LIA TODAY

The Official Newsletter of the Laser Institute of America
The professional society dedicated to fostering lasers, laser applications, and laser safety worldwide.

Volume 13, Number 4 **July/August 2005**

In The News . . .

World's First UV 'Ruler' Sizes Up Atomic World

The world's most accurate "ruler" made with extreme ultraviolet light has been built and demonstrated with ultra-fast laser pulses by scientists at JILA, a joint institute of the National Institute of Standards and Technology (NIST) and the University of Colorado at Boulder. The new device consistently generates pulses of light lasting just femtoseconds (quadrillionths of a second, or millionths of a billionth of a second) in the ultraviolet region of the electromagnetic spectrum.

The device is expected to become an important tool for ultra-precise measurements in many fields of science, including chemistry, physics and astronomy. A ruler made with shorter wavelengths of light makes it possible to "see" more precise differences than ever before in the energy levels of light emissions that identify specific atoms, in the timing of chemical reactions, or, if additional applications are developed, in

(Cont. on pg. 10, see **In The News…**)

Laser Safety Inspection Criteria

by Ken Barat, CLSO

A responsibility of the laser safety officer (LSO) is to perform laser audits. The *American National Standard Z136.1 Safe Use of Lasers* references this requirement through several sections. One such reference is Section 1.3.2.8, Safety Features Audits, "The LSO shall ensure that the safety features of the laser installation facilities and laser equipment are audited periodically to assure proper operation." The composition, frequency and rigor of that inspection/audit rests in the hands of the LSO. A common practice for institutions is to develop laser audit checklists or survey forms.

It is common for audit findings from one inspector or inspection to the next to vary even when reviewing the same material. How often has one heard a comment, "Well this area has been inspected several times over the years and no one ever said this or that was a problem before!"

A great number of audit items and therefore findings are subjective because they are based on the experience and interest of the auditor to particular items on the checklist. Beam block usage, to one set of eyes might be completely adequate, while to another, inadequate. In order to provide consistency, the Laser Safety Office of the National Ignition Facility Directorate has established criteria for a number of items found on the typical laser safety audit form.

The criteria are distributed to laser users. It serves two broad purposes; first, it gives the user an expectation of what will be reviewed by an auditor. Second, it is an opportunity to explain audit items to the laser user and thus the reasons for some of these items, such as

(Cont. on pg. 6, see **Inspection**)

LIA Offers Laser Safety Auditing for Medical Facilities

The Laser Institute of America (LIA) is pleased to offer Laser Safety Auditing for Medical Facilities. This auditing helps health care facilities be in compliance with the *ANSI Z136.3-2005 Safe Use of Lasers in Health Care Facilities* laser safety standard, and can also help with becoming compliant/ prepared for JCAHO and OSHA inspections.

According to the Z136.3, "A laser safety audit of the facility and personnel safety features and equipment safety features shall be conducted and documented under the supervision of the LSO (laser safety officer). The frequency shall be determined by the LSO (recommended annual inspection)." LIA will review all aspects of a company's laser program – current laser policies and procedures, laser documentation, preventative maintenance procedures for laser equipment, training records, and more. Each facility that has an audit will receive an *ANSI Z136.1 (2000) Safe Use of*

(Cont. on pg. 8 see **Auditing**)

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LIA TODAY

The Official Newsletter of the Laser Institute of America

LIA TODAY is published bimonthly and strives to educate and inform laser professionals on laser safety and new trends related to laser technology. LIA members receive a free subscription to *LIA TODAY* and the *Journal of Laser Applications*® in addition to discounts on all LIA products and services.

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If you are interested in affordable advertising space in this newsletter or a subscription, please contact Jim Naugle at 407.380.1553 or 1.800.34.LASER.

Laser Institute of America (LIA) is the professional society dedicated to fostering lasers, laser applications and laser safety worldwide. LIA is the secretariat and publisher of the ANSI Z136 series of laser safety standards, and is a leading provider of laser safety education.

LIA offers educational programs, conferences and symposia on the applications of lasers and electro-optics. LIA's annual International Congress on Applications of Lasers & Electro-Optics (ICALEO®) features the world's foremost meeting on laser materials processing. The biennial International Laser Safety Conference (ILSC®) covers all aspects of laser safety practice and hazard control.

