

LIA TODAY

THE OFFICIAL NEWSLETTER OF LIA

Volume 33
Issue 1
2024

On the Cover:

Central Florida
Photonic Powerouse

Also in this Issue:

Entertainment Focus
– Raising Standards
Through Training

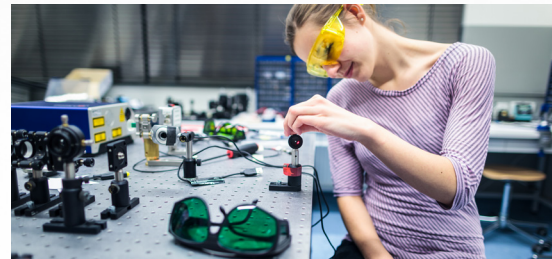


LIA TODAY is published quarterly to educate and inform students and professionals of challenges and innovations in the field of photonic materials processing.

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CENTRAL FLORIDA PHOTONICS POWERHOUSE

The Laser Institute talks with Mike McKee, Associate Director of the Undergraduate Program at The University of Central Florida's College of Optics and Photonics to discuss new collaborative initiatives with Valencia College to drive photonics education and awareness. Both institutions aim to inspire a new generation of STEM enthusiasts to explore the possibilities within the field of photonics.

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Prof. Aravinda Kar
LIA 2024 President

As the President of LIA's Board of Trustees, I must first recognize the exemplary leadership of my predecessor, Dr. Henrikki Pansar, during 2022 and 2023. Dr. Pansar's guidance proved instrumental in positioning LIA for a successful future. I also thank Gilbert Haas, as a volunteer leader, followed by being recently installed as LIA's Executive Director, for his guidance of the LIA staff. Moreover, I commend Gil and the entire LIA staff for their unwavering dedication and effort in surpassing our organizational goals last year.

Welcome to the returning officers and new members of the Board of Trustees. Your collective expertise and vision are pivotal to our continued success.

The laser industry is a robust pillar of global economic growth, driving significant advancements across various sectors, including medicine, 3D printing, semiconductors, nanomaterial-based manufacturing, quantum computing, artificial intelligence, and energy. As a single example, consider how indispensable lasers have become for manufacturing processes such as microvia drilling for interconnects in microelectronic chip carriers. Further, legislative support, such as the CHIPS Act in the USA and similar initiatives worldwide, promise to foster new opportunities and reinforce the laser industry's global impact.

Looking ahead, we are excited to re-introduce LIA's Laser Additive Manufacturing Workshop (LAM) for its 13th iteration in Dayton, OH, from July 15-17, 2024. Registration is now open, and I encourage you to join us. Preparations are also well underway for the 43rd annual ICALEO in Hollywood, CA, from November 4-7, 2024. Great strides are being taken to make this year's ICALEO a landmark event. Lastly, stay tuned for some exciting news regarding the International Laser Safety Conference (ILSC), which will take place in March of 2025. We look forward to sharing more details with you soon.

In summary, while the future is yet to be written, I am optimistic about the potential applications, opportunities, and global impact that our community will achieve. I encourage you to join the conversation and collaborate with us at LIA's upcoming events. We must 'invent the future,' not wait for it. Embracing laser processing as the enabling technology, rather than merely a process improvement, is essential for propelling the growth of our industry.

United in purpose,



Gilbert Haas
Executive Director

As we move further into 2024, the energy, anticipation, and commitment from our staff, volunteers, and membership regarding growth within our industry and the laser community have kept LIA very busy. The dedication and hard work of the LIA staff has been instrumental in shaping our strategic direction for the upcoming year.

I've had the privilege of collaborating with the staff to identify and develop a strategic plan focusing on the profit centers within our organization. Our budget for the 2025 fiscal year, which began on April 1, 2024, has been approved by the Board of Trustees. This budget incorporates those strategic initiatives, setting us on a promising path for the future.

In our ongoing efforts to enhance collaboration and accommodate our growing staff, we are currently undergoing office renovations. These improvements will provide an even more conducive environment for innovation and teamwork. Regarding LIA growth, I'm excited to announce that we've welcomed Brian Coleman as our new business development director. Brian's expertise and enthusiasm are already proving to be invaluable assets to our team.

Thank you for your continued support and involvement with The Laser Institute. Together, we are shaping a brighter future for the laser industry.

