

FRAUNHOFER INSTITUTE FOR LASER TECHNOLOGY ILT

INVITATION

LaP 2016
2ND CONFERENCE ON LASER POLISHING
APRIL 26-27, 2016 IN AACHEN, GERMANY



WELCOME



2ND CONFERENCE ON LASER POLISHING – LaP 2016

Scope of the conference

Thanks to more than 70 international scientists and laser technology users from various industrial and scientific sectors, the 1st Conference on Laser Polishing LaP 2014 was a great success. During five sessions, 14 speakers from six countries expounded on topics dealing with the laser polishing of glass and metals. The presentations showed first industrial applications as well as new scientific developments.

The success of the 1st Conference on Laser Polishing LaP 2014 reflects the great interest the scientific and industrial communities have in this new manufacturing process. There is clearly a significant demand for a cost-effective, automated finishing process as a viable alternative to conventional abrasive methods.

To continue this successful exchange, the 2nd Conference on Laser Polishing LaP 2016 will be held from April 26 to 27, 2016 in Aachen. The conference aims to present scientific and application-related results on laser polishing, to bring together the people working all over the world on laser polishing and to promote and stimulate discussions and new scientific cooperation.

The conference language is English.

Main topics

- Laser polishing of metals
(functional and design surfaces, additive manufactured parts, dies, tools)
- Laser polishing of glass and laser-based processes for manufacturing optical surfaces
- Laser polishing of other materials such as ceramics
- Structuring by laser remelting (not structuring by ablation)

We are looking forward to meeting you at the 2nd Conference on Laser Polishing LaP 2016.

Sincerely,

A handwritten signature in black ink, appearing to read 'Willenborg', written over a light grey rectangular background.

Dr. Edgar Willenborg
Fraunhofer Institute for Laser Technology ILT

PROGRAM

APRIL 26, 2016



1ST DAY, TUESDAY, APRIL 26, 2016

8:30 REGISTRATION & COFFEE RECEPTION

9:00 SESSION I

Chair: Dr. Dr. André Temmler

Welcome and introduction:

Process fundamentals and industrial applications of laser polishing

E. Willenborg, Fraunhofer ILT, Aachen, Germany

Keynote presentation:

Excimer laser surface processing in the automotive industry

G. Bonati, H. Eckermann, R. Delmdahl

Coherent LaserSystems GmbH & Co. KG, Göttingen, Germany

Removing cosmetic defects on fused silica optics by using a CO₂ laser

P. Cormont, G. Gaborit, S. Cavaro, T. Doualle, L. Gallais, L. Lameignère, J.-L. Rullier

CEA CESTA, Le Barp, France

Aix-Marseille Université, Institut Fresnel, France

10:30 COFFEE BREAK

11:00 SESSION II

Chair: Prof. Frank Pfefferkorn

Laser polishing of ground aluminum surfaces with high energy cw laser

B. Burzic, M. Hofele, S. Mürdter, H. Riegel

Laser Application Center, Aalen University, Germany

**Enhancement of area rate of laser macro-polishing
by non-rotational symmetric intensity distributions**

J. Kumstel, Fraunhofer ILT, Aachen, Germany

Feasibility study of picosecond laser polishing of coinage dies

E.V. Bordatchev, S. Bodor, B. Devereaux

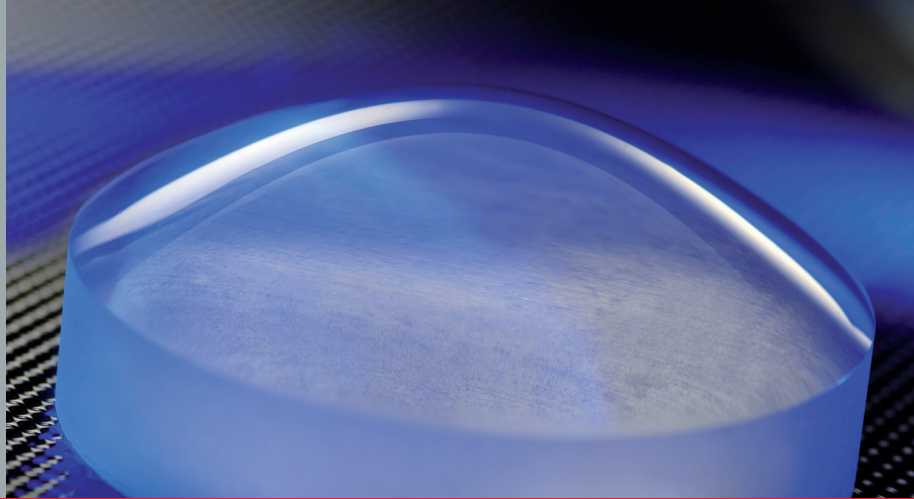
National Research Council of Canada, London, Ontario, Canada