If you would like more information about the LIA, call 407.380.1553, 1.800.34.LASER or visit our home on the Web: **www.laserinstitute.org**.

LIA's Calendar of Events

For more information contact LIA at 1.800.34.LASER or visit www.laserinstitute.org

Laser Safety Officer Training
Sept. 26-30, 2005 • Portland, OR
Oct. 31-Nov. 4, 2005 • Phoenix, AZ
Dec. 5-9, 2005 • Orlando, FL
Feb. 6-10, 2006 • Orlando, FL
Mar. 27-31, 2006 • St. Louis, MO

Medical Laser Safety Officer Training
Sept. 23-24, 2005 • St. Louis, MO
Nov. 11-12, 2005 • Phoenix, AZ
Jan. 27-28, 2006 • Tampa, FL
Feb. 10-11, 2006 • Portland, OR

Applied Laser Safety
Aug. 16-17, 2005 • Orlando, FL

Fundamentals of Laser Safety
Nov. 15-16, 2005 • San Francisco, CA

ICALEO® 2005
Oct. 31-Nov. 3 • Miami, FL

PICALO 2006
April 3-5 • Melbourne, Australia

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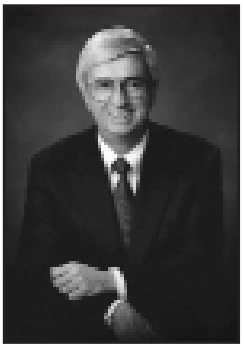
President's Message



LIA President Bill Clark

I had the pleasure of traveling with 16 other individuals from around the world on a "Lasers in Manufacturing" tour in Germany prior to the Laser '05 Show in Munich. Prof. Dr. Eckhard Beyer, director of the Fraunhofer-Institut IWS in Dresden, Germany, arranged the three-day tour. It began with a tour of the IWS facility followed by a bus tour of Dresden and a very excellent dinner in a local restaurant ably hosted by Professor Beyer. It was a truly excellent start to a very enjoyable tour of three of the main laser-based R&D facilities in Germany including LZH in Hanover and IFSW in Stuttgart.

For those readers (like myself) who have only a passing familiarity with the Fraunhofer Institute, there are 57 Fraunhofer Institutes – most located in Germany with a few in the U.S. Founded in 1949, the Fraunhofer Institutes are chartered to "bridge the gap between research and industry" – an almost DARPA-like philosophy except that the focus is on what benefits industry rather than the military. Combined "turnover" exceeds one billion euros a year. The work product is not solely a report. Rather a project is considered successful when it results in a solution that makes money for the industrial partner.

I spent the week following this tour at the Laser '05 Conference and Exhibit in Munich, Germany. I was astounded at the size and vibrancy of this event. The exhibit itself seemed twice as big as Photonics West and three times the size of CLEO. I have not experienced as dynamic and positive a conference/exhibit since the boon days of telecom and OFC.

I'm left to wonder if there is a connection between the governmental foresight that lead to the creation of entities like the Fraunhofer Institutes and the excitement that permeated Laser '05.

Executive Director's Message

LIA Executive Director Peter Baker a.ka. Count Dooku with new friend Darth Maul.

Famous for a Moment

As everyone in the galaxy knows by now, the final Star Wars movie "Revenge of the Sith" is in movie theaters. My teenage son, Scott, was counting the days and hours until the release, so May 18th found me attending the midnight show dressed as Count Dooku accompanied by a car full of teenagers dressed as Obi-Wan Kenobi, Darth Vader and so on. This, in turn, led to my few moments of fame when I was a finalist in the best costume contest, people wanted their photo taken with me including the winner "Darth Maul" (below) who is a NASA engineer, and I was interviewed on the 10 p.m. news.

My fame was fleeting, however, as my character in the movie was decapitated in the first reel!

So it is back to my day job. I went off to Laser 2005 in Munich to attend the LIM Conference chaired by LIA Past President Eckhard Beyer, then visited with ICALEO® Education Chair Bill O'Neill in Cambridge and ICALEO® LMP Chair Tony Hoult and SPI's Vice President of Sales John Tinson in Southampton (see article page 10).

Very interesting, very educational and more enduring than my short career as a celebrity!