Sincerely,

Catch up on all of the 2023 issues!

<https://www.lia.org/subscriptions/lia-today>



Special Thanks to our Editorial Committee

Martin Barraclough - ER Productions
Dr. Youngfeng Lu - University of Nebraska - Lincoln
Dr. David Sliney
Dr. Ron Shaeffer - HH Photonics

LIA Staff Editors

Jana Langhans; John McCormack

A Look Ahead at Upcoming Laser Safety Training!

LIA's Newest Corporate Members!

LASER SAFETY OFFICER	LASER SAFETY OFFICER WITH HAZARD ANALYSIS	MEDICAL LASER SAFETY OFFICER	INDUSTRIAL LASER SAFETY OFFICER	CALCULATING LASER SYSTEM HAZARDS
February 19-21 Orlando, FL	February 19-23 Orlando, FL	March 16-17 Virtual - Zoom	March 20-22 Novi, MI	May 13-15 Virtual - Zoom
April 8-10 Orlando, FL	April 8-12 Orlando, FL	May 18-19 Eden Prairie, MN	May 15-16 Novi, MI	August 12-14 Virtual - Zoom
September 16-19 Orlando, FL	September 16-20 Orlando, FL	July 13-14 Virtual - Zoom	August 14-15 Novi, MI	December 16-18 Virtual - Zoom
November 18-20 Orlando, FL	November 18-22 Orlando, FL	September 7-8 New York, NY	November 13-14 Novi, MI	
		December 7-8 Virtual - Zoom		

For a complete list of courses, both online and in-person, please visit lia.org/training.

Course Highlight

MEDICAL LASER SAFETY OFFICER MAY 18-19, 2024 - EDEN PRAIRIE, MN



Are you an RN, OR supervisor, surgical tech or training coordinator who has been assigned the critical responsibility of LSO in a medical facility? Designed to meet the special needs of medical professionals, LIA's Medical Laser Safety Course will provide the training you need to build and maintain a successful laser safety program.

As an LSO at a medical facility, you have a unique set of responsibilities. Not only is laser safety a top priority to protect your staff, but it is critical to protecting your patients. Our MLSO training program addresses the specific laser safety protocols as they relate to medical and healthcare environments.

This course meets all LSO training requirements as outlined by the ANSI Z136.3 Safe Use of Lasers in Health Care standard, OSHA, and The Joint Commission.

NEW LIA MEMBERS

- HSG KK
- [RMA \(Business Unit of AIC S.A.\)](#)
- [Stack AV](#)
- [University of Massachusetts \(Boston\)](#)

To find out more about becoming a corporate member, email membership@lia.org or visit lia.org/membership/corporate.



Already an LIA member? Ask about joining our Facebook group!

A Look Ahead at Upcoming Laser Industry Conferences!

1. Photonics West - Jan 30-Feb 1, 2024 (San Francisco, CA, USA)
2. AORN - Mar 9-12, 2024 (Nashville, TN, USA)
3. AKL - Apr 17-19, 2024 (Aachen, Germany)
4. DOE Workshop - Apr 30 - May 2, 2024 (Austin, TX, USA)
5. FABTECH Mexico - May 7-9, 2024 (Mexico City, Mexico)
6. RAPID + TCT - June 25-27, 2024 (Chicago, IL, USA)
7. **LAM - July 15-17, 2024 (Dayton, OH USA)**
8. ALAW - June 25-27, 2024 (Novi, MI, USA)
9. IMTS - Sept 9-14, 2024 (Chicago, IL, USA)
- **ILC - Sept 11, 2024 (Chicago, IL USA)**
10. LANE - Sept 15-19, 2024 (Fürth, Germany)
11. FABTECH - Oct 15-17, 2024 (Chicago, IL, USA)
12. **ICALEO, Nov 4-7, 2024 (Hollywood, CA, USA)**

Cooperating Conference



A Look Ahead at LIA's Industry Conferences!



July 15-17, 2024 - Dayton, Ohio

LAM Updates

The [2024 Advance Program](#) has been released! Take a peek at the program to see what exciting presentations you can expect at this year's event.

Exciting News - Early Bird Registration has been extended through May 17th! Don't miss your chance to save on registration and get a special group rate on the event hotel. Find all the information at www.lam.ngo/attend.



