Registration information

Registration as a delegate
AILU members need only give their names to the AILU office (E: events@ailu.org.uk; T: +44 (0)1235 539595). Otherwise a registration form should be completed.

Delegates
Delegates will receive a name badge and a pack including a list of delegates and a CD of key slides or notes of presentations. A buffet lunch will also be provided together with refreshments throughout each day. Please advise us of any special dietary needs.

Discounts
Delegates who are not members of AILU or of a supporting organisation and who decide to join the Association within 10 weeks of the event will be reimbursed the difference between the member and non-member registration fee as a discount on their first year's corporate membership subscription.

Full details of AILU membership can be found at **www.ailu.org.uk**, taking the link to 'about us'

Laser applications clinic
Delegates who would like to discuss any technical or business matter relating to laser applications are invited to call at the AILU desk. As part of the mission of the Photonics Knowledge Transfer Network, we will be delighted to provide assistance and arrange informal introductions with appropriate experts at the symposium.

Registration as an exhibitor
To book a space complete the registration form or contact the AILU office (E: events@ailu.org.uk; T: +44 (0)1235 539595). Spaces are limited so early booking is recommended. Table tops, backboards and power will be provided.

Additional activities

Tour of TWI

TWI is one of the world's foremost research and technology organisations. Informal tours of the laser areas will be offered during the symposium hours. Delegates will see processing cells for laser welding of thick and thin section materials, surface modification, cutting and other processes including plastic welding (both through transmission and clear weld) and applications in micro technology.

Evening meal
An informal evening meal in the Cambridge area will be organised on the evening of 7 July for symposium delegates. Details will be provided closer to the event.

Presentations of the AILU Award and Young UK Engineer's Prize
The presentation of the AILU Award and UK Young Laser Engineer's Prize for 2009 will take place immediately after the closure of the afternoon session on 7 July. To find out more, visit the AILU site and take the links to 'Awards and Prizes'.

AILU AGM
Annual General Meeting of the Association will take place in the conference centre on 7 July after the afternoon presentations. All symposium delegates are invited to attend.

Registration form

ILAS 7 & 8 July 2009

Delegate contact information

Title First name Surname

Position:

Organisation:

Address:

Post Code:

Tel: Fax:

E-mail:

Delegates
I wish to register as a delegate for the following* (please tick):

❑ Full 2 day Symposium
or

❑ 7 July only

❑ 8 July only

Exhibitors
Please note that exhibitors who wish to participate in the Symposium sessions also need to complete the delegate section.

I wish to reserve an area in the exhibition for the following* (please tick):

❑ Both days of the Symposium
or

❑ 7 July only

❑ 8 July only

Delegates and Exhibitors
❑ Evening meal (7 July)

Please complete the payment details on the other side.

*See the 'Registration information' panel for more details.

Registration form

Cost

Discounts for delegates
Members of AILU and supporting bodies receive a discount, as do unemployed and retired persons and full time students. Exhibitors who are also delegates also receive a discount.

Please tick all that apply:
❑ I am a member of one or more of the following bodies (M):
❑ AILU ❑ Make It With Lasers ❑ Photonics KTN ❑ Materials KTN

❑ I am currently unemployed or retired (U/R)

❑ I am currently a full time student (S)

❑ I wish to register as an exhibitor and delegate (E&D)

Cost (in GBP including VAT @15%)

	None[1]	M	U/R	S	E&D
Attend presentations					
2 day event	370	300	140	85	-115
1 day event	200	165	80	45	-55
Exhibit					
Both days[2]	355	285	-	-	
1 day[2]	190	155	-	-	
Additional exhibitors	35	30			
Attend evening meal	30	30	30	30	30

[1] The difference between member and non-member rates will be discounted from first year corporate membership for organisations joining AILU within 10 weeks of the event.
[2] Includes one person plus stand.

Total cost (GBP incl. VAT) ☐

Payment options
❑ Please invoice me
❑ I wish to pay in advance by:
❑ Bank/Euro cheque in £ Sterling or EURO, payable to AILU
❑ Visa/Mastercard:
Name on Card:

Number _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Exp _ _/_ _
Please debit my account

Signed: Date:

Cancellations will be accepted up to 1 week before the event; otherwise the full fee may be charged.