Royal Canadian Mint, Ottawa, Ontario, Canada

12:30 LUNCH

PROGRAM

APRIL 26, 2016



1ST DAY, TUESDAY, APRIL 26, 2016

13:30

SESSION III

Chair: Dr. Kerstin Hecht

Optics polishing using ultrafast laser radiation

J. Qiao, L.L. Taylor, J. Qiao

Rochester Institute of Technology, USA

University of Science and Technology, Liaoning, P.R.China

CO₂ laser beam polishing on different sample geometrics of glass material

A.-M. Schwager, J. Bliedtner, K. Hecht, D. Gebauer

Ernst-Abbe-Hochschule Jena, Germany

Laser polishing and shape correction of optical surfaces

C. Weingarten, Fraunhofer ILT, Aachen, Germany

Aspects in laser polishing of precision optical components

R. Rascher, C. Schopf, C. Wünsche

Laboratory Optical Engineering, Technische Hochschule Deggendorf, Germany

15:30

LAB-TOUR / POSTER SESSION / COFFEE BREAK

Visit of the Laser Polishing Lab at Fraunhofer ILT and poster session

17:30

End of lectures and Lab-tour

20:00

CONFERENCE DINNER

at Rastkeller, Markt 40, Aachen

23:00

End of first day

PROGRAM

APRIL 27, 2016



2ND DAY, WEDNESDAY, APRIL 27, 2016

8.30 REGISTRATION & COFFEE RECEPTION

9.00

SESSION IV

Chair: Christian Weingarten

Keynote Presentation:

Direct-write laser fabrication of micro-optics for collimation and beamshaping

R. McBride, PowerPhotonic, Dalgety Bay, Scotland

CO₂ laser-based fabrication of optically-smooth diffractive optical elements on glass substrates

K.L. Wlodarczyk, N.J. Weston, D.P. Hand
Heriot-Watt University, Edinburgh, UK
Renishaw plc, Edinburgh, UK

SiC micro-region polishing using 248nm excimer lasers

Z. Li, T. Chen, J. Dong
Beijing University of Technology, P.R. China

10:30

COFFEE BREAK

11:00

SESSION V

Chair: Prof. Evgueni Bordatchev

Laser finishing - improving the surface quality of additively manufactured stainless steel and titanium components

W.S. Gora, Y. Tian, M. Ardron, R.J. Maier, P. Prangnell, N.J. Weston, D.P. Hand
Heriot-Watt University, Edinburgh, UK
University of Manchester, UK / Renishaw plc, Edinburgh, UK

Laser polishing of additive manufactured part

S. Marimuthu, A. Triantaphyllou, M. Antar, D. Wimpenny, H. Morton, M. Beard
The Manufacturing Technology Centre, Coventry, UK
Loughborough University, UK

Surface roughness of selective laser melting stain steel parts post-processed by laser re-melting