September 11, 2024 - Chicago, Illinois

ILC at IMTS Updates

The Industrial Laser Safety Conference will be hosted at IMTS in Chicago again this year! Early Bird Registration is now available and a program for this 1-day event will be released soon, so be on the lookout!

Visit www.lia.org/industrial-laser-conference for more information.



November 4-7, 2024 - Hollywood, California

ICALEO Updates

Join us in sunny Hollywood for this year's International Congress on Applications of Lasers and Electro-Optics! The Call for Papers has closed and we are excited to be putting together another program of laser-related cutting-edge research and technology from around the world.

Registration will be opening soon!



March 2-5, 2025 - Orlando, Florida

ILSC Updates

SAVE THE DATE: We are excited to announce our next ILSC conference will be in Orlando, Florida from March 2-5, 2025! More information will be coming soon, so subscribe on our website at ilsc.ngo to stay in the loop as updates become available.



STUDENT SPOTLIGHT

Name: Cesar Lopez-Zelaya
Hometown/State: Orlando, FL
Year in School: 2nd Year
Area of Study/Major: Optics and Photonics

When were you first introduced to photonics/electro-optics?

☞ I was introduced to the field of optics and photonics during my junior year of undergraduate studies. That year, I took my first optics courses: geometric optics and foundations of photonics. Concurrently, I embarked on research with the Knight Vision Lab at CREOL under Dr. Kyle Renshaw's guidance. This experience exposed me to diverse topics in the field, including imaging systems, integrated photonics, and optical fibers. ☞☞

What or who inspired you to choose your line of study?

☞ My inspiration is deeply rooted in the guidance and mentorship I received from remarkable individuals throughout my academic and professional journey. In particular, my advisors, Dr. Kyle Renshaw during my undergraduate studies, Dr. David Hagan, and Dr. Eric Van Stryland, both from my master's studies, alongside my mentor from AFRL, Dr. Christian Keyser, have played pivotal roles in shaping my aspirations and fueling my commitment to excellence. Their unwavering dedication to advancing the field has motivated me to follow in their footsteps and contribute meaningfully to the world of optics and photonics. ☞

Describe your favorite course you have taken so far.

☞ It is difficult to choose a favorite course given the number of great courses I have taken throughout my time at CREOL. However, my favorite course so far is Quantum Optics taught by Dr. Ayman Abouraddy. The lectures were thought-provoking and engaging, covering interesting topics such as the quantization of the electromagnetic field, entangled states of light, single and two-photon interference, and the Jaynes-Cummings model. What made this course particularly impactful was its relevance in highlighting the importance of quantum optics, such as its crucial role in advancing cutting-edge research areas like quantum communication, quantum cryptography, and atomic physics. ☞☞

Are you researching anything at the moment? Can you tell us about it?

☞ Currently, my main research focus revolves around the development of laser sources through the exploration of nonlinear effects in optical fibers. The different kinds of fibers we have explored and worked with include solid-core silica and chalcogenide fibers, as well as hollow-core fibers such as photonic bandgap and anti-resonant fibers. Additionally, we delve into gas- and liquid-filled fiber nonlinear effects, encompassing phenomena like stimulated Raman scattering and optical parametric amplification. More recently, my research has extended to measuring refractive indices of liquids using Rayleigh interferometry and determining stimulated Raman gain coefficients from spontaneous Raman scattering. ☞☞

What would you like to do in the future with your studies?

☞ Upon completing my master's studies at CREOL, I aim to return to AFRL to apply the knowledge and skills I gained to continue advancing the optical fiber-based devices being developed there. Concurrently, I plan to apply to Ph.D. programs, aspiring to engage in research focusing on a blend of nonlinear optics and quantum optics. Long-term, I envision a career as a research scientist at AFRL, potentially leading a research group, bringing to life ideas in the area of high-power fiber lasers, nonlinear fiber optics, and the generation and application of quantum states of light. My commitment lies in utilizing my studies for furthering the research and development of technologies that benefit our nation and the global community. ☞☞

CENTRAL FLORIDA'S PHOTONICS POWERHOUSE

The Laser Institute's John McCormack and Jana Langhans talk with Mike McKee, Associate Director of the Undergraduate Program at The University of Central Florida's (UCF) College of Optics and Photonics to discuss new collaborative initiatives with Valencia College to drive photonics education and awareness. Both institutions aim to inspire a new generation of STEM enthusiasts to explore the possibilities within the field of photonics.

