The 10th Nordic Laser Materials Processing Conference

Invitation and Programme

August 17–19, 2005
Luleå, Sweden
Dear NOLAMP attendant,

The NOLAMP conferences address all aspects of laser materials processing from fundamental science to industrial applications. The first NOLAMP conference took place in Oslo in 1987. It has continued on a biannual cycle ever since, strengthening the Nordic laser community by encouraging knowledge transfer and networking, e.g. also via the recently developed common Nordic internet portal www.norlas.com for those interested in learning more. The first NOLAMP conference took place in a period of intense development of industrial applications. The forthcoming 10th NOLAMP conference coincides with another breakthrough period in laser materials processing, namely the introduction of numerous new laser sources.

NOLAMP 10 will be held in Piteå which is located close to Luleå in the North of Sweden on the coast line of the Gulf of Bothnia. As well as being a city of music, entertainment and tourists, Piteå is a trade and industrial centre for paper and wood, but also an area of outstanding natural beauty.

ON BEHALF of the Nordic laser community and Luleå University of Technology, it is my great pleasure to invite you to the 10th NOLAMP conference.

ALEXANDER KAPLAN
CONFERENCE HOST

NOLAMP 10
Conference Agenda

2005-08-16

18.00-21.00
Meetings and Greetings
Pite Havsbad

06.30-13.00
Registration

11.00-11.40
Opening of NOLAMP 10
Prof. Alexander Kaplan, Luleå University of Technology

Keynote speech
Johnny K. Larsson, Volvo Car Corporation

11.40-13.00
Lunch

13.00-13.40
Session I: Laser Networking and Education
Chair: Prof. Alexander Kaplan, Luleå University of Technology
www.NORLAS.com – Networking Nordic Laser Materials Processing Knowledge
Steen-Erik Nielsen, FORCE Technology

Education of Industrial Users in Laser Materials Processing
Hans Engström, Alexander Kaplan, Luleå University of Technology

13.40-14.40
Session II: Lasers and Laser Systems
Chair: Hubert Wilks, Trumpf Maskin AB

Laser Metrology in Experimental Mechanics
Mikael Sjödahl, Luleå University of Technology

Fibre-Fibre Coupling in Industrial Use
Sven-Olov Roos, Optoskand AB

Turn-key Laser Robot Cells for Sheet Metal Applications
Urban Widén, Pernanova Lasersystem AB

14.40-15.10
Coffee break

15.10-16.00
Session III: Measurement, Monitoring and Control
Chair: Prof. Mikael Sjödahl, Luleå University of Technology

Laser Welding Tool with Seam Tracking – New Functions and Applications
Urban Widén, Pernanova Lasersystem AB

The Effect of Parameters on Weld Quality and Photodiode Signals in CO₂ Laser Welding of Butt Joints
Anna Fellman, Antti Salmiinen, Veli Kujanpää, Lappeenranta University of Technology

17.30
Dinner

18.30-23.00
Social programme
Visit at Storforsen (“Grand Rapids”), Vidsel

2005-08-17

08.30-09.30
Session IV: Fundamentals and Modelling
Chair: Prof. Flemming Olsen, Technical University of Denmark

Laser Absorption Measurements in Opague Solids
David Bergström1,2, John Powell1,2, Alexander Kaplan3
1Mid Sweden University, 2Laser Expertise Ltd, 3Luleå University of Technology

Absorption Phenomena in Laser Materials Processing
Veli Kujanpää, Lappeenranta University of Technology

Analytical Modelling of Energy Transfer Through the Vapour in Laser Keyhole Welding
John Dowden, University of Essex

09.30-10.00
Coffee break

10.00-11.00
Session V: Laser Welding
Chair: Johnny K. Larsson, Volvo Car Corporation

Laser Welding With or Without Gas?
Wolfgang Danzer, Mark Faerber, Linde AG

Laser Welding of Plastics in Mass Production
Saara Kouvo1, Annaj Lasserson2, Veli Kujanpää1,2
1Lappeenranta University of Technology, 2VTT Industrial Systems

Front and Back Shieldings for CO₂-Laser Welding
F. Briand1, K. Chouf1, E. Verna1, G. Calibotte2, G. Lindén3
1Air Liquide/CTAS, 2Air Liquide/CRCD, 3Air Liquide Gas AB

11.00-12.00
Session VI: Automotive Laser Welding and Brazing
Chair: Prof. Petri Vuorio, Tampere University of Technology

The Fatigue Properties of Laser Brazed Steel
Tomas Forsman1, Johnny K. Larsson2, Yngve Bergengren2
1Corrosion & Metals Research Institute, 2Volvo Car Corporation

Load Adapated Laser Weld Patterns 1; Fatigue Performance
Johnny K. Larsson1, Tomas Forsman2, Reza Kheir2
1Volvo Car Corporation, 2Corrosion & Metals Research Institute

Load Adapated Laser Weld Patterns 2; Crashworthiness Performance
Johnny K. Larsson, Volvo Car Corporation

12.00-13.00
Lunch
**NOLAMP 10**

**General Information**

**THE CONFERENCE PAPERS** will be published in the 10th NOLAMP Proceedings by the Division of Manufacturing Systems Engineering, Luleå University of Technology, SE-971 87 Luleå, Sweden.

**Phone:** +46 920 49 10 00

**THE CONFERENCE LANGUAGE** is English.

**UPDATED INFORMATION** about the conference will be published in www.itu.se/nolamp

**VENUE**

NOLAMP 10 will take place at Pite Havsbad.

**PO. Box 815, SE-941 28 Piteå, Sweden**

**Phone:** +46 (0) 911-327 99

Pite Havsbad is one of the largest conference centres in Sweden, situated on the shore of Gulf of Bothnia, just 10 km outside of Piteå, a nice, small town with a genuine summer city atmosphere. Piteå is located 50 km southwest of Luleå, along the E4. The area is well-known to be one of the sunniest places in Sweden in the summertime.

