 Photonics West 2006: New Technologies and New Space

With more exhibitors than ever Photonics West 2006 (January 21–26, San José, CA, USA) is projected to be the largest show in its eleven year long history. Already in 2005 the numbers of exhibitors (>875), conference attendees, sales representatives and exhibit-only visitors, altogether more than 15,000 visitors, broke all records. And the prospect for 2006 is even better: more exhibitors, more exhibition space, and more conferences.

Photonics West has become North America’s largest commercial exhibition on optics, lasers, biomedical optics, optoelectronic components, and imaging technologies. Traditionally held in San Jose, California, the Photonics West is located at the centre of one of the world’s hottest technology markets, Silicon Valley. Trade shows are a mirror of the economic situation of an industrial sector, and, judging by the Photonics West, the worldwide optics and photonics industry is stronger than ever.

Photonics West exhibition

January 24–26, San José, CA, USA

To accommodate the constantly growing number of exhibitors, the San Jose McEnery Convention Center has added a new South Hall, expanding the available exhibition area at the convention centre by 80,000 square feet, bringing the total convention centre space to 223,000 square feet (approx. 20,000 m²). “We’re really excited to get into the new facility,” says SPIE Exhibits Manager, Roberta Hart, “we’ve really been bursting at the seams!” Not only the number of exhibitors, but also the percentage of exhibitors from abroad has increased during the past few years (2004: 26.5%, 2005: 28.4%). According to its slogan “showcasing the age of light”, the range of exhibits at Photonics West covers the whole bandwidth of optics and photonics from optical components to laser beam sources, LEDs and X-ray lithography etc. While the manufacturers still represent the majority of the exhibitors, more and more research institutes, publishers, societies, associations and cluster organizations join the show as an exhibitor.

Exhibition Spotlight: Cluster Pavilions

Pavilion group presentations have become increasingly popular during the past few years. The advantages for both the19 pavilion exhibitors and visitors are obvious: the exhibitors benefit from a great visibility as well as organizational and promotional support from the pavilion organizer, and the visitor can meet a lot of companies from a particular country or region by visiting only one booth. In 2006, Photonics West expects 10 Pavilions from the US (6), China, France, UK and Germany with altogether 153 (!) exhibitors (Tab.).

Tab.: National clusters at the Photonics West exhibition

<table>
<thead>
<tr>
<th>Cluster</th>
<th>No. of exhibitors</th>
<th>Booth no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Cluster</td>
<td>14</td>
<td>6080, 6082–6085, 6087–6089, 6091–6095, 6097</td>
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<tr>
<td>UK Trade Support Pavilion</td>
<td>15</td>
<td>1937, 1939, 1941, 1945, 1947, 2036, 2038, 2040, 2042, 2044, 2046</td>
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<tr>
<td>French Pavilion</td>
<td>8</td>
<td>1841, 1843, 1845, 1847, 1940, 1942, 1944, 1946</td>
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<tr>
<td>German Pavilion</td>
<td>36</td>
<td>1801</td>
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<tr>
<td>New York Cluster</td>
<td>24</td>
<td>326–349</td>
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<tr>
<td>New Mexico Pavilion</td>
<td>2</td>
<td>1033</td>
</tr>
<tr>
<td>Florida Cluster</td>
<td>10</td>
<td>1634–1645</td>
</tr>
<tr>
<td>Colorado Cluster</td>
<td>16</td>
<td>1501, 1505, 1507, 1509, 1511, 1600–1605, 1608, 1610, 1700</td>
</tr>
<tr>
<td>Carolina Cluster</td>
<td>17</td>
<td>546, 1821, 6232, 6233</td>
</tr>
<tr>
<td>Arizona Cluster</td>
<td>9</td>
<td>414–422</td>
</tr>
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Photonic Competence Networks at Photonics West 2005

Joint exhibition stand of the German Competence Networks for Optical Technologies at Photonics West 2005. Initiated by OptecNet Deutschland, the association of the German Competence Networks, and SPECTARIS, the German Industry Association for Optical, Medical and Mechatronical Technologies, and sponsored by the Federal Ministry of Economics and Labour, the German Pavilion gives a broad overview of “Optical Technologies made in Germany”. For the companies eagleyard Photonics, Feldmann, Fraunhofer Institut Silicatforschung, hannoverimpuls, m2k-Laser, Moulded Optics and POG Precision Optics Gera this is already the third year at Photonics West. These seven “regular customers” and 29 additional German companies can be found at booth 1801.

Overview of symposia (January 21–26)

With a total number of 75 conferences and 2,800 papers the Photonics West 2006 symposia cover almost each and every topic in optics and photonics. Through the international symposia BiOS, OPTO, LASE and MEMS-MEMS this year’s comprehensive technical program also addresses a whole lot of new topics, such as mechanisms for low-level light therapy, multimodal biomedical imaging, endoscopic microscopy, biophotonics and immune responses, ultrasensitive and single-molecule detection technologies, gallium nitride materials and devices, zinc oxide materials and devices, and silicon photonics.