Photonics drives virtually every aspect of modern life; from revolutionizing telecommunications through fiber optics to enhancing medical diagnostics and treatments with laser-based technologies. You can feel the momentum building around photonics studies at the University of Central Florida and its partner programs. UCF is one of just a few recognized photonics programs in the United States where academia and research labs work to explore the potential of light-based technologies. We sat down with Mike McKee, Associate Director of the Undergraduate Program at The University of Central Florida's College of Optics and Photonics, to talk about recent efforts and exciting new initiatives that will bring more students into photonics.

The UCF College of Optics and Photonics was the first college in the United States dedicated specifically to optics and photonics. They offer graduate certificate programs, master's programs, and a PhD program in optics and photonics. Since 2013, in collaboration with the College of Engineering and Computer Science, the school also offers a Bachelor of Science in Photonic Science and Engineering, one of only six of its kind offered in the country. This has become a staple in the Central Florida collegiate region and UCF has started to partner with Valencia College to become a powerhouse for photonics studies.

Valencia College, located in Orlando,

Florida, is a public college that offers two-year Associate degrees, including an Associate of Science in STEM (AS-STEM/AA) with Photonic Science & Engineering Specialization. In addition, they have another Associate of Science in Electrical and Computer Engineering Technology with specialization in Laser and Photonics which is designated to either go to the workforce (as a technician) or to the Bachelor of Science in Electrical and Computer Engineering Technology, offered at Valencia as well. They also offer a 15-week accelerated skill training (AST) optics certification program on optics fabrication, optical assembly, photonics, and fiber optics. After the program, students have the opportunity to earn nationally recognized certifications, and with Valencia partnering with big employers, the program can lead to them getting jobs as precision optics technicians, optics assemblers, or photonics technicians, or transfer to the A.S. ECET mentioned above, and continuing their education.

With Valencia being a two-year college, UCF gets a lot of transfer students. In fact, about a quarter of UCF graduates start their college careers at Valencia. Mike explained how UCF has modified their prerequisite requirements and Valencia now offers two of the core courses already taught at UCF – Geometric Optics and Foundations of Photonics – so students are able

to check those courses off before they transfer to UCF, making the transition into the photonics program more seamless. "They have an AS STEM degree that leads to us with a bachelor's degree and then a master's degree, so we've got really an entire ecosystem." Students are now able to earn 64 of the 128 credits over at Valencia that are needed to graduate with a Bachelor of Science in Photonic Science and Engineering degree, so it streamlines the process and puts them on track for the four-year degree from UCF. "What happened up until this point is that the students were just taking some general classes that were in electrical. They weren't necessarily wasting classes, but they didn't get to the heart of the photonics program."

These new course offerings also benefit UCF students who are now able to go take some elective courses at Valencia, or those who are just not thriving in the major at UCF. Mike said, "We've got students that don't do well in our program, but they can go over to Valencia and do an AS

degree over there and get a good job. That's what I care about. It's not about

retaining them here at UCF, it's about making sure the student finds their pathway."

Having these courses and programs at Valencia also gives more students exposure to photonics. Even if they have not heard of photonics before or know much about it, they will now see it in their course roster as an option and can look further into it.

"It's about making sure the student finds their pathway."

VALENCIA COLLEGE

COMPLETE
CORE MATH, PHYSICS, &
PHOTONICS COURSES

+

GENERAL EDUCATION CLASSES

+

EARN
AS-STEM & AA DEGREES
(64 CREDITS)

+

TRANSFER
TO UCF CREOL
FINISH ADVANCED COURSES

UCF CREOL, The College of Optics and Photonics

COMPLETE
CORE MATH, PHYSICS, &
PHOTONICS COURSES

+

GENERAL EDUCATION COURSES

+

ADVANCED PHOTONICS COURSES

+

EARN
BS DEGREE IN PHOTONIC SCIENCE &
ENGINEERING
(128 CREDITS, INCLUDING
VALENCIA CREDITS)

Association of Physics Teachers (AAPT) Meeting, to spread awareness of the programs and photonics as a whole.

They've also sent flyers to various high schools in the area and stressed the importance of ending up

in front of guidance counselors and science teachers, those that help high school students make the decision of what they would like to learn more about and pursue on their journey to college. Mike said, "I don't care if they go to Rochester, Valencia, UCF, Arizona. ... we all need the help."

