14th Annual Automotive Laser Application Workshop

Lasers are Ready. Are You?

March 29-30, 2006
The Inn at St. Johns, Plymouth MI

>> Fraunhofer Pre-Conference March 28, 2006

For more information or to register, visit http://cpd.engin.umich.edu
In today's competitive marketplace, automotive manufacturers and suppliers have come to appreciate the cost effectiveness, flexibility, and production performance attributes of lasers. ALAW 2006 outlines how several automotive manufacturers and suppliers have implemented these attributes through a full range of laser material processing technologies.

Benefits
• Latest innovative technological information regarding cutting edge laser development
• Networking with experts in the laser industry from around the world
• Participate in discussions with worldwide laser experts

ALAW 2006 provides a unique opportunity for manufacturing executives and engineers to network with counterparts from around the world, gain knowledge and interchange ideas and diverse viewpoints.

The University of Michigan, College of Engineering, Center for Professional Development has sponsored ALAW for fourteen years, collectively attracting 4300 participants from around the world.

Dr. Jyoti Mazumder, University of Michigan Professor and Director of "CLAIM" Center for Laser Aided Manufacturing has assisted with the conference. Frank Di Pietro, is the founding chair of the workshop.

Who Should Attend
• Manufacturing, Production, Product Design and Research/Development Engineers
• Purchasing and Financing Professionals
• Anyone interested in using and/or developing flexible applications for automotive laser material processing systems to reduce costs, improve quality and provide flexible laser manufacturing

ALAW 2006 has 27 presentations, which include:

Partner Conferences
ALAW European Cooperation Partner is Laser Congress, Wolfsburg, Germany, October 12, 2006
ALAW Japan Cooperation Partner is the Japanese Automotive Laser Application Workshop (JALAW), Nagoya, Japan (TBA)
ALAW web partner is www.laserglobalservices.com
Fraunhofer Pre-Conference

When: March 28, 2006
Where: The Inn at St. Johns
Fee: $100 if not attending ALAW
Fee: $85 to attend ALAW & Pre-Conference

Schedule of Events

8:00 a.m. Registration (until 9:00 a.m.)
9:00 a.m. Welcome
Frank Di Pietro, Chairman, ALAW 2006

SESSION 1: OVERVIEW OF FRAUNHOFER
9:05 a.m. Fraunhofer in Germany and the Fraunhofer Surface Technology and Photonics Alliance
Eckhard Beyer, Fraunhofer IWS Dresden
9:25 a.m. Overview Fraunhofer Center for Coatings and Laser Applications (CCL)
Eric Stiles, CCL
9:35 a.m. Overview Fraunhofer Center for Laser Technology (CLT)
Stefan Heinemann, CLT
9:45 a.m. Keynote Presentation – New Lasers for New Applications
Reinhart Poprawe, Fraunhofer ILT Aachen
10:15 a.m. Coffee Break

SESSION 2: MICROPROCESSING AND SYSTEM TECHNOLOGIES
Chair: Stefan Heinemann, CLT
10:30 a.m. Microprocessing (from Nano to Femto)
Wolfgang Schulz, Fraunhofer ILT Aachen
10:50 a.m. Microprocessing with Pulsed UV and Fiber Laser
Hans Herfurth, CLT
11:10 a.m. Special Optics and Systems
Tobias Schmidt, CLT
11:30 a.m. Laser Developments at the CLT
Stefan Heinemann, CLT
12:00 p.m. Lunch Break

SESSION 3: WELDING AND CUTTING
Chair: Eric Stiles, CCL
1:00 p.m. Remote System for High Beam Quality Solid State Lasers
Annett Klotzbach, Fraunhofer IWS Dresden
1:20 p.m. Laser Welding Technology
Berndt Brenner, Fraunhofer IWS, Dresden
1:40 p.m. Laser Welding in the Aircraft Industry
2:00 p.m. Combined Cutting and Welding
Dirk Petring, Fraunhofer ILT, Aachen
2:20 p.m. Coffee Break

