NEWSLETTER LIFT #1
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APPLICATION ORIENTED RESEARCH IN THE AREA OF HIGH-BRILLIANCE FIBRE LASERS

Contents of this newsletter:

EC-Funded LIFT Project Takes the Leadership in Fibre Lasers

www.lift-project.eu

LIFT - Leadership In Fibre Laser Technology, is a collaborative, large-scale integrated project funded by the NMP Directorate in the 7th Framework Programme of the European Commission. The 16 Million Euro project will expand the limits of advanced materials processing applications through a new generation of high-brilliance fibre-based lasers.

European industry today leads in industrial laser processing. Continuous innovation and adoption of novel technologies are required to maintain this position. Fibre lasers represent only 10% of an estimated market volume of 2 billion Euros worldwide for industrial lasers. The market share of fibre lasers is expected to double by 2010 and double again by 2013, when fibre lasers will account for more than 30% of all industrial lasers sold each year.

In order for Europe to advance its position as technology and manufacturing leader in industrial laser processing, it is imperative for European manufacturers to take the *L*eadership *I*n *Fibre* laser *T*echnologies. That is exactly the goal of the LIFT project.

This project will establish an internationally leading position for Europe in the science, application and production technologies of fibre lasers. The consortium will develop innovative laser sources with intelligent beam delivery systems and dynamic beam manipulation, in continuous-wave, nanosecond pulsed, and ultra-short pulsed femtosecond laser sources, operating at power levels ranging into the kilowatt regime. LIFT will enable a greater market share for existing applications, create new application areas for manufacturing, and build a European network of components' suppliers and laser system manufacturers. Demonstrations will show the potential of this technology in domains where there are large existing markets such as high-speed remote cutting and welding, medical diagnostics and treatment, TFT patterning or where there are large potential markets such as solar cell fabrication and cold ablation for ceramics manufacturing.

The research, development and innovation that constitute the LIFT project will lead to a new level of high-brilliance laser sources. The results of the consortium work will bring radical advances in four important application areas:
- Laser Materials Processing
- Health Care Delivery
- Cost-Effective Manufacturing of Solar Cells for Renewable Energy
- Manufacturing of the next-generation of ICs with nanometre feature size.

The LIFT Consortium includes: Fraunhofer IWS, Fraunhofer IOF (D), European Photonics Industry Consortium EPIC (FR), Oclaro (CH), Eolite Systems (FR), Quantel (FR), Time-Bandwidth Products (CH), Gooch & Housego (UK), Rofin Sinar Laser (D), Tampere University of Technology (FIN) 3S Photonics (FR), Politecnico di Torino (I), University of Swansea (UK), SPI Laser (UK), Dilas Diodenlaser (D), Perfos (FR), NKT / Crystal Fibre (DK), Optoskand (S), IxFibre (FR), Raicol Crystals (ISR), Corelase (FIN)

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LIFT partners during the kick-off meeting in Dresden on 29 September 2009

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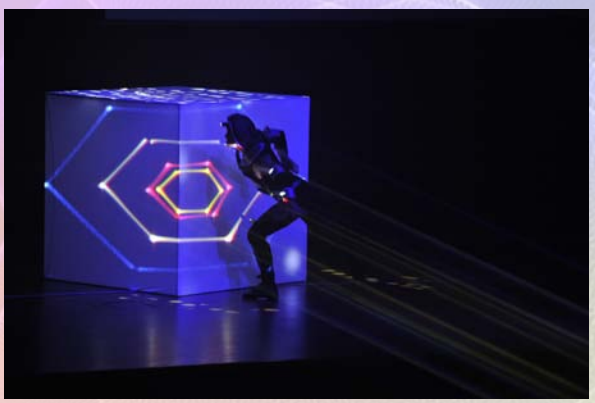
5th International Workshop on Fiber Lasers



The 5th International Workshop on Fiber Lasers was held on September 30 and October 01, 2009 in the International Congress Center Dresden.

Organised by the Fraunhofer Institute for Material and Beam Technology this 2009 session of the Fiber Lasers workshop has been a great success. Despite the economic situation, more than three hundred engineers, scientists and business managers from all over the world attended the event. In addition to innovations in the field of fiber lasers, this year's workshop also included other high brightness lasers.

This will also be the future approach since the organisers announced that the 2010 event will be called FiSC (International Laser Symposium on Fiber Disc).

International LASER Symposium FiSC

Over twenty interesting presentations described the latest developments in design, research and industrial applications of high brightness lasers.

Professor Dr. Eckhard Beyer, organizer of the 5th International Workshop on Fiber Lasers, commented, "Brilliant lasers with outstanding beam quality are a crucial parameter for process efficacy." This workshop is an outstanding opportunity to gain experience and knowledge in this fast growing segment of industrial laser technology with experts from research and industry demonstrating their latest achievements in laser and applications technology.

The first day of the workshop concentrated on high power applications of fibre and disk lasers, the main application areas being remote cutting and welding. The presentation of the remote welding of Audi A4 doors showed one impressive industrial application of remote welding with a cycle time of only 32 sec.

On the research front, several presentations focused on the performance of various lasers from a 5kw single mode fibre laser to a 38kw multi mode disk laser.

The second day of the workshop was dedicated to micro-scale processes of fibre lasers. Based on results from different speakers, fibre lasers are considered to be a very competitive alternative to CO_2 laser cutting, as long as material thickness is in the range of 3mm or less.

Some very impressive results of cutting were presented. In thin-film cutting, high brightness single mode lasers can enable very high cutting speeds. For 50 micrometer foil, the cutting speed of 800 m/min is limited by the scanner, not the laser power (5 kW).

The Fraunhofer IWS will organise the International Laser Symposium FiSC (6th international workshop on fiber lasers) in the International Congress Center Dresden on **October 5 - 6, 2010**

The audience during the workshop presentations

Exhibition Hall

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