

Accepted Manuscript

Title: Porosity detection in pulsed GTA welding of 5A06 Al alloy through spectral analysis

Authors: Yiming Huang, Dejin Zhao, Huabin Chen, Lijun Yang, Shanben Chen



PII: S0924-0136(18)30203-6
DOI: <https://doi.org/10.1016/j.jmatprotec.2018.05.006>
Reference: PROTEC 15755

To appear in: *Journal of Materials Processing Technology*

Received date: 7-4-2018
Revised date: 2-5-2018
Accepted date: 3-5-2018

Please cite this article as: Huang Y, Zhao D, Chen H, Yang L, Chen S, Porosity detection in pulsed GTA welding of 5A06 Al alloy through spectral analysis, *Journal of Materials Processing Tech.* (2010), <https://doi.org/10.1016/j.jmatprotec.2018.05.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

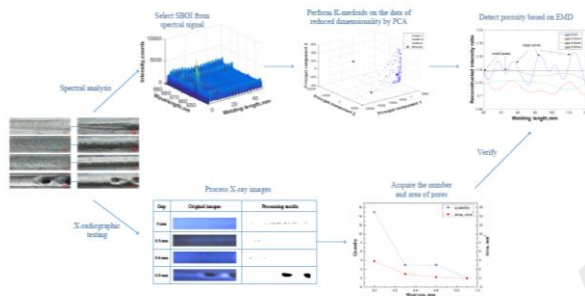
Porosity detection in pulsed GTA welding of 5A06 Al alloy through spectral analysis

Yiming Huang^a, Dejin Zhao^a, Huabin Chen^b, Lijun Yang^{a,*}, Shanben Chen^{b,*}

^a Tianjin Key Laboratory of Advanced Joining Technology, School of Materials Science and Engineering, Tianjin University, Tianjin, 300350, China;

^b Intelligentized robotic welding technology laboratory, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, 200240, China

Graphical abstract



Highlights

- A method using spectral analysis for the detection of porosity produced during the GTAW of Al alloys is proposed. The method has the advantage over conventional non-destructive testing methods of improved efficiency at a low cost.
- In view of the characteristics of spectral data, PCA is implemented as a preprocessing method and a new distance measure is adopted for better clustering results. High silhouette values indicate the good performance of the improved K-medoids algorithm.

^{a,*} Corresponding author.

E-mail addresses: tdyjabc@163.com (Lijun Yang).

^{b,*} Corresponding author.

E-mail addresses: sbchen@sjtu.edu.cn (Shanben Chen).

Download English Version:

<https://daneshyari.com/en/article/7176306>

Download Persian Version:

<https://daneshyari.com/article/7176306>

[Daneshyari.com](https://daneshyari.com)