SESSION 4: SURFACE AND GENERATIVE PROCESSES
Chair: Hans Herfurth (CLT)
2:40 p.m. Off-line Programming Software Package for Laser Hardening and Cladding Using CNC Machines and Robots
Steffen Nowotny, Fraunhofer IWS, Dresden
3:00 p.m. Generative Processes: 3-D Printing of Metals
Konrad Wissenbach, Fraunhofer ILT Aachen
3:20 p.m. Laser Cleaning in Military Maintenance Depots
Hans Herfurth, CLT
3:40 p.m. Outlook: High Power Fiber Laser Applications – The Future?
Eckhard Beyer, Fraunhofer IWS, Dresden
4:30 p.m. Fraunhofer Open House: Live Demonstrations of Laser Technology
Fraunhofer USA facility (see open house panel for details)
Wednesday
March 29, 2006
Continental Breakfast and Review of Sponsor Exhibits
7:30-8:25 a.m.
Welcoming Remarks
Professor Jyoti Mazumder, Ph.D., Director, Center for Laser Aided Intelligent Manufacturing (CLAIM), University of Michigan, Ann Arbor, MI USA
8:25-8:30 a.m.
SESSION 1: PLENARY SESSION
Plenary Session Chair: Frank A. Di Pietro, Chairman ALAW 2006
Presentation
R. Eckhard Beyer, Prof. Dr.-Ing habil, Director, Fraunhofer Institute, Material and Beam Technology, Dresden, Germany
8:30-9:00 a.m.
Walter Haimerl, Managing Director, TRUMPF Inc. Laser Technology Center, Plymouth, MI, USA
9:00-9:30 a.m.
Presentation: Fiber Laser R&D at the High Power Solid-State Lasers’ Branch, Air Force Research Laboratory
Richard Berdine, Senior Scientist, AFRL/DELO, Air Force Research Laboratory, Kirtland Air Force Base, New Mexico USA
9:30-10:00 a.m.
Networking Break
10:00-10:30 a.m.
SESSION 2: AUTOMOTIVE COMPONENTS LASER APPLICATIONS
Session Chair: David A. Belforte, Publisher/Editor-in-Chief, “Industrial Laser Solutions for Manufacturing” Magazine, Sturbridge, MA, USA
10:30 a.m.-12:00 p.m.
Presentation: Laser Welding of Fuel Cell Components
Stan Ream, Technology Leader, Systems Integration, Team Leader, Fuel Cell Fabrication, Edison Welding Institute, Columbus, OH, USA
10:30-11:00 a.m.
Presentation: Laser Material Processing of Automotive Components
Tom Kugler, Applications Engineer Manager, GSI Group, Laser Division, Novi, MI, USA
11:00-11:30 a.m.
Presentation: From Coil to Laser Welded Tube
Wolfgang Weil, President, Weil Engineering, GmbH, Germany
11:30 a.m.-12:00 p.m.
Networking Lunch
12:00-1:00 p.m.
SESSION 3: REMOTE LASER WELDING TECHNOLOGY AND APPLICATION
Session Chair: Michael D. Repiec, GM Technical Fellow, Principal Engineer-Body Assembly, Body Engineering Center – Manufacturing, General Motors Corporation, Pontiac, MI, USA
1:00-3:00 p.m.
Presentation: Owning the Remote Beam Laser Welding Process with DoE’s and Essential Regression Models, Beam Quality and Weld Quality Monitoring
Carl Klein, Mark Williamson, Anthony Kestian, Johnson Controls Inc., Milwaukee, WI, USA
1:00-1:30 p.m.
Presentation: Results and Experience of the Chrysler Group Robscan Production Trial
Doug Goin, Senior Manager of DaimlerChrysler AME BIW, Standards and Technology, DaimlerChrysler Corporation, USA
1:30-2:00 p.m.
Presentation: Remote Welding is Changing Process Chain in Production
Dr. –Ing. Klaus Kastel, TRUMPF Inc. Application Department Laser and Systems, TRUMPF Laser-und Systemtechnik, GmbH, Ditzingen, Germany
2:00-2:30 p.m.
Presentation: Robotic Remote Laser Welding with Fiber Lasers
Eric Stiles, Division Manager, Fraunhofer USA, Center for Coatings and Laser Applications, Plymouth, MI, USA
2:30-3:00 p.m.
Networking Break
3:00-3:30 p.m.
SESSION 4: DESIGN FOR LASER PROCESSING
Session Chair: Sheila Jensen, President & CEO, Visotek Inc., Plymouth, MI, USA
3:30-5:00 p.m.
Presentation: The Advantages of Designing the Product to Suit the Process in Laser Welding
Peter Busuttil, Manager Process Development, Lasers, Comau Pico, Southfield, MI, USA
3:30-4:00 p.m.
Presentation: Design for Laser Processing
Stefan Heinemann, Executive Director, Fraunhofer USA, Center for Laser Technology, Plymouth, MI, USA
4:00-4:30 p.m.
Presentation: Laser Welding – Keys to Success
David Havrilla, Product Manager YAG Lasers, TRUMPF Inc. Laser Technology Center, Plymouth, MI, USA
4:30-5:00 p.m.
Networking Hospitality Session & Review of Sponsor Exhibits
5:00-8:00 p.m.
Thursday

Continental Breakfast and Review of Sponsor Exhibits
7:30-8:30 a.m.