AILU, 100 Ock St, Abingdon, Oxon OX14 5DH UK.
Fax: +44 (0)1235 550499; E: liz@ailu.org.uk

Introduction

Objective

To bring the laser community and potential laser users together with leading researchers in the field, to explore real world applications in laser material processing.

Aims

- To present current laser-related materials processing technologies and applications to UK manufacturers.
- To showcase UK laser materials processing activities.
- To provide an opportunity for the laser materials processing research community to come together to discuss recent developments.
- To enhance technology transfer from the research community to the manufacturing sector.

Scope

The Symposium will address research topics related to laser materials processing with applications in industry in the following areas:

- Sources and systems
- Cutting, drilling and surface processing.
- Joining (including welding, brazing and soldering).
- Additive manufacture techniques.

Who should attend?

- Senior managers, engineers and designers from manufacturing industry.
- UK researchers in academia and industry.
- Those new to lasers and laser materials processing as well as experienced practitioners.

An Opportunity

One of the key features of an AILU Event is the opportunity it provides for networking and for discussing technical matters: a comfortable environment, generous lunch and refreshment breaks, an exhibition and a clinic.

A personal invitation

On behalf of the Association of Laser Users I would like to invite you to join us for our first ever 2-day AILU symposium aimed at covering a broad spectrum of industrial laser processing applications. For the benefit of the many organisations that are active and/or interested in more than one area of laser materials processing, this symposium provides an ideal opportunity to find out about the latest developments in all aspects of industrial laser materials processing.

To assist those who are new to some of the technical areas, the first presentation in each session is an introductory talk on the topic, which will be given by the session Chairman. This will enable all attendees to gain maximum benefit from the investment of their time.

All the talks are by invitation only and include keynote presentations by eminent overseas speakers.

Stewart Williams AILU President

Programme

Day 1 09:30 - 12:50

Sources and systems

Chair: Paul Hilton, TWI

The first session provides an introduction for this two day symposium, focusing on lasers and laser systems, covering a variety of laser sources and how these sources are integrated into systems to provide machine tools for the wide range of laser processing applications covered in the subsequent sessions. The applications discussed will involve both macro and micro scale components. The session will close with a presentation on a project to develop extremely powerful new lasers; primarily for the next generation of nuclear fusion research, but hopefully with some applications in more down to earth but no less interesting areas of materials processing.

Introductory talk

An introduction to lasers in materials processing
Paul Hilton TWI

Keynote presentation

State of the art laser systems for materials processing
Carsten Keim TRUMPF Laser and Systemtechnik, Germany

System options for laser cutting: the jobbing shop perspective
Neil Main Micrometric

New directions in solid state laser sources for materials processing
Mark Greenwood GSI Group

Diode laser systems for materials processing applications
Gary Broadhead Laser Lines

Lasers and laser systems for micromachining
Martyn Knowles Oxford Lasers

Lasers in the power generation sector - a high-power Yb-fibre laser system for tube-to-tubesheet welding
Geert Verhaeghe TWI

The HiPER laser fusion project - materials processing at the extreme
Chris Edwards Rutherford Appleton Laboratory

Programme

Day 1 13:50 - 17:15

Cutting, drilling and surfacing

Chair: Martin Sharp, John Moores University

Cutting and marking remain the most exploited applications of laser materials processing. Drilling and surface texturing, though more specialised, still have important applications, including the growing field of medical device manufacture. Topics addressed in this session include: improvements in edge quality in laser cutting; the increasing role of fibre lasers in traditional laser cutting and marking applications; aerospace and automotive applications of picosecond laser hole drilling; and, as laser marking becomes faster and more flexible, a technique for the simultaneous generation and control of multiple focal spots.