Another way UCF's CREOL is working to reach prospective high school students is through a photonics summer camp for students that are interested in engineering, physics, or a related field. This year's 2024 Laser & Photonics Summer Camp will be taking place in July and includes lectures, interactive lessons, and lab work to give students a full

experience. Attending the camp gives students the opportunity to learn about the science of photonics and the kinds of career opportunities a major in photonics could lead to. It's a fun way for students to spend a week meeting new people, and to get an idea of if they would be interested in a photonics related degree. In fact, last year's camp was so successful that they have increased the offering to three one-week sessions. They also have scholarship options to be as inclusive as possible.

By fostering a culture of curiosity, inclusivity, and accessibility, we can cultivate a new generation of STEM enthusiasts who are not only aware of photonics but excited to embark on a journey of discovery within this dynamic field. Central Florida is working hard to provide this awareness and community through collaboration between schools and programs dedicated to students. "We've got an entire ecosystem. I think that's the story," said Mike.

A conversation heard frequently throughout the industry is that growing the younger generation in this field is crucial. Engaging students in STEM (Science, Technology, Engineering, and Mathematics) fields and growing awareness of the opportunities in photonics is exciting but presents unique challenges. Despite the growing demand for STEM professionals, many students remain unaware of the breadth and impact of these disciplines, including photonics.

To address this, educational initiatives must focus on demystifying STEM subjects and showing their real-world relevance and diverse career pathways within photonics—from research and development to entrepreneurship—to empower students to envision themselves as contributors to technological innovation.

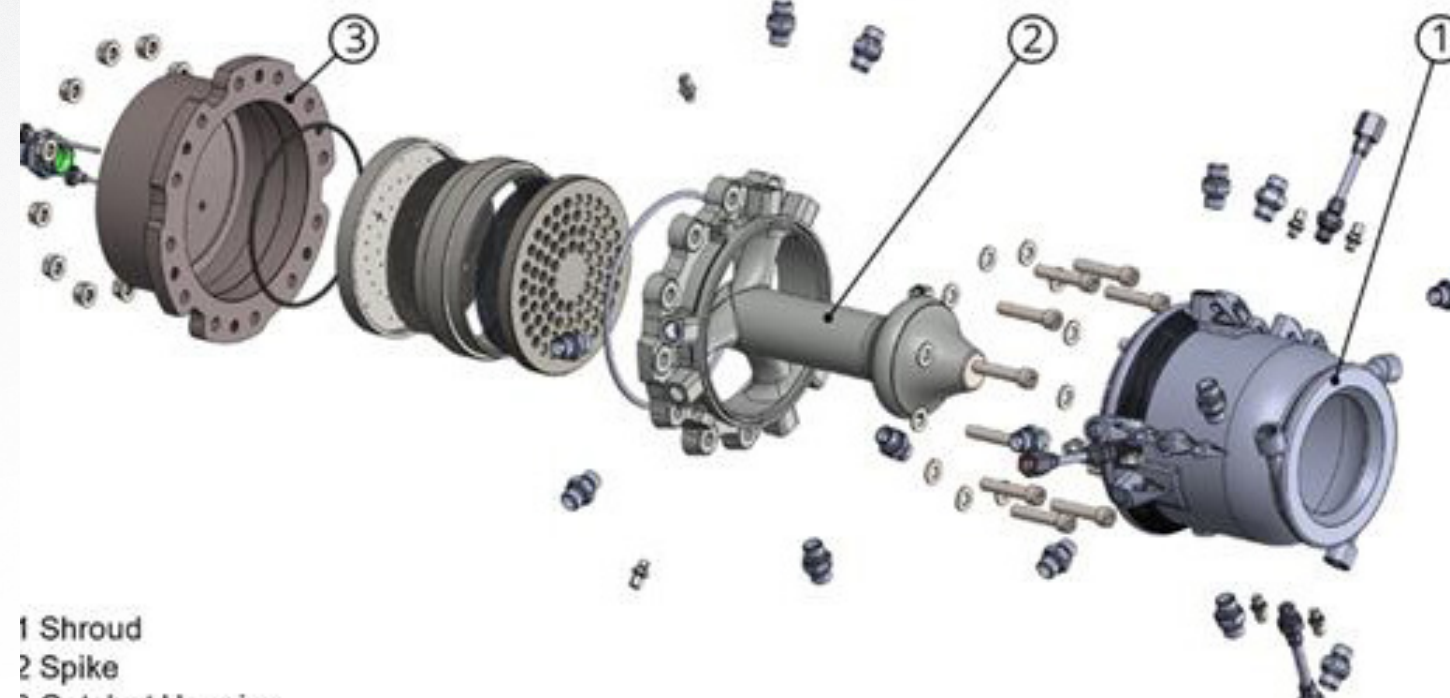
Mike said, "That's the problem, I think we are not doing a good job of getting the word out. Why? Because we don't have the resources. We have got to make sure that high school students know that this is a career potential. That's the challenge right there, is getting the word out to high school students and it's a bandwidth thing." Mike says they plan to attend a few major industry events this year, like the American School Counselors Association (ASCA) Annual Conference and the American



