

Advanced Laser Applications Workshop 2011

(ALAW 2011)

**Plymouth, Michigan, USA
3-5 May 2011**

ISBN: 978-1-62276-349-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by Fabricators & Manufacturers Association, International (FMA)
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact Fabricators & Manufacturers Association, International (FMA)
at the address below.

Fabricators & Manufacturers Association, International (FMA)
833 Featherstone Road
Rockford, IL 61107

Phone: (815) 399-8700

Fax: (815) 399-7679

info@fmanet.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

A Laser Cutting and Welding System for Splicing Strip Alloys	1
<i>Scott Boynton</i>	
Advances in Finite Element Simulation of Laser Welding Processes	11
<i>Arjaan Buijk</i>	
Fiber Laser Welding for Batteries and Fuel Cells	22
<i>Jay Eastman</i>	
Overview of the Hybrid Laser Welding Applications in Transportation	41
<i>Jen Christian</i>	
Laser Welding in Power Train-System Considerations	60
<i>Christian Kvas</i>	
Laser Peening for Fatigue Improvement - Technology and Applications	67
<i>David Lahrman</i>	
Improving Dimensional Accuracy of Instrument Panel Structures using Remote Laser Welding	79
<i>Gordon Leslie, Brandon Landino</i>	
Advanced Laser Welding Development for Lightweight Materials for Aerospace	86
<i>Steffen Mueller, Craig Bratt</i>	
Fiber vs CO2 for Laser Cutting	99
<i>Rick Neff</i>	
Quality Inspection for Laser Edge Welding	146
<i>Michael Poss</i>	
Welcome to ALAW	163
<i>Stan Ream</i>	
Reducing Weld Defects Through Optical Process Control	191
<i>Cornelius Sawatzky</i>	
Latest Advancement in Laser Cutting of CFRP - A Project Report	197
<i>Marco Schumann, R. Weber, M. Hafner, A. Michalowski, T. Graf</i>	
Laser Welding of Copper and Copper Alloys	208
<i>Geoff Shannon</i>	
Remote Laser Welding with Fiber Lasers	219
<i>Eric Stiles</i>	
S-in motion Derived Laser Welded Blank Applications using AHSS	233
<i>Gagan Tandon</i>	
Hybrid Laser Welding	239
<i>Brian Victor</i>	
Remote Laser Welding of Automotive Seating	256
<i>Mark S. Williamson</i>	
Choosing the best Wavelength for the Application in 3D Laser Processing	272
<i>Stephan Ziermann</i>	
Author Index	