Inspection , cont. from pg. 1

labeling of beam blocks.

The following are some examples from the audit criteria handout.

Safety Documentation

Interlock Log: Checks need to be current; that is one check per quarter (no more than 90 days between checks is the goal). These checks are generally an operational performance. For complex systems a written procedure is required for the tester to follow and note problems. The preference is for all labs to follow a written procedure. This assures consistency between checks regardless of who in the lab performs the check. If problems are noted, follow up action and documentation of resolution is required.

Alignment Procedure: At a minimum, there should be general laser alignment guidance (contact the NIF LSO for a copy). Whenever possible, laser use specific alignment procedures should be developed for the different laser activities. System start up procedures could be considered part of this.

Posting & Labeling

Hazard Communication poster: Laser hazards need to be on the Hazard Communication poster. Check the poster to see that it represents all hazards in the room, not just your work.

Laser sign: Laser use areas (Class 3B or Class 4 lasers) are required to be posted with a laser warning sign. The sign should accurately convey the wavelengths in use and any laser protective eyewear requirements. The sign needs to be on all accessible entrances to the laser use area.

Emergency Contact: Many lab doors have emergency contact information posted. It must be readable and accurate.

Beam Enclosures

The goal is to contain the laser beam and any stray radiation to the optical table or intended use area. Enclosures that confine the beam are one of the best methods to accomplish this. This means individual portions of the laser beam can be contained as in a beam tube, or containment can be of the optical set up, by means of a barrier around the entire table or portions of it. This barrier can be several inches higher than the intended beam path, open or closed at the top, or panels several feet high enclosing the entire table.

Total enclosure: This is the preferred but not always possible method. Panels can be labeled with an interlocked or non-interlocked warning label(s).

Totally open: While not preferred, in some cases it maybe the only workable option. In such a case, use of properly placed beam blocks is critical to safety. A check for stray reflections is required after each alignment or beam manipulation.

Combination: In some cases beams will not be totally open or totally enclosed but at times a combination of both. A combination approach is acceptable.

Perimeter guard: It must be of sufficient height above the intended beam height to prevent a likely stray reflection from rising above the guard. One concern is upward angled beam splitters.

Beam tubes: For open distances between optics over 2 feet it is recommended beam tubes be employed. The tube need not be of a material opaque to the laser radiation, it is preferred. Keeping hands out of the beam is the major goal.

Protective Eyewear

Laser protective eyewear is a critical part of laser safety for the individual. Chiefly, it relies on the user to wear the proper eyewear and take care not to abuse the eyewear. All laser users need to know they have an obligation to make sure all in the laser lab are wearing the proper eyewear when a laser radiation hazard is present.

Full Protection: This type is designed so that the optical density of the eyewear will absorb all the laser radiation from a direct hit for a period of up to 10 seconds. Intra beam or direct viewing of the laser beam is strictly forbidden.

Alignment: Use of alignment eyewear is allowed for visualization of visible beams for alignment activities. The NIF LSO grants approval of such eyewear.

Labeled: The required labeling is the optical density (OD) and wavelengths for which the eyewear designed to provide protection from. Labeling on some common styles of eyewear can wear off. Unlabeled eyewear or eyewear with unreadable labeling must be removed. Labeling can be self adhered.

Quantity: The quantity of eyewear on hand must be sufficient for the expected number of daily users and anticipated visitors. Visitors should be limited to full protection eyewear only.

Condition: Laser eyewear must be in good condition, free from scratches, abrasions or burns in critical vision areas.

Correct OD: The OD on eyewear must meet the levels required for the laser applications in the SOP.

Prescription Age: Due to the cost of the prescription laser eyewear, the user may be using a pair with a prescription several years old. A consultation with Health Services is required to determine if a new set of eyewear is required.

Storage: Eyewear must be stored in a manner that preserves its condition. Storage can be outside the laser use area or inside. Each approach has advantages and disadvantages.

Holder: The storage of laser protective eyewear will have a direct effect on its lifetime. The practice of eyewear being thrown in a drawer or left on tables (at the end of the day) is considered unacceptable. The NIF LSO provides a wall pouch holder on request.