I recently had the opportunity to attend Industrial Affiliates Day at CREOL, The College of Optics & Photonics. The event was an exceptional opportunity to learn more about the college and current industry efforts. For anyone who wants to network with influencers and stay up-to-date on the latest industry happenings, I highly recommended attending next year!

- LIA General Manager Shaun Oleson

ASPIRER aerospike engine exploded view. Adapted with permission from Dorau et al., "Numerical analysis of an additively manufactured 6kN hydrogen peroxide/kerosene aerospike breadboard engine," in 8th Edition of the Space Propulsion Conference, Estoril, Portugal, 9–13 May 2022



PROCESS QUALIFICATION, ADDITIVE MANUFACTURING, AND POSTPROCESSING OF A HYDROGEN PEROXIDE/KEROSENE 6 KN AEROSPIKE BREADBOARD ENGINE

By: Alex Selbmann; Samira Gruber; Martin Propst; Tim Dorau; Robert Drexler; Filofteia-Laura Toma; Michael Mueller; Lukas Stepien; Elena Lopez; Christian Bach; Frank Brueckner; Christoph Leyens

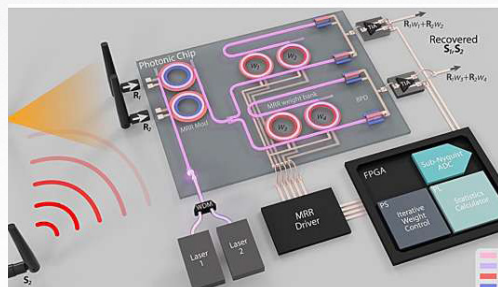
Abstract: This contribution addresses the complete process chain of an annular aerospike breadboard engine fabricated by laser powder bed fusion using the nickel-based superalloy Inconel® 718. In order to qualify the material and process for this high-temperature application, an extensive material characterization campaign including density and roughness measurements, as well as tensile tests at room temperature, 700, and 900 °C, was conducted. In addition, various geometric features such as triangles, ellipses, and circular shapes were generated to determine the maximum unsupported overhang angle and geometrical accuracy. The results were taken into account in the design maturation of the manifold and the cooling channels of the aerospike breadboard engine. Postprocessing included heat treatment to increase mechanical properties, milling, turning, and eroding of interfaces to fulfill the geometrical tolerances, thermal barrier coating of thermally stressed surfaces for better protection of thermal loads, and laser

welding of spike and shroud for the final assembly as well as quality assurance. This contribution goes beyond small density cubes and tensile samples and offers details on the iterations necessary for the successful printing of large complex shaped functional parts. The scientific question is how to verify the additive manufacturing process through tensile testing, simulation, and design iterations for complex geometries and reduce the number of failed prints.

Journal of Laser Applications 36, 012027 (2024);
<https://doi.org/10.2351/7.0001121>

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Take a look at the top 4 articles on LIA's social media!



TEAM DEVELOPS A REAL-TIME PHOTONIC PROCESSOR WITH PICOSECOND LATENCY FOR DYNAMIC RF INTERFERENCE

A team of scientists have introduced a system-on-chip that employs silicon photonics to tackle dynamic radio-frequency interference.

[Read more](#)

As part of a new feature each quarter, **Martin Barraclough** delves into various aspects of display laser use in the entertainment sector. In this edition, he talks about how he's improving Laser Safety Officer training programs and bringing harmonisation to standards in an increasingly globalised entertainment sector, combining theory and practical training with experts in a departure from training he found lacking on arrival to the sector.