SESSION 5: PLENARY SESSION 2
Plenary Session Chair, Frank A. DiPietro, Chairman, ALAW 2006
8:30-10:00 a.m.

Presentation: The Present and Future of Laser Technology in the Automotive Industry
Klaus Loeffler
8:30-9:00 a.m.

Presentation: Lasers in European Automotive Manufacturing: Historical Review and Recent Trends
Dirk Petring, Dr. Rer. Mat. Head of Department, Cutting and Joining, Fraunhofer Institute of Laser Technology, Aachen, Germany
9:00-9:30 a.m.

Presentation: Fiber Laser Mission and Automotive Market
Valentin Gapontsev, President, IPG Photonics Corporation, Oxford, MA, USA
9:30-10:00 a.m.

Networking Break
10:00-10:30 a.m.

SESSION 6: EUROPEAN AUTOMOTIVE LASER APPLICATIONS
Session Chair: Yashuhiro Yamamoto, Project Manager, Product Engineering, Toyota Motor Manufacturing, North America, Inc.
10:30 a.m.-12:00 p.m.

Presentation: Extensive Laser Processing on the New Volvo C-70 Convertible
Johnny K. Larsson and Niclas Palmquist, Advanced Body Engineering, Volvo Car Corp., Goteburg, Sweden
10:30-11:00 a.m.

Presentation: Variable Focal Length and Flexibility – A Requirement for Laser Remote Welding in Body-in-White
Dr. Peter Rippl, Manager, Process Technology; Kuka Group, Schweissanlagen, GmbH, Augsburg, Germany
11:00-11:30 a.m.

Presentation: Smart Laser – The New Comau Remote Welding Robot
Roberto Menin, Comau Advanced Engineering, Body Welding and Assembly Group, Torino, Italy
11:30 a.m.-12:00 p.m.

Networking Lunch
12:00-1:00 p.m.

SESSION 7: EMERGING LASER TECHNOLOGIES
Session Chair: Susan Sprentall, Precitec Inc., New Hudson, MI, USA
1:00-3:30 p.m.

Presentation: Operating Costs for Laser Systems and Solutions for Cost Reductions
Tom Gotts, President, Robolase Solution Inc., Chapin, SC, USA
1:00 – 1:30 p.m.

Presentation: New Cost Advantages For Laser Blanking for Automotive Applications
Michael Beneneck, General Manager, Wittrax LLC., Ortonville, MI, USA
1:30-2:00 p.m.

Presentation: Plastics Welding for High Volume Automotive Component Production
Rick Davis, Plastics Industry Specialist, Rofin-Sinar Inc., Plymouth, MI, USA
2:00-2:30 p.m.

Presentation: Laser Processing Heads for Automotive Manufacturing – Lessons Learned and Worldwide Case Studies
Dr. –Ing. Bjorn Wedel, HighDyn Laser Technologies, Gmbh, Stahnsdorf, Germany
2:30-3:00 p.m.

Networking Break
3:00-3:30 p.m.

SESSION 8: LASERS IN JAPANESE AUTOMOTIVE APPLICATIONS
Session Chair: Koichi Ishihara, Director, HTS Division, Hanwa Co. Ltd., Japan
3:30-5:00 p.m.

Presentation: Quick History of Automotive Applications in Japan
Koichi Ishihara, Director, HTS Division, Hanwa Co. Ltd., Nagoya, Japan
3:30-4:00 p.m.

Presentation: Laser Welding Applications of Nissan Car Bodies
Taishi Tarui, Advanced Vehicle Manufacturing and Prototype Technology Department, Nissan Motor Co., Ltd., Japan
4:00-4:30 p.m.

Presentation: Application of Laser Welding for Automobile Production at Toyota Motor Corporation
Koichi Ishihara, Project Manager, Production Engineering, Toyota Motor Manufacturing North America, USA
4:30-5:00 p.m.

Closing Comments
Frank A. DiPietro, Chairman, ALAW 2006
5:00 p.m.

