

### Newsletter 2/2006 May, 2006

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#### Introduction

Welcome to read our second newsletter of 2006. As you will see in this newsletter Liekki continues to grow in many dimensions. As always, we would appreciate your feedback to be able to better serve you.

This newsletter edition is highlighting:

- The Liekki presence at the CLEO 2006 Conference (Booth #1021), Long Beach, California, May 21 - 26
- A new version of Liekki Application Designer (LAD) simulation software to be launched
- Developments on fibers Highly efficient, large-mode-area (LMA), erbium fiber
- More high power Optical Engines
- Liekki was recently named to the Red Herring's Top 100 Europe as one of the leading innovators in Europe
- New additions to the Liekki team

Sincerely,

Bill Willson Vice President, Sales and Marketing Phone: +1 301 706 0315 Email: william.willson@liekki.com

# Visit our booth #1021 at CLEO



# Liekki's presence at the CLEO Conference, Long Beach, California, May 21-26

- At the exhibition during May 23-25 Liekki will have a full product display and demonstrations including our new LMA erbium fiber, Er60-20/125DC; our new high power Optical engines, OE-500 and the latest version of Liekki Application Designer.
- The majority of our technical team will available at the booth and for meetings. If you are interested in scheduling a private meeting time, please contact VP Sales and Marketing, Bill Willson, at william.willson@liekki.com, tel. +1 301 706 0315 or respond to sales@liekki.com.

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Version 3.2 of Liekki Application Designer (LAD) will be launched at CLEO - including web based functionality and compatibility with RSoft's OptSim photonics simulation software

LAD is a versatile design tool for fiber applications providing a strong, yet easy-to-use platform for simulating and optimizing fiber amplifiers, fiber lasers and ASE sources. The new version of Liekki Application Designer (LAD) to be released at CLEO will include web based functionality:

- automatic check for the updates availability
- direct access to Liekki active fiber specifications
- on-line licensing

Also, as a result of a very good cooperation between Liekki and RSoft, LAD v3.2 will be compatible with RSoft's OptSim. OptSim users will be able to use LAD projects as building blocks in OptSim designs. LAD v3.2 will be available for purchase or evaluation starting June 2006.

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### Liekki introduces high efficiency, large-mode-area (LMA), double clad (DC) erbium fiber family

Liekki blazes new ground with a highly-doped erbium double clad (Er-DC), large-mode-area (LMA) fiber Er60-20/125DC. This fiber features high erbium concentration for efficient absorption, large 20 $\mu$ m core with low NA of 0.07 supporting good beam quality, and 125 $\mu$ m octagonal-shaped cladding for ease of use. The fiber demonstrates >30% slope efficiency with 980nm pumping with efficient lasing bandwidth extending up to 1.6 $\mu$ m.

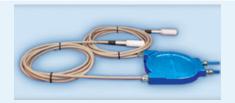
Mikko Soderlund, Fiber Product Manager, says "Er60-20/125DC clearly demonstrates the capabilities and quality of the DND technology – this fiber features high concentration, large core/clad ratio, low clustering and low background losses, a combination which is unreachable with conventional processes. It opens up completely new possibilities in the eye-safe wavelength region. We are excited about this first release of the Er-DC product family and look forward to further leverage and develop this core platform into other core/clad ratios and variants like polarization maintaining and all-glass fibers, following our customer's requirements".

Er60-20/125DC opens many applications in the 1.5-1.6μm region:

- Eye-safe fiber lasers and amplifiers
- Military and commercial lidar
- Single frequency fiber lasers
- High peak power amplifiers
- Ultra-short pulse amplifiers
- Industrial machining
- Medical imaging

The direct Er-doping approach avoids some of the commonly known trade-off's of Er:Yb co-doped fibers like poor/unrepeatable efficiency, high core NA and spurious lasing at 1 $\mu$ m. The fiber can be pumped either with 980nm or 1480nm. Liekki also provides 6 x 1:1 pump combiner for this fiber.

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OE-500 is also available as a rack-mounted unit



### **New high power Optical Engines (OE)**

The Liekki OE-500 Optical Engine is a plug-and-play high power output CW module for fiber laser applications. The OE is a fully integrated subassembly with standard connectorized cables for pump input and signal output delivery. The efficiency and design gives the application designer the flexibility to create a wide range of powerful and easy-to-use solutions. Liekki optical engines are built using our unique highly doped, flat RIP gain fibers using our proprietary DND fiber process. High doping reduces the required gain fiber length minimizing harmful non-linear effects.

The OE-500 uses an all-glass gain fiber and fiber bragg gratings to maximize power output and reliability. Additionally the package is engineered to manage heat dissipation. It provides easy mounting and a full heat sink function in a compact footprint (238mm x 222mm x 35mm). The OE-500 may be used in:

- Marking and engraving
- Micromachining
- Micro-adjustments
- · High resolution soldering
- Material processing

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## Liekki named one of the top 100 best start-up companies in Europe by Red Herring magazine

The RED HERRING 100 Europe Award was given to Liekki in recognition of its innovative technology and business model. The award recognizes the 100 "Most Promising" firms driving the future of technology. The award ceremony was held in Paris on May 8th.

Liekki is a recipient of Red Herring 100 Europe, a selection of the 100 private companies based in the Europe, EMEA region that play a leading role in innovation and technology. Red Herring's editorial staff rigorously evaluated more than 700 private companies through a careful analysis of financial data and subjective criteria, including quality of management, execution of strategy, and dedication to research and development.

"Market obstacles remain but our list shows that great companies are being created in Europe," said Red Herring editor-in-chief Joel Dreyfuss.

Red Herring's lists of top private companies are an important part of the magazine's tradition of identifying new and innovative technology companies and entrepreneurs. Companies like Google, eBay and Skype were spotted in their early days by Red Herring editors as those that would change the way we live and work.

"Red Herring 100 Europe is a highly priced addition to the Frost&Sullivan European Technology Leadership Award received last year. These selections show that Liekki continues to be the technology leader in the rapidly growing area of high energy lasers", says Liekki's VP of Sales and Marketing Mr. Bill Willson.

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Liekki continues to build its' professional team

We have been busy growing the Liekki team. Since the last newsletter we have added four new people, building onto an already strong team. Collectively these people bring us nearly 80 years of industry experience.

- Dr. Hanna J. Hoffman, Chief Technical Officer. Hanna has over 20 years of direct experience in the solid-state laser industry. Hanna has worked for Spectra-Physics, GTE and Lockheed among others. Hanna has authored over 35 reviewed papers. Email: hanna.hoffman@liekki.com
- Lorenzo Wanczyk, Vice President of Operations. Lorenzo has over 17 years engineering & manufacturing management experience with fiber optics and photonics including employments at SPI laser, Alcatel, and Pirelli.

Email:lorenzo.wanczyk@liekki.com

 Georg Wien, Laboratory Engineer. Georg has studied at the University of Allied Sciences in Berlin and finished his degree in 2005. He has worked the last two years for Sandia Laboratories in Livermore, California with the Fiber Laser/Amplifier development group.

Email:georg.wien@liekki.com

 Dr. Etienne Friedrich, Director of European Sales. Etienne has over 15 years of experience in fiber optics. He has worked for Corning Incorporated and Bookham in a variety of engineering and commercial roles. He is fluent in English, French, German, Italian and Swedish.

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 John Bowerman, Director of North American Sales. John brings nearly 25 years of engineering and sales experience to us. He has worked previously for companies such as Honeywell, Corning and Nortel.

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