First thing to know about me as you read on, is I am an entertainment guy. I'm in my 25th year in the industry, and I'm definitely 'institutionalised'. However, for the past 10 years, my career focus has been in safety. Through personal experience, colleague loss, and understanding of the inherently transient nature of the entertainment sector, I've developed a very keen sense on how to bridge the gap between technical standards, and occupational competency.

knowledge, experience, and that you cannot have that mix in a field such as display lasers without formal adequate training. Yet, the available resources for training were low in number, with operators having to take multiple near identical classes due to lack of harmonisation.

Having the benefit of working for a company like ER Productions, the biggest and the best in the display laser game, has given me an ecosystem to take on this competency problem.

The solutions were simple, too. Writing a course compliant with ANSI Z136, EN60825. Making it state-registered LSO compliant for places like NY, or Western Australia. Having a mix of laser safety experts, and technical display laser experts such as our leading product designers Lawrence Wright, or MD Marc Webber who was instrumental in writing industry standard guidance on laser shows, in one class, surprisingly, was ground-breaking. The biggest improvement of all? We wrote what turned out to be the only class in the world for display lasers that includes live practical training on lasers, laser measurements, and control measures. Assessed practically, in the class. Accredited and certified by the Institute of Occupational Safety & Health (the UK version of BCSP).

In addition, we are able to further enhance the harmonisation of these training standards, by delivering the same syllabus and quality of training. With ER Productions global offices we are able to offer



Learners study in the theoretical presentations and then are assessed in a closed book exam with only their own notes to refer to for IOSH accredited LSO training.

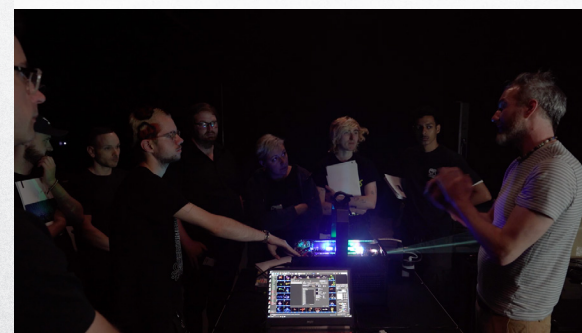
this course in Australia, KSA, UK, Las Vegas and the EU. Ensuring this rollout means that as shows travel around the world, they are operated to the same level of professionalism and safety.

Awareness levels of laser safety in groups such as radiation program inspectors, local authorities, venue managers, and other safety professionals, has also needed improvement. So here we run shorter awareness classes, pitched to the audience, but crucially, always including a live practical demonstration element with display lasers. No one has thought to do this before, and the feedback we receive is unanimously positive, and having the biggest and best equipment to show in action is unique to say the least.

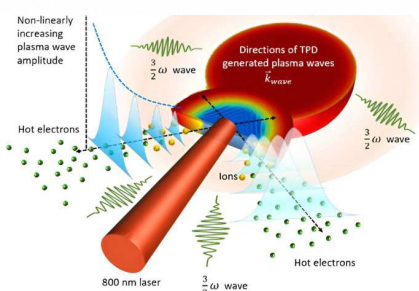
This might sound like a small thing to those in large industries where training is a given, but believe me, it's an achievement, and a great step forward to keeping the sector safe for audiences to enjoy our work.

Here is where my entry to the display laser sector has developed real value. I am eminently conscious that most readers of this piece come from industries, sectors and backgrounds that would be horrified to hear we regularly have unterminated laser beams shooting in the general direction of thousands of people. We can thank the trailblazers from the 1960s onwards for this trend, but nonetheless it's an accepted part of entertainment shows now.

However, what I have found, is that competency levels had room for improvement. I would consider 'competency' as a mix of skills,



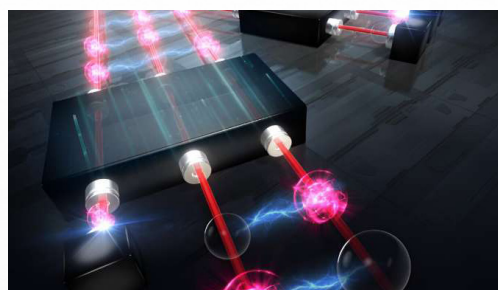
Learners undertake a practical learning session with expert trainer Andrew Turner.