Beam Containment

Beam Blocks: These should be made of a material that will be non-combustible for the power output expected to strike the block. It must not transmit the wavelength in use. Cardboard maybe suitable for some applications while metal will be required for others. The block should not be reflective for the wavelengths being used. All active beam blocks must be secured to the optical table (unless the foot print stops tip over and must be approved by NIF LSO). The size of the blocks must be sufficient to block the beam diameter and potentially mis-aligned beams. A label on the block indicating that it is a beam block and not to be moved is recommended but not required. Such labeling is considered a good practice to help locate any beam blocks that might be misplaced or knocked over.

Housekeeping

On laser work surfaces: The area on the optical table encompassing and directly

con't on pg. 8

Auditing, cont. from pg. 1

Lasers standard, an *ANSI Z136.3*, guidelines for establishing competency checklists, sample policies and procedures, sample preventative maintenance guidelines, a skills validation checklist, and one complimentary registration to LIA's Medical Laser Safety Officer Training Course (an $895 value). Each facility will also receive a written report with recommendations based on the ANSI Z136.3-2005 standard within two weeks of the completed audit.

Additionally, adding customized laser safety training for your staff can enhance auditing. LIA's one-day Medical Laser Safety Update Course will get all personnel updated on the latest laser safety practices and will help fulfill training obligations according to the Z136.3.

For more information, call Rich Greene at 800.34.LASER/407.380.1553, e-mail rgreene@laserinstitute.org, or visit www.laserinstitute.org.

con't from pg. 6

adjacent to the beam path needs to be free of all non-essential reflective sources. This includes optics, tools, foil, and storage containers. This does not include established alternate beam paths for related experiments.

Related Work Surfaces

Adequate storage space: Space is always a premium in any laboratory; the more organized the space is the safer the work area will be. Divisions and programs should make resources available to individual labs to aid in this goal. Users have a dual responsibility here, first to remove unused equipment, either to surplus or storage outside the lab, and most importantly, to keep an on going effort to organize and put away supplies.

Trip hazards: To protect cords and hoses from tears and prevent tripping over them a number of commercial devices are available. The application of these devices needs to be reviewed during the audit.

Emergency lighting: The reviewer should see that the quantity and locations are adequate, and that it is tested for functionality.

Summary

The goal of the criteria list is to aid the laser user in understanding laser safety. This hopefully leads to compliance of the items reviewed during a laser audit.

The goal of the explanation of these common items is that laser users will develop and use safer laser work practices. A complete laser audits criteria can be obtain by e-mailing Ken Barat at barat1@llnl.gov.

Ken Barat (barat1@llnl.gov) is a certified laser safety officer with the National Ignition Facility, Lawrence Livermore National Laboratory, Livermore, Calif.

Our Condolences – Wordie Parr Passes

Wordie H. Parr, Jr., Ph. D, beloved husband, loving father, devoted grandfather and great grandfather, passed away on June 16, 2005. He was a graduate of the University of Louisville and a veteran of WWII serving four years on a destroyer in the South Pacific.

During his career, Parr was a laser skin threshold investigator at the U.S. Army Medical Research Labs in Fort Knox, Ky. in the 1960s and was the former chair of the ANSI Z136 subcommittee on skin effects. In 1972 he went to work for NIOSH in Cincinnati, Ohio and for 10 years was head of the Physical Agents Branch. He retired in 1982.

"We all remember many great times with Wordie! He was always so jovial," said David Sliney, a program manager for the U.S. Army Center for Health Promotion and Preventive Medicine Laser/Optical Radiation Program.

Parr was a member of the health physics society and served as president and on the board of directors of the Bluegrass, Ky. chapter and the Cincinnati, Ohio chapter. He was a member of the scientific ACGIH, AIHA, ANSI, and AWS. He was a member of the Masonic Lodge 191 in Louisville, and was honored to be a Kentucky Colonel.

LIA extends its deepest condolences to Wordie's family and friends. Memorials may be made to the Crescent Springs Presbyterian Church, 710 Western Reserve Rd., Crescent Springs, KY 41017.

"As usual, Wordie (far left) is not distracted from his reflections of pleasant plans while Mike Wolbarsht raises his hand to make a point," said Sliney of this Z136 committee meeting from the '70s. Also there from left, Dave Sliney, George Wilkening and Sid Charschan.