Introductory talk

The growth of lasers in cutting, drilling and surfacing
Martin Sharp Liverpool John Moores University

Keynote presentation

Picosecond laser drilling for the automotive and aerospace industries
Wulf Oppenländer Swiss Tec AG

Advances in fibre and solid state laser cutting and drilling
Mo Naeem GSI Group

State of the art laser marking
Trevor Wilson Xpirt lasers

Laser processing of composites
Paul French Liverpool John Moores University

A discussion of cutting with fibre lasers
John Powell Laser Expertise

Multiple point laser machining
Walter Perrie University of Liverpool

Process monitoring requirements for laser drilling
Peter Thompson Prima North America Inc

Programme

Day 2 09:45 - 13:05
Joining
Chair: Stewart Williams, Cranfield University

The use of lasers in industrial joining applications is continuing to expand. This is partly through innovative processes but is especially due to improved equipment. This includes lasers with higher brightness, powers and stability. It also includes accurate beam profile equipment allowing us to measure exactly what is happening at the interaction point. This is leading us to new and improved laser joining processes – some of which will be described here.

Introductory talk

The ins and outs of laser joining processes
Stewart Williams Cranfield University

Keynote presentation

Broadening the horizon of laser welding by hybrid techniques and combined processes
Dirk Petring Fraunhofer ILT

Laser welding of titanium
Jonathan Blackburn TWI

Remote fibre laser welding as a comparative joining method for body in white applications
Richard Hewitt Warwick University

Absolute spot size on penetration depth in laser welding
Wojciech Suder Cranfield University

Fibre laser welding of dissimilar alloys for next generation lighweight vehicles
Hui-chi Chen Manchester University

Recent developments in laser welding of plastics
Ian Jones TWI

Focus shift in high power lasers - characterisation and effect on welding performance
Eurico Assuncao Cranfield University

Programme

Day 2 14:05 - 17:15
Additive manufacture
Chair: Rob Scudamore, TWI

Laser additive manufacturing is an exciting concept for the direct production and repair of metal components, and one in which the UK is very strong. A form of additive layered manufacturing, it has over the past few years enjoyed a rapidly increasing degree of industrial interest. Complex components are produced in incremental stages using one of a variety of techniques, principally by using either powder bed technology or nozzles that deliver the metal powder as well as the laser beam. This session will review recent development and applications in the production and repair of high value componants.

Introductory talk

An overview of laser additive manufacture and repair
Rob Scudamore TWI

Keynote presentation

Laser additive manufacturing possibilities and advantages for the factory of the future
Ingo Kelbassa Lehrstuhl für Lasertechnik (LLT) RWTH University Aachen

Developments in selective laser melting equipment and processes
Chris Sutcliffe MTT

What's new in laser cladding machines
Roger Hayes Huffman

The selection and specification of powders for laser deposition
Phil Carroll LPW Technology

Metals powder bed processing- the good, the bad and the ugly
Carl Brancher Material Solutions

Finite element modelling of direct laser deposition process
Lin Li Manchester University

Overview of events

7th July

08:45 - 09:30	Registration and exhibition
09:30 - 11:10	Sources and systems (1)
11:10 - 11:30	Refreshments and exhibition
11:30 - 12:50	Sources and systems (2)
12:50 - 13:50	Lunch and exhibition
13:20 - 15:50	Laser applications clinic
13:50 - 15:40	Laser cutting, drilling and surfacing (1)
15:40 - 16:00	Refreshments and exhibition
16:00 - 17:10	Laser cutting, drilling and surfacing (2)

Additional Events

17.10 - 17:40	Presentation of the AILU Award and the Young Laser Engineer's Prize
18:00 - 18:30	The AILU AGM All conference delegates are invited to attend
Later...	Informal Evening Meal Details will be provided with registration

8th July

08:30 - 09:15	Registration and exhibition
09:15 - 09:45	Presentation "Future funding opportunities in manufacturing" Speaker TBC
09:45 - 11:15	Joining (1)
11:15 - 11:35	Refreshments and exhibition
11:35 - 13:05	Joining (2)
13:05 - 14:05	Lunch and exhibition
13:35 - 14:05	Laser applications clinic
14:05 - 15:35	Additive manufacture (1)
15:35 - 15:55	Refreshments and exhibition
15:55 - 17:15	Additive manufacture (2)