



TRANSACTIONS OF THE CHINA WELDING INSTITUTION



中国机械工程学会主办

第39卷第

Vol. 39

No. 9

2018

焊接学级

第39卷 第9期 2018年9月25日出版

目 次

脉冲激光驱动的 GMAW 短路过渡行为控制 ····································	(1)
基于 CuSi3 焊丝的激光熔钎焊钢/铝异种金属工艺分析在凌越, 米高阳, 胡席远,等	(6)
激光功率对 5356 铝合金激光诱导 MIG 电弧增材制造组织性能的影响 孙承帅, 张兆栋, 刘黎明	(13)
基于视觉注意的 V 形焊接区域清晰图像获取 ······· 陈海永,任亚非,王亚男,等	(19)
6N01 铝合金水冷 MIG 焊接头组织和性能梁志敏,石康柠,李伟坡,等	(25)
基于 L1/L2 极限学习机的熔池熔透状态识别 ··················· 冯 宝, 覃 科, 蒋志勇	(31)
预热温度对 X100 管线钢焊接性的影响 ················徐学利,黄景鹏,郑梗梗,等	(36)
铜/铜超声波焊接的相对运动及断面微观演变柳 健,杨景卫,曹 彪,等	(41)
Al ₂ O ₃ 陶瓷 Ti+Nb/Mo 金属化对其与 Kovar 合金钎焊连接的组织和力学性能的影响	
辛成来,李 宁,颜家振	(45)
电子封装中 Cu/Sn/Cu 焊点组织演变及温度对 IMC 立体形貌影响梁晓波,李晓延,姚 鹏,等	(49)
旁路耦合微束等离子弧热特性及焊缝成形特点李 挺,黄健康,陈秀娟,等	(55)
无坡口对接焊缝特征角点检测方法王丈超,高向东,丁晓东,等	(61)
钛合金针状焊缝组织的超塑性变形机理江训焱,程东海,陈益平,等	(65)
Al-glass-Al 阳极键合界面及力学性能的分析陈大明,胡利方,时方荣,等	(71)
微合金化元素对离心铸造炉管焊接接头组织和性能影响刘春娇,钱 兵,陈学东,等	(76)
Snake 模型和遗传算法在特殊焊缝提取中的应用 吴 鑫,李 强,齐铂金	(83)
Cu-Pd-V 钎料真空钎焊 C _l /SiBCN 复合材料的界面组织与性能 ·······李文文,熊华平,陈 波,等	(90)
纳米颗粒增强 SAC0307 锡膏焊点的分析 赵智力,刘 鑫,李 春,等	(95)
固定式排水罩水下局部干法 CO ₂ 气体保护焊焊接工艺优化及接头性能分析 ······	
张帅锋,程方杰,王东坡,等	(99)
厚板转子钢多层多道焊接头不同微区断裂韧度的分析刘延景,崔海超,芦凤桂,等 (105)
采用金箔钎焊连接石墨与 Hastelloy N 合金···································	109)
水浴 PTIG 微变形电弧增材制造工艺 段梦伟, 彭 勇, 周 琦, 等 ((113)
高频复合双钨极氩弧焊方法与数字电源研制 吴统立,王克鸿,杨嘉佳,等((117)
基于视觉的动力电池焊后质量检测 吴博尧,秦 磊,张庆茂,等 (122)
苯 子烧田	τ.)

[期刊基本参数] CN23-1178/TC * 1980 * m * A4 * 128 * zh * P * ¥ 15.00 * 5800 * 24 * 2018-09