LIA Exec Director Visits Corporate Member SPI

In June I paid a visit to LIA Corporate Member Southampton Photonics, Inc., (SPI) in Southampton, U.K., as part of a trip that included attending Laser 2005 in Munich. SPI develops and manufactures CW, modulated and pulsed fiber lasers, components and subcomponents for a variety of industrial applications.

John Tinson, SPI vice president of sales (pictured with ICALEO® LMP Chair Tony Hoult) gave me a very interesting tour and showed me the tower for drawing fiber and the manufacturing line for fiber lasers.

SPI was founded by Professor David Payne F.R.S. of the Optoelectronics Research Centre, University of Southampton, who is the SPI chairman. In the 1980s a team led by David Payne developed a means of amplifying light with a fiber that became known as the EDFA (erbium doped fiber amplifier). The potential was widely recognized by telecom companies as a means of avoiding electronic repeaters in land-based and sub-sea telecom networks.

John Tinson and the other key SPI executives worked for a variety of corporations in Europe, all connected in some way with EDFAs and with David Payne. As Tinson said, "All of us were touched by Professor Payne's invention in some way during our earlier careers. The technology of the EDFA of course went on to become fiber lasers (creating a cavity on an EDFA and increasing the power). So by the year 2000 the telecom bubble burst and one at a time over three years we all ended up working under one roof using an invention that had sprung from the ORC but in a new market and application."

Above: Tony Hoult, left, and John Tinson. Below: LIA's Peter Baker, right, with Prof. David Payne.

After visiting SPI, I went on to the University of Southampton to visit Professor Payne at the Optoelectronics Research Centre. Professor Payne is co-author of a plenary paper for ICALEO® 2005 "Fibre Lasers: The New Wave in Material Processing".

One unusual item that caught my interest was the fact that Prof. Payne has founded 10 companies over the years and all of them were successful. I am hoping to lure him to ICALEO® 2006 to give a presentation in the business session to share his secrets of success with us.

In The News, cont. from pg. 1

the dimensions of certain nanometer-scale objects.

Doctor Sees Risks With Green Pointers

Commercially-available class 3A green laser pointers can cause visible harm to the eye's retina after exposure times as short as 60 seconds, according to ophthalmologist Dennis Robertson from the Mayo Clinic, reported the May 12 issue of *Optics.org* (*Archives of Opthalmology* to be published).

Robertson performed his tests on a patient whose eye was due to be removed because of ring melanoma. He used a commercially-available class 3A green pointer with an average power of less than 5mW. The tests involved pointing the laser at the eye's fovea for 60 seconds, then five minutes on a site five degrees below the fovea, followed by 15 minutes on a site five degrees above it.

Twenty-four hours after exposure, Robertson found retinal damage at the fovea and the 15-minute exposure site. The retina at both sites was discolored, showing that the retina's pigment layer was damaged, although this did not cause a measurable decrease in the visual function of the patient's eye.

"This is a potential hazard to people's eyes, but it is rarely going to be a practical hazard because of the aversion reflex we have will naturally cause a person to blink or turn away," said Robertson.

Welcome New LIA Members

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• Pilgrim Associates, Lakeland, FL

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Members In Motion

Catalog X Released

Melles Griot, Carlsbad, Calif., has announced the release of *Catalog X*, the 10th in a landmark series of product and technology guides extending back 35 years. With more than 25,000 individual parts, 1,100 completely new items, extensive tutorial sections, and a variety of features designed to simplify the component selection process, the 1,148-page *Catalog X* is the world's most comprehensive source of photonics components. To obtain a copy, visit www.mellesgriot.com, call 800-835-2626, or e-mail sales@catalog.mellesgriot.com.

Miyachi Unitek Corporation

Unitek Miyachi, Monrovia, Calif., has announced a corporate name change to Miyachi Unitek Corporation. The change will take place over the summer and is part of a worldwide branding strategy initiated by the parent company, Miyachi Corporation, Tokyo, Japan. Miyachi's goal is to unify the company's many brands and conduct business with a common identity on a global basis.

