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主要研究方向

焊接新方法及工艺; 焊接过程的监测与控制; 新一代智能焊接系统

社会兼职

1. 美国焊接学会 (AWS) 会士 (Fellow)
2. 美国电气电子工程师协会 (IEEE) 高级会员
3. 美国机械工程师协会 (ASME) 会员
4. 美国制造工程师协会 (SME) 高级会员
5. "Science and Technology of Welding and Joining" 编委会成员 (2010-)
6. "International Journal of Modeling, Identification and Control" 副主编 (2007-)
7. "Welding Journal" 主审 (Principal Reviewer) (2001-)
8. 美国焊接学会技术论文委员会 (Technical Papers Committee) 成员 (2004-)
9. 国际自动控制联合会 (IFAC) 先进制造委员会美国代表 (2002-)
10. 美国自适应智能系统公司 CEO (2005-)

主要学术成果

发表论文 (代表作):

1. Xiaodong Na, **YuMing Zhang**, YuSheng Liu, Bruce Walcott, "Nonlinear identification of laser welding process," IEEE Transactions on Control Systems Technology, 18(4): 927-934, 2010. (Impact Factor 2.13)
2. **Y.M. Zhang** and Y.C. Liu, "Control of dynamic keyhole process," Automatica, 43(5): 876-884, 2007. (Impact Factor 3.496)
3. W. Lu, **Y. M. Zhang**, and W.-Y. Lin, "Nonlinear interval model control of quasi-keyhole arc welding process," Automatica, 40(5): 805-813, 2004. (Impact Factor 3.496)
4. **Y. M. Zhang** and Y. C. Liu, "Modeling and control of quasi-keyhole arc welding process," Control Engineering Practice, Award Winning Applications-2002 IFAC World Congress, 11(12): 1401-1411, 2003. (Impact Factor: 1.977)
5. G. Wang, G. Huang, and **Y. M. Zhang**, "Numerical analysis of metal transfer in GMAW," Metallurgical and Materials Transactions B, 34(3): 345-353, 2003.
6. **Y. M. Zhang**, C. X. Pan, and A. T. Male, "Improvement of microstructures and properties of 6061 aluminum alloy weldments using double-sided arc welding process," Metallurgical and Materials Transactions A, Vol. 31A(10): 2537-2543, 2000. (Impact Factor: 1.564)
7. **Y. M. Zhang** and R. Kovacevic, "Neurofuzzy model based control of weld fusion zone geometry," IEEE Transactions on Fuzzy Systems, 6(3): 389-401, 1998. (Impact: 3.343)
8. R. Kovacevic and **Y. M. Zhang**, "Neurofuzzy model-based weld fusion state estimation," IEEE Control Systems Magazine, 17(2): 30-42, 1997. (Impact Factor: 2.736)
9. R. Kovacevic, **Y. M. Zhang**, "Real-time image processing for monitoring of free weld pool surface," Journal of Manufacturing Science and Engineering-Transactions of the ASME, 119(2): 161-169, 1997.
10. **Y. M. Zhang**, R. Kovacevic, and L. Li, "Adaptive control of full penetration GTA welding," IEEE Transactions on Control Systems Technology, 4(4): 394-403, 1996. (Impact Factor 2.13)

专利:

1. **Y. M. Zhang**, P. J. Li, and S. B. Zhang, 2002. "Apparatus, system, and related method for sensing a characteristic of a workpiece in an automated process," U.S. Patent, No. 6,437,281.
2. **Y. M. Zhang**, Liguó E, and R. Kovacevic, 2000. "Method for gas metal arc welding," U. S. Patent, No. 6,013,896.
3. **Y. M. Zhang** and S. B. Zhang, 1999. "Method of arc welding using dual serial opposed torches," U. S. Patent, No. 5,990,446.
4. **Y. M. Zhang** and Liguó E, 1999. "Method and system for gas metal arc welding," U. S. Patent, No. 6,008,470.
5. R. Kovacevic and **Y. M. Zhang**, 1996. "Apparatus and method for measuring 3D weld pool shape," U. S. Patent, No. 5,481,085.
6. **Y. M. Zhang** and J. S. Chen, 2009. "Systems and methods to modify gas metal arc welding and its variants," U. S. Patent, non-provisional patent pending
7. **Y. M. Zhang** and K.H. Li, 2008. "Arc welder and related system," U. S. Patent, non-provisional patent pending

学术奖励:

1. James R. Boyd Professor in Electrical Engineering (7/03-present)
2. The A. F. Davis Silver Medal Award for Machine Design, American Welding Society, 2011
3. The A. F. Davis Silver Medal Award for Machine Design, American Welding Society, 2009
4. Adams Memorial Membership Award, American Welding Society, 2005.
5. Best Poster Paper Prize, The 15th Triennial IFAC World Congress, The International Federation of Automatic Control (IFAC), July 2002,
6. Finalist, Best Application Paper, The 15th Triennial IFAC World Congress, IFAC, July 2002
7. The A. F. Davis Silver Medal Award for Machine Design, American Welding Society, 2001
8. The Donald Julius Groen Prize, The Institution of Mechanical Engineers, United Kingdom, 1995