BiOS 2006 conference

The BiOS is the world’s largest international biomedical meeting and is accompanied by the BiOS weekend exhibition (January 21–22
The main topics of the OPTO symposium are:

- Photonic Therapeutics and Diagnostics
- Clinical Technologies and Systems
- Tissue Optics, Laser-Tissue Interaction, and Tissue Engineering
- Biomedical Spectroscopy, Microscopy, and Imaging
- Nano/Biophotonics

OPTO 2006

The OPTO 2006 symposium will address the latest advances in a broad range of optoelectronic technologies and their integration for a variety of applications. On our way to the Tera Era, where communication networks provide bandwidths on the order of a Tb/s and storage media can easily do with Tbytes of data, optics and optoelectronic devices will play a major role. This is also reflected in the OPTO optics and optoelectronic devices will play a major role. The main topics of the OPTO symposium are:

- Optoelectronic Materials and Devices
- Photonic Integration
- Nanotechnologies in Photonics
- Advanced Optoelectronic Applications
- Display Lasers and LEDs
- Displays and Holography

LASE 2006 (January 21–26)

Advances in basic laser device research, and in laser materials, device and system engineering for various applications that range from emerging nanotechnologies, microelectronic and photonic manufacturing, free-space communications, to use on the industrial manufacturing floor will be covered by the LASE 2006 symposium. The symposium will feature a plenary session, and will launch its 17th year with a hot topic discussion. LASE 2006 topics:

- Laser Source Engineering
- Nonlinear Optics
- Semiconductor Lasers and LEDs
- Laser Communication and Propagation
- Laser Micro-/Nanoengineering and Applications

MOEMS/MEMS 2006 (January 21–26)

The micro- and nanofabrication of MEMS and MOEMS is a growing industry. Micro- and nanofabricated electromechanical and optical components provide the missing links to the mass-produced miniaturized products and systems of the future. This symposium focuses on new developments of MOEMS and MEMS technologies at both basic research and commercialization stages and benefits from a strong presence of industrial and international participants. MEMS/MOEMS 2006 will feature:

- Micro/Nanofabrication
- Devices/Applications/Reliability

Silke Kramprich, Marketing & Communications, OptecNet Deutschland.

http://www.laser-online.de   LTJ
Shanghai, China – The first LASER. World of Photonics China trade show will take place from 21–23 March 2006 at the Shanghai New International Expo Center. The new event presents the entire spectrum of photonics, and Munich Trade Fairs International is expecting more than 100 exhibitors, two thirds of which will be international companies that are active on the global markets. This characteristic clearly differentiates LASER. World of Photonics from the trade shows that have been held in China for this industry until now. The companies that exhibit at the other shows are almost exclusively from China. Furthermore, the focus of the new event will be on optoelectronics. The companies Rofin Sinar Laser, Linos Photonics, Trumpf Laser, Jenoptik, and Laser 2000 are currently planning their participation in LASER 2006. World of Photonics China.

The target group for attendees to LASER. World of Photonics China is composed of experts from the fields of optics and electrical engineering, precision mechanics, general mechanical engineering, semiconductors, motor vehicle construction, aerospace, metal and plastics processing, chemicals and pharmaceuticals, medical devices and biotechnology, science and research. They work in top management, design engineering, manufacturing and production, purchasing and procurement, marketing and sales, design, and quality management.

At the same time as LASER. World of Photonics China 2006, electronica & Productronica China and Semicon China will be taking place at the Shanghai New International Expo Center. These fairs with another 300+ exhibitors will be accompanied by a symposium on “Trends and Future Requirements in Automotive Electronics”.

www.global-electronics.net/index.php?id=45693

1st International Fraunhofer workshop on Fiber Lasers

Dresden, Germany (at) – A lot of progress has been achieved in the development of laser sources in recent years but no real quantum leap yet. One of the new technologies that could induce such a leap is high power fiber lasers. This was discussed at a one-day workshop on November 22 at the Fraunhofer IWS in Dresden. The workshop was organized by the Fraunhofer Institutes IOF, ILT and IWS. The rapid progress in fiber laser development became apparent during several talks where the presented results were derived from very recent tests based on new laser devices which had not been available before. The discussions showed the fiber laser as a “faster, better and less expensive” tool that is now being tested for a number of applications. Particularly interesting were a portable system with kilo Watt laser power for ship building and the application of fiber lasers for tailored blanks production in the automotive industry.

The development of fiber laser is going on at a rapid pace. The 2nd Fraunhofer workshop on fiber lasers is already scheduled for June 29 and 30, again at the Fraunhofer IWS Dresden.

Special issue:
Thin disk vs. fiber lasers

For many years laser material processing was dominated by CO2-lasers. Still, almost 50% of the laser sources sold for industrial applications are of this type. Solid state lasers were promised for a long time to take over the high power applications. Surely, they caught up but their parameters were not convincing enough for a real leap. That may change now. Two new concepts for solid state laser systems evolved in recent years and are now introduced to industrial applications: thin disk lasers and high power fiber lasers. Both offer high efficiency, excellent beam profile and output powers in the kilo Watt range. Furthermore, they promise increased efficiency and less maintenance. Some people even speak of plug and play systems. With the next issue we will take a deeper look into these laser systems and their first applications in industry.

The new issue will be out on March 17 and published again in German. March is also the time to present the numbers for market development in 2005 and a forecast for 2006.

Beside the reports on kW laser systems you will find reports from another forefront of laser technology, that is femtosecond lasers. These ultrashort pulse lasers are now available as real turn key devices with regular applications in microscopy and many other fields.