GSI Opens in China

GSI Lumonics, Farmington Hill, Mich., and Rugby, England, has opened two regional sales offices in mainland China – one in Shanghai, the other in Beijing – to more fully support the growing market for the company's laser products within the region. The regional offices are being managed by seasoned GSI Lumonics employees who will provide sales and support activities as well as strengthen the company's existing distributor network. The offices will handle the complete range of GSI Lumonics laser products.

ASC Z136 Update

Operating procedures for ASC Z136 have once again been revised, receiving unanimous committee approval in late June. The *Procedures for the Development of Z136 American National Standards* have been forwarded to the American National Standards Institute (ANSI) for its review. After ANSI approval has been granted, the document will be available for download from the Z136 website (www.z136.org).

A meeting of the ANSI Z136 Ad-Hoc Committee on Additional Standards is scheduled for Aug. 22-23, 2005 in Edgewood, Md. hosted by Dr. David Sliney. The purpose of the committee is to examine the potential for added standards in the ANSI Z136 Safe Use of Lasers series of standards. It is emphasized that only a proposal to ASC Z136 is to be formally produced.

In conjunction with the Ad-Hoc meeting, technical subcommittee 4 (TSC-4) Control Measures will meet Wednesday morning, Aug. 24. This meeting is tentatively scheduled from 8:30 a.m. to 3:30 p.m. with a working lunch. Following TSC-4, Dr. Fred Seeber will hold a standards subcommittee 5 (SSC-5) meeting. SSC-5 is the subcommittee responsible for the development and maintenance of *ANSI Z136.5 Safe Use of Lasers in Educational Institutions*.

For information on committee activities or membership, contact Barbara Sams at LIA, 407-380-1553 or email bsams@laserinstitute.org.

Member Innovations

Coherent Introduces 532nm OEM Laser

The new Compass 115M from Coherent, Inc., Santa Clara, Calif., is a low power, continuous wave, 532nm laser optimized for OEM applications in bioinstrumentation, graphic arts, and inspection. This new laser will enable a new generation of economical instrumentation at output power levels of 5 and 10mW. The Compass 115M offers the same performance and reliability as higher power Compass lasers, but with a 30% cost reduction over these earlier models. This new laser follows the successful Compass 315 and Compass 215. Compass 115M has been developed to specifically address the growing cost constraints in bioinstrumentation. Typical applications in bioinstrumentation for the Compass 115M include flow cytometry, confocal microscopy and spectroscopy. It will also be useful for lower power graphic arts and inspection applications. For more information, visit www.Coherent.com.

New From Melles Griot

Melles Griot, Carlsbad, Calif., has announced the 56 RCS series, a new family of high-performance diode laser assemblies with output ranging from 408 to 830nm. The 56 RCS-series platform is designed to satisfy the requirements for both OEM and end-user applications. Based on the proven Melles Griot 56 ICS technology, the new platform incorporates advanced beam conditioning optics for improved output quality and a new user interface that includes an hour meter, status LEDs, and operator control of laser and thermoelectric cooler currents. The 56 RCS 002/HV, which produces 50mW of output at 408nm, was designed specifically for reprographics applications, yet is an ideal choice for any application requiring a violet diode laser.

Melles Griot has also introduced three new OEM diode laser families designed specifically for patient-alignment, machine-vision, and flow cytometry applications. The 56 ADX-, 56 BDX-, and 56 CDX-series lasers are cylindrical with diameters of 9.5, 12.7, and 14.7mm, respectively. All three series are available with output wavelengths ranging from 634 to 830nm and guaranteed output power up to 30mW. Beam options include round, elliptical, or line output. In addition to standard cw operation, options are available that allow modulation with a bandwidth up to 100kHz. All three products can be customized for specific OEM requirements. For information, visit www.mellesgriot.com.

Lasers for Industrial Applications

The DS40 diode pumped solid-state Q-switched lasers from Photonics Industries International, Inc., Bohemia, NY, produce up to 25 Watts UV, the highest power commercially available 355nm at 50kHz for applications such as hole drilling, laser singulation and glass cutting. Equipped with the patented pulse energy control feature, the DS40 provides a large range of pulse energies, and pulse repetition rates (>150kHz). Using an end pump design, the DS40 delivers superior TEM_{00} beam mode quality with M2 < 1.2 with diffraction-limited mode. The DS40 is available at 50 Watts for infrared (1064nm), green 35 Watts (532nm), >20 Watts UV (355nm), and 5 Watts deep UV (266nm) wavelengths. For more information visit www.photonix.com.