Open House
TRUMPF Inc.
5:30-9:00 p.m.

2006 Agenda

Automotive Laser Applications Workshop
ALAW 2006 Open Houses

March 28

Fraunhofer USA

See the interactive relationship between laser development and laser applications and network with highly qualified engineers and scientists from various competencies.

Fraunhofer Open House
Date: Tuesday, March 28, 2006
Time: 4:00 p.m. - 8:00 p.m.
Live demonstrations of laser technology and networking followed by appetizers, drinks and live music.

Location: Fraunhofer USA
46025 Port Street
Plymouth, MI 48170
(734) 354-6300

For questions and R.S.V.P., please contact Sharon Tubbs:
Call: (734) 354-6300 ext. 205
E-mail: stubbs@clt.fraunhofer.com

March 30-31

TRUMPF

See and learn about the latest state-of-the-art laser equipment, processes, and solutions at the annual TRUMPF Laser Technology Days 2006. This year’s focus will be on laser brazing, laser processing of high strength steels, and automotive power train welding.

TRUMPF Open House
Date: Thursday, March 30, 2006
Time: 5:30 – 9:00 p.m.
A networking event including complimentary appetizers and drinks.

Location: TRUMPF Inc.
Laser Technology Center
47711 Clipper Street
Plymouth Township, MI 48170
http://www.us.trumpf.com

For questions and R.S.V.P., please contact Paula Harrington:
Call: (734) 354-9770, ext. 243
Fax: (734) 354-9769
Email: paula.harrington@us.trumpf.com

TRUMPF Technical Symposium
Date: Friday, March 31, 2006
Time: 8:30 a.m. – 3:00 p.m.
This information-packed day includes a complimentary breakfast and lunch buffet.

Location: TRUMPF Inc.
Laser Technology Center
47711 Clipper Street
Plymouth Township, MI 48170
http://www.us.trumpf.com

For questions and R.S.V.P., please contact Paula Harrington:
Call: (734) 354-9770, ext. 243
Fax: (734) 354-9769
Email: paula.harrington@us.trumpf.com
Register Here …

☐ Yes, I want to register for the ALAW 2006 Workshop!
Complete this form or register online at http://cpd.engin.umich.edu
or call (734) 647-7200 or Fax (734) 998-6127

☐ Register me for the entire ALAW Workshop March 28-30, 2006 ($895)
☐ Register me for ALAW March 29-30, 2006 only ($795)
☐ Register me for the Fraunhofer Pre-Conference March 28, 2006 only ($100)
☐ I will attend the Open House at Fraunhofer, March 28, 2006
☐ I will attend the Open House at TRUMPF Inc., March 30, 2006

Conference Location
The Inn at St. Johns
(formerly St. John’s Conference Center)
44045 Five Mile Road
Plymouth, MI 48170
(734) 414-0600
http://www.stjohnsgolfconference.com/

Conference Lodging
The Inn at St. Johns
(formerly St. John’s Conference Center)
44045 Five Mile Road
Plymouth, MI 48170
(734) 414-0600
Room Block:$119.00* (mention ALAW 2006)
*Make your reservation by 3/12/06 to receive this rate

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Payment of Fee:
Enrollment in CPD programs requires payment of fees or arrangements for payment prior to the start of program. Please mail check, purchase order or government contracts with your application and make them payable to the University of Michigan-CPD designating the name of the applicant(s) on the check.

Cancellation Policy:
Due to the inherent costs of establishing, holding, and refilling participants slots along with associated costs of course materials, the Center for Professional Development has established the following cancellation charge schedule. Please note cancellation fees are based on the number of weeks from the course start date the written request is received: or more weeks prior — 10% of program fee; 3 weeks prior — 50% of program fee; within 2 weeks — 75% of program fee. All cancellation notices must be received in writing, either by mail, fax, or email.

Transfer Policy:
One transfer is allowed per registration and must be received in writing (by mail, fax, or email). Requests received within six weeks of the class start date will incur a $250 administrative fee.

Substitution Policy:
Qualified substitutes for registrations can be accommodated with advance written notice.

Travel Refund Policy:
CPD reserves the right to amend or cancel these programs. If cancellation occurs, CPD is liable only to refund registration fee paid (CPD recommends refundable airfare be purchased).

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Contact Jennifer Knowles (734) 615-4342, jknowles@umich.edu to inquire about sponsoring ALAW 2006.