imaging spectroscopy to monitor the qualityÂ of online welding
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Abstracts:

An online welding quality system based on the use of imaging spectroscopy is proposed and discussed. Plasma optical spectroscopy has already been successfully applied in this context by establishing a direct correlation between some spectroscopic parameters, e.g., the plasma electronic temperature and the resulting seam quality. Given that the use of the so-called hyperspectral devices provides both spatial and spectral information, we propose their use for the particular case of arc welding quality monitoring in an attempt to determine whether this technique would be suitable for this industrial situation. Experimental welding tests are presented, and the ability of the proposed solution to identify simulated defects is proved. Detailed spatial analyses suggest that this additional dimension can be used to improve the performance of the entire system.
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