GSI's New Lasers

GSI Lumonics, Farmington Hill, Mich., and Rugby, England, has introduced its second generation of pulsed Nd:YAG lasers that combine the company's patented TR technology for a high beam quality with state-of-the-art control and beam delivery technology. The JK450HP and JK600HP, which utilize a twin-rod oscillator design to increase efficiency and beam quality, offer rates up to 1,000 Hz and minimum pulse lengths of 0.2ms for cutting, welding and drilling applications. For more information visit www.gsilumonics.com.

New Concoa Software

Concoa, Virginia Beach, Va., has introduced a new software package for monitoring Concoa's line of automatic switchovers and blender equipment via the Advantium 8 remote alarm. The software enables the user or distributor to remotely monitor gas systems such as laser resonator, micro-bulk vessels, blending systems, gas analyzers and laboratory sensors. It monitors the output of the Advantium 8 remote alarm 8 RS232 communication port and works in the background of a desktop computer. It flashes an icon when an alarm event occurs. For more information visit www.concoa.com.

Ophir's Introductions

Ophir Optronics, Inc., Wilmington, Mass., has introduced the 3A-FS thermal surface absorbing head for applications that require very low power and/or energy measurements on lasers down to tens of microwatts. It can supply CW and pulsed measurements of 40mW to 3W and 7mJ to 2J.

Ophir has also introduced the PD300-3W photodiode laser power head with increased power density up to 150W/cm2. The PD300-3W has a spectral response from 350nm-1,100nm. It offers a wide power range from nanowatts up to 3 Watts of power. For more information, visit www.ophiropt.com.

LIA Announces

BLS Exam Dates

The Board of Laser Safety™ (BLS) will be offering Certified Laser Safety Officer (CLSO) exams Aug. 19 in Denver, Colo., Sept. 24 in Orlando, Fla., and Sept. 30 in Portland, Ore. The exams will be held directly after LIA's LSO training courses.

BLS will also be offering Certified Medical Laser Safety Officer (CMLSO) exams Aug. 19 in Denver, Colo. and Sept. 25 in St. Louis, Mo. after LIA's MLSO courses. Cost is $300 for either exam as well as the application. For more information contact Rich Greene at bls@lasersafety.org, 800-345-2737, or visit www.lasersafety.org.

LIA's 1st Regional Meeting

Today's laser professionals are faced with many challenges and often find themselves disconnected. Cutting costs, safety concerns and global threats are just a few of these challenges. LIA invites you to network with other laser professionals facing the same challenges at its very first regional meeting to be held in Sturbridge, Mass. on Aug. 18, 2005.

The subject being presented is Industrial Lasers in China: A Global Market Threat? The guest speaker will be David Belforte, publisher/editor-in-chief of *Industrial Laser Solutions* magazine and an international consultant on industrial laser materials processing. His annual market survey on the global market for industrial lasers is the most widely quoted report on this subject. He is a past president of the LIA and a recipient of the Arthur Schawlow award for contributions to the technology.

An optional tour of IPG is also on the agenda. IPG is a world leading developer and manufacturer of a unique line of high power and high performance fiber lasers and fiber amplifiers for industrial, communications, medical, scientific, test and measurement and other commercial applications. IPG's world headquarters is in Oxford, Mass., just 30 minutes from the meeting. You will see a high power fiber laser production area, applications lab with live demo, diode manufacturing facility, low power fiber laser production area, and a demo on fiber splicing.

The meeting and tour are free for all LIA members, but you must register. The nonmember price is $10. Visit www.laserinstitute.org for more information.

CM Directory Change

It has come to LIA's attention that the listing in the printed and online directory for LIA Corporate Member Jue Hua Laser Tech. Development Co. in Shanghai, China is incorrect. LIA apologizes for this oversight and has made the proper corrections. The correct listing is as follows: Jue Hua Laser Tech. Development Co., Ltd., 4F, No. 1, Lane 743, Tao Du Rd., Shanghai 20033,3 Peoples Republic of China; Phone: +86-21-52788140, Fax: +86-21-52788143, webmaster@jhlaser.com, www.jhlaser.com.

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