



Press Release

10<sup>th</sup> December 2007

**SPI Lasers, LLC**

("SPI" or "the Company")

## **SPI Lasers Investigates New Applications for the Fiber Laser**

- **New Results in Processing Applications Not Said to be Suitable for Fiber Lasers**

**10th December 2007, Santa Clara, California, SPI Lasers Applications Laboratory** today announced that work conducted at the applications facility managed by Dr. Tony Hault is challenging the perception of the capabilities of near infra red lasers using state-of-art fiber lasers. Areas such as plastic welding for the medical and mobile phone industries, scribing and cutting polymers for the automotive industry and ablation of thin films for the photovoltaic industry are showing excellent results when processed with a fiber laser. SPI is expecting more results for the fiber laser in the near future as SPI is asking for more organisations to come forward with further challenges for the fiber laser.

One of the most recent examples of the more surprising results produced by the Applications Lab is Plastic Welding. The welding of plastics was not thought to be suitable for either the high brightness of fiber lasers or the beam characteristics. However, when tested by the Applications Lab, a careful manipulation of the laser beam has made it very easy to produce welds in polymers that are efficient, precise and time saving. These types of plastic welds are commonly produced for the medical and mobile phone industries.

Other examples include cutting polymers for the automotive industry, scribing and cutting alumina, and cutting and micro-machining of silicon. Also of real interest currently is the laser ablation of thin films for the photovoltaic industry. In this case, using very high laser frequencies up to 500kHz for thin film removal produces very precise material removal. This means that the base material, be it glass, plastics or silicon, remains untouched when processed by one of our lasers.

"This is the first time in the laser industry that such high repetition rates have been available from this type of laser – and it brings a totally new level of control and sophistication to a wide range of very precise surface removal and surface structuring processes, at a cost comparable to that of an industrial marking laser!" said Dr. Tony Hault. "As a result of this, more costly diode pumped solid state lasers, at up to five times the price, can in many cases be replaced by a fiber laser from SPI Lasers".

These results come on the back of an announcement from the Applications Laboratory in September that when cutting silicon using a 200W CW-M 1070nm fiber laser, cutting speeds of up to 6m/min on 200µm polycrystalline silicon were readily achieved. This was also a surprising new application for fiber lasers.

SPI Lasers are expecting the results produced by the Applications Lab to continue to expand the perceived capabilities of the fiber lasers, as the Applications Lab is open to requests for more proof of concepts. Device and component manufacturers, academic institutions and system integrators from around the globe are actively encouraged to work with SPI on their own application specific trials. Each request is assessed on a case by case basis for proof of principle and, if approved, is provided at no cost to the applicant.

Jeffrey C. Kabahit, the Laser Applications Engineer at the Applications Laboratory, states, "When we first opened the facility, we were inundated with requests for proof of principle. We approached each request with a can-do attitude and have been amazed at some of the results".

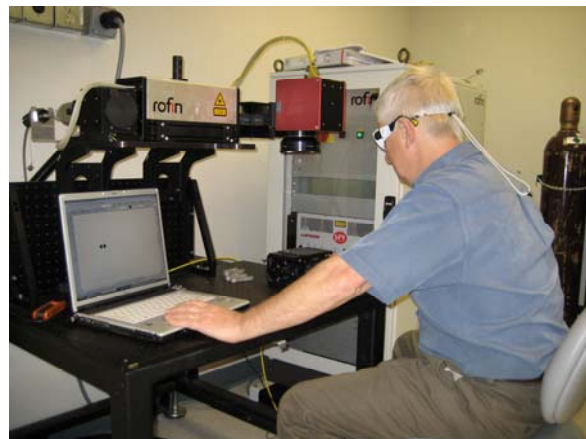
Requesting a proof of principle is the fast track way to conduct application trials. In addition, SPI offer a try before you buy program and SPI provides a progressive program to support academic & not for profit research centres.

Both the proof of concept and try before you buy programs mentioned here can be found by clicking on the SPI web site at [www.spilasers.com](http://www.spilasers.com) and registering your details.

**- Ends -**



**Jeffrey C. Kahabit at the  
FiberStar Machine**



**Dr Tony Hoult at the Refin  
Station**



**Dr Tony Hoult examining a  
sample produced by the Apps  
Lab**

**For further information:**

**SPI Lasers plc**

David Parker, President and Chief Executive

Tel: +44 (0) 1489 779 696

[david.parker@spilasers.com](mailto:david.parker@spilasers.com)

David Holloway, Chief Financial Officer

[david.holloway@spilasers.com](mailto:david.holloway@spilasers.com)

[www.spilasers.com](http://www.spilasers.com)

**Media enquiries:**

**SPI Lasers**

PR & Marketing

Tel: +44 (0) 1489 774 515

[PR@spilasers.com](mailto:PR@spilasers.com)

[www.spilasers.com](http://www.spilasers.com)

**Notes to Editors:**

SPI Lasers is a leading designer and manufacturer of optical fiber-based lasers that are currently used in a wide range of industries. The current product family is used to mark, weld, and cut materials used in the manufacture of a range of products.

The platform technology being developed to raise laser power levels for use in the macro manufacturing sectors is expected further to widen the markets served by SPI Lasers to include aerospace, automotive and white goods manufacture.

Among new markets in prospect, as higher-power lasers are deployed, is defence, and SPI Lasers is currently involved in this sector through contracted development work with a number of companies and government agencies.

SPI Lasers has a strong network of international distributors. In Europe the international distributor is BFI Optilas, one of the region's largest distributors of specialist products in the electronics and photonics markets. Outside Europe, SPI Lasers' products are distributed on an exclusive basis in China, India, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

Founded in 2000 on technology developed by the University of Southampton's Optoelectronics Research Centre, the business is headquartered in Southampton, United Kingdom.

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