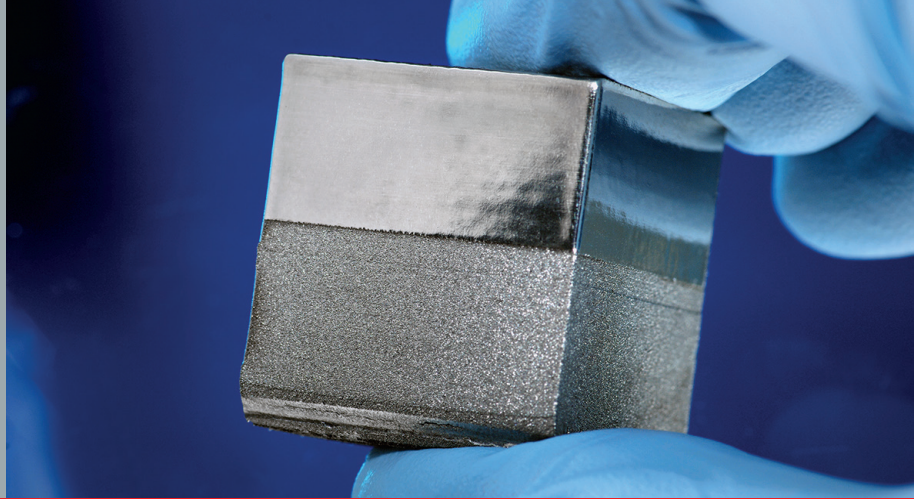
K. Alrbaey, D. I. Wimpenny, A. Moroz
De Montfort University, Leicester, UK

12:30

LUNCH

PROGRAM

APRIL 27, 2016



2ND DAY, WEDNESDAY, APRIL 27, 2016

13:30

SESSION VI

Chair: Prof. Harald Riegel

Pulsed laser micro polishing of edge features

J.D. Morrow, B. Richter, K. Klingbeil, J. Vockrodt, N. Duffie, F.E. Pfefferkorn
University of Wisconsin-Madison, USA
LasX Industries, St Paul, Minnesota, USA

Structuring by laser remelting – Influence of the material on the structure formation

A. Temmler, RWTH Aachen University, Germany

Microstructure and residual stresses of laser remelted and laser structured surfaces of a hot work tool steel

J. Preußner, S. Oeser, W. Pfeiffer, A. Temmler
Fraunhofer IWM, Freiburg, Germany
RWTH Aachen University, Germany

15:00

COFFEE BREAK

15:30

SESSION VII

Chair: Dr. Andreas Weisheit

Applicability of laser polishing on cold spray Al alloy SST A050

E.V. Bordatchev, O.R. Tutunea-Fatan, J. Villafuerte
National Research Council of Canada, London, Ontario, Canada
Western University, London, Ontario, Canada
CenterLine Ltd., Windsor, Ontario, Canada

Implementing the laser polishing for improving the surface quality of vacuum ion-plasma coatings

V. Plikhunov, O. Oreshkin
National Institute of Aviation Technologies, Moscow, Russia

Nd:YOV₄ laser polishing on Cr₃C₂-25(Ni-20Cr) HVOF spray coating

L. Giorleo, E. Ceretti, M. Gelfi, G.M. La Vecchia, C. Giardini
Department of Mechanical and Industrial Engineering, University of Brescia, Italy
Department of Management, Information and Prod. Eng., University of Bergamo, Italy

Closing

Dr. Edgar Willenborg, Fraunhofer ILT, Germany

17:00

End of conference



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Registration

Please register before March 15, 2016. The conference fee is 345,- Euro payable on invoice by attendees as well as speakers. The online registration form can be found at: <http://www.ilt.fraunhofer.de/en/fairs-and-events/events/lap-2016.html>

Conference venue

Fraunhofer Institute for Laser Technology ILT
Steinbachstraße 15, 52074 Aachen, Germany
Directions can be found at: www.ilt.fraunhofer.de/en/contact/direction.html

Schedule

The conference starts on Tuesday April 26, 2016 at 9:00 h and will end on Wednesday April 27 at 17:00 h. On Tuesday evening a conference dinner is scheduled.

Hotel recommendations

- Aquis Grana City Hotel ****
www.hotel-aquis-grana.de
- Novotel Aachen City ****
www.novotel.com/gb/hotel-3557-novotel-aachen-city/index.shtml
- Ibis Aachen Marschiertor **
www.ibis.com/gb/hotel-0967-ibis-aachen-marschiertor-aix-la-chapelle/index.shtml

Use the Opportunity to also visit the AKL'16

On April 28 to 29 the AKL 2016 – International Laser Technology Congress will also be held in Aachen. With over 600 participants, around 70 speakers and 70 live presentations, the AKL is one of the largest conferences on lasers and laser material processing. Use the opportunity to attend both conferences and make only one journey. A separate registration is, however, necessary. For further information and conference fees, please visit: www.lasercongress.org.

CONTACT

Organization

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