责任编辑: 郑 红 编辑: 张基隆

TRANSACTIONS OF THE CHINA WELDING INSTITUTION

Vol. 39 No. 9 September 2018

CONTENTS

Pulsed laser controlled short-circuiting metal transfer in GMAW CHEN Shujun, JIA Yazhou, XIAO Jun, et al	(1)
Microstructure and mechanical properties of laser welding-brazed aluminum	
alloy to steel with CuSi3 filler metal ······ CUI Lingyue, MI Gaoyang, HU Xiyuan, et al	(6)
Effect of laser power on microstructure and properties of 5356 aluminum alloy	
by laser induced MIG arc additive manufacturing · · · · · · SUN Chengshuai, ZHANG Zhaodong, LIU Liming	(13)
$Clear\ image\ acquisition\ of\ V-shaped\ welding\ area\ based\ on\ visual\ attention\ \cdots\ CHEN\ Haiyong,\ REN\ Yafei,\ WANG\ Yanan,\ et al$	(19)
Microstructure and mechanical properties of water-cooled MIG welded joints of 6N01 aluminium alloy	
LIANG Zhimin, SHI Kangning, LI Weipo, et al	
ELM with L1/L2 regularization constraints ····· FENG Bao, QIN Ke, JIANG Zhiyong	(31)
Influence of preheating temperature on weldability of X100 pipeline steel	
XU Xueli, HUANG Jingpeng, ZHENG Genggeng, et al	(36)
Relative motion and its relation to microstructure evolution during high-power	
ultrasonic welding of copper sheets ···········LIU Jian, YANG Jingwei, CAO Biao, et al	(41)
Investigation of brazing joints of Al ₂ O ₃ ceramics to Kovar alloys by Ti+Nb/Mo metallization	
XIN Chenglai, LI Ning, YAN Jiazhen	(45)
Microstructural evolution of Cu/Sn/Cu joints and effect of temperature on three-dimensional	
morphology of IMCs in packaging technology ················LIANG Xiaobo, LI Xiaoyan, YAO Peng, et al	(49)
Thermal characteristics and weld formation of double-electrode micro-plasma arc welding	
LI Ting, HANG Jiankang, CHEN Xiujuan, et al	(55)
Detection of non-groove butt joint feature based on corner principle	
WANG Wenchao, GAO Xiangdong, DING Xiaodong, et al	(61)
Superplastic deformation mechanism of acicular weld microstructure of titanium alloy	
JIANG Xunyan, CHENG Donghai, CHEN Yiping, et al	(65)
Interfacial investigation and mechanical properties of Al-glass-Al anodic bonding process	
······································	(71)
Effect of microalloying elements on the microstructural evolution and mechanical properties of weld	
joints of centrifugally cast furnace tubes	
Application of Snake model and genetic algorithm in special weld seam extraction	(83)
Microstructure and mechanical property of Cf/SiBCN composite joint brazed with Cu-Pd-V filler alloy	
LI Wenwen, XIONG Huaping, CHEN Bo, et al	(90)
$Study \ on \ solder \ joint \ of \ SAC0307 \ solder \ paste \ reinforced \ by \ nano \ Ag/Cu \ particles \\ \cdots \\ ZHAO \ Zhili, \ LIU \ Xin, \ LI \ Rui, \ et \ al \ Ag/Cu \ particles \\ \cdots \\ ZHAO \ Zhili, \ LIU \ Xin, \ LI \ Rui, \ et \ al \ Ag/Cu \ particles \\ \cdots \\ ZHAO \ Zhili, \ LIU \ Xin, \ LI \ Rui, \ et \ al \ Ag/Cu \ particles \\ zhad \ Zhili, \ LIU \ Xin, \ LI \ Rui, \ et \ al \ Ag/Cu \ particles \\ zhad \ Zhili, \ Zhili$	(95)
Optimization of underwater welding process in stationary local dry cavity and	
analysis of welding joint properties	(99)
Research on the fracture toughness of micro zone in the joint based on multi-layer and	
multi-pass welding of rotor steel ··················LIU Yanjing, CUI Haichao, LU Fenggui, et al	(105)
Brazing graphite to Hastelloy N superalloy using pure Au foil · · · · · · · LIU Ping, GU Xiaolong, HE Yanming, et al	(109)
Micro-deformation P-TIG wire and arc addictive manufacture under water bath	
	(113)
High frequency hybrid twin-electrode TIG welding method and digital power supply design	
	(117)
Research on vision-based post-welding quality inspection of power battery WU Boyao, QIN Lei, ZHANG Qingmao, et al	(122)