Pite Havsbad ("Havsbad" literally means "sea bathing") offers a rich variety of entertainment such as tropical adventure bath and spa, nine hole short-range golf course, cinema with the world’s largest film screen format (f-MAX), saunas etc. Pite Havsbad is famous for the many kilometres long sandy beaches and the clear, clean sea water and numerous outdoor activities and natural bathing.

Learn more about this great conference centre by visiting: www.pite-havsbad.se

**HOTEL ACCOMMODATION**

Pite Havsbad has more than 500 hotel rooms of high standard and the location on the beach of Gulf of Bothnia makes the atmosphere very special.

Reservations of rooms at Pite Havsbad must be made by contacting:

**NEX Resebyrå AB**
Conferences, Aurorum 2, SE-977 75 Luleå, Sweden

**Phone:** +46 (0) 920-759 06, 759 00

**Fax:** +46 (0) 920-759 05

Contact person: Mrs. Raija Wallmark

E-mail: raija.wallmark@nex.se

www.nex.se

**TRAVELLING**

The most convenient way to reach NOLAMP 10 is by flight to Luleå which is frequently operated by SAS and other companies.

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**USEFUL LINKS:**
- Flights: www.scandinavian.net
- Busses: www.lnboblidtabellerldtbodyeller.html
- www.pitea.se (click lokalbuss-tidtabell and look for Line 1)
- Rental cars: www.xentus.nu; www.hertz.se; www.avis-se.com

**CONFERENCE REGISTRATION**

To register please see information on the registration form. The form shall be used and sent to Mrs. Karin Soini at the Conference Secretariat.

**FEES**

- Early bird registration: Payment received by May 17
  - Participant SEK 5600:- (SEK 7000:- VAT incl.)
  - Accompanying person SEK 800:- (SEK 1000:- VAT incl.)
- May 18-June 16
  - Participant SEK 6100:- (SEK 7825:- VAT incl.)
  - Accompanying person SEK 900:- (SEK 1125:- VAT incl.)
- June 18-August 19
  - Participant SEK 6500:- (SEK 8125:- VAT incl.)
  - Accompanying person SEK 1000:- (SEK 1250:- VAT incl.)

Please check with your organisation for details about VAT payment.

For conference attendants, the fees include the conference proceedings, luncheons, and coffee/re-freshments, dinners and social events. The hotel fee and travelling is not included.

For accompanying persons the fee includes luncheons, dinners and social events. The hotel fee and travelling is not included.

At-site registration will take place at Pite Havsbad on Aug 17, 08.00-13.00 at the Hotel reception desk. Please bring your confirmation of registration.

**PAYMENT**

Payment for the total conference fee shall be made to:

- SE-banken, SE-106 40 Stockholm, Sweden
- Account no: 5439-100 16 24
- SWIFT address/BIC code: ESSE SESS

IBAN No: SE6650000000054391001624

or to

PlusGirot: 76 08 15 – 1 (former PostGirot)

On each payment, clearly indicate company/institute name, your name and conference name, NOLAMP 10.

A confirmation of registration and payment will be sent after receiving the payment.

**REQUESTS FOR REFUNDS**

Requests for refunds must be made in writing and received on or before June 17. There is a SEK 500.00 processing fee applied to all refunds. No refunds or transfers will be accepted after June 17.

**PAYMENT**

**Special Needs**

If you have any special needs that we can address to make your participation more enjoyable, please contact the Conference Secretariat.

**Substitutions and Cancellations**

We understand that circumstances may occur to prevent your attending the conference. If you can not attend the NOLAMP 10 you have two options:

1. Send a substitute. Substitutions can be made at any time, even on-site at the conference. (Please have the substitute bring your letter of confirmation to the registration desk.
2. If you would like a refund, we gladly process one for you.*

*Note: Requests of conference fee transfers received before June 17 will receive a full transfer of funds. Requests for refunds must be made in writing and received on or before June 17. There is a SEK 500.00 processing fee applied to all refunds. No refunds or transfers will be accepted after June 17.

**Exhibition**

It is possible for companies and organisations active in the field of laser materials processing to participate in an exhibition at the conference venue during the conference. The exhibition can be realised by roll-ups etc. A table will be provided by the organiser.

If you are interested in participating as an exhibitor please contact the Conference Secretariat, not later than June 15.

**Social Programme**

**Tuesday Aug 16, 18.00-21.00:**
Meetings and greetings
Meet your friends and have a nice relaxing time. We also plan for a nice golf event on the 9 hole short course at Pite Havsbad. We will meet in the hotel lobby at Pite Havsbad.

**Wednesday Aug 17, 18.30-23.00:**
Visit at Storforsen ("Grand Rapids"), Vidsel
We will go by bus to Storforsen about 80 kilometres north-west of Piteå, the largest free-flowing rivers in the Nordic, with a drop of over 82 metres. Standing at the edge of the rapids, where you really feel the power of the river is a breath-taking experience.

**Thursday Aug 18, 20.00-23.00:**
Conference Banquet
The conference banquet will take place at Pite Havsbad.

**Friday Aug 19, 14.00-16.00:**
Licentiate presentation on laser hybrid welding and lab visit
We plan for a licentiate presentation at Luleå University of Technology and a visit in the laser laboratory.

Discover Norrbotten
To learn more about this beautiful region of Sweden please visit some of the links below:

- www.norrbottenlappland.se
- www.norrbotten.se
- www.kulturavnorrbotten.nu
- www.fjallen.ru
- www.regionfakta.com/norrbotten
- www.fiskenorrbotten.com