RESEARCHERS GENERATE SUPER-FAST ELECTRONS WITH TABLE-TOP LASER SYSTEMS

In an exciting leap, scientists have designed an elegant solution to successfully generate MeV (106 eV) temperature electrons at a mere fraction (100 times smaller) of the laser intensity previously thought necessary.

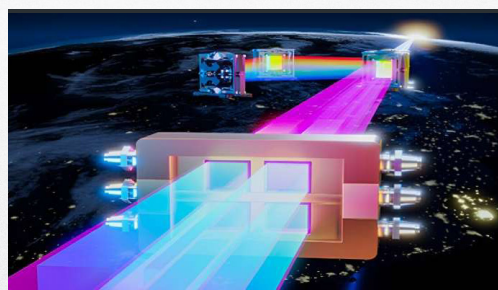
[Read more](#)



LET THERE BE LIGHT: MANY PHOTONS ARE BETTER THAN ONE FOR ADVANCING QUANTUM TECHNOLOGIES

A team of researchers has theoretically and experimentally confirmed the unique advantages of non-Fock states—or iNFS—complex quantum states requiring more than a single photon source and linear optical elements.

[Read more](#)



BREAKING THE 10-PETAWATT LIMIT WITH A NEW LASER AMPLIFICATION

Researchers used a method that involves coherently tiling multiple titanium:sapphire crystals together to break through the current 10-petawatt limit on the titanium:sapphire ultra-intense ultrashort lasers.

[Read more](#)



In other non-accredited learning sessions, non-laser professionals are invited to our premises to learn about the technology, methods, and control measures required for safe laser display shows

Writing this article now, is also part of those small steps of continuous improvement for the sector. I'm lucky enough to have the support from ER Productions to engage and interact with the wider laser industry. We know we are the crazy cool cousins of the laser community, but raising and maintaining standards over time is our goal. I look forward to future editions, featuring the work of LSOs across the US and advancements in our technologies.

After just a couple of years of working with these new training resources, we are seeing the difference. Not just at ER Productions who strive to be the best in all areas, but the wider industry. We will train anyone without bias, as the ongoing success, and levels of safety in the display laser sector, is of benefit to us all.



About the Author

Martin serves as Safety Director at ER Productions. He is a leading safety specialist, and a regular contributor at industry level. He has launched a series of courses to raise industry standards and harmonise working practices around the world in the field of display lasers.



US Department of Labor issues final rule to clarify rights to employee representation during OSHA inspections

WASHINGTON, DC – The U.S. Department of Labor today published a final rule clarifying the rights of employees to authorize a representative to accompany an Occupational Safety and Health Administration compliance officer during an inspection of their workplace.

The Occupational Safety and Health Act gives the employer and employees the right to authorize a representative to accompany OSHA officials during a workplace inspection. The final rule clarifies that, consistent with the law, workers may authorize another employee to serve as their representative or select a non-employee. For a non-employee representative to accompany the compliance officer in a workplace, they must be reasonably necessary to conduct an effective and thorough inspection.

Consistent with OSHA's historic practice, the rule clarifies that a non-employee representative may be reasonably necessary based upon skills, knowledge or experience. This experience may include knowledge or experience with hazards or conditions in the workplace or similar workplaces, or

language or communication skills to ensure an effective and thorough inspection. These revisions better align OSHA's regulation with the OSH Act and enable the agency to conduct more effective inspections. OSHA regulations require no specific qualifications for employer representatives or for employee representatives who are employed by the employer.

The rule is in part a response to a [2017 court decision ruling](#) that the agency's existing regulation, 29 CFR 1903.8(c), only permitted employees of the employer to be authorized as representatives. However, the court acknowledged that the OSH Act does not limit who can serve as an employee representative and that OSHA's historic practice was a "persuasive and valid construction" of the OSH Act. Today's final rule is the culmination of notice and comment rulemaking that clarifies OSHA's inspection regulation and aligns with OSHA's longstanding construction of the act.

"Worker involvement in the inspection process is essential for thorough and effective inspections and making workplaces safer," said Assistant Secretary for Occupational

Safety and Health Doug Parker. "The Occupational Safety and Health Act gives employers and employees equal opportunity for choosing representation during the OSHA inspection process, and this rule returns us to the fair, balanced approach Congress intended."

The rule is effective on May 31, 2024.

[Learn more about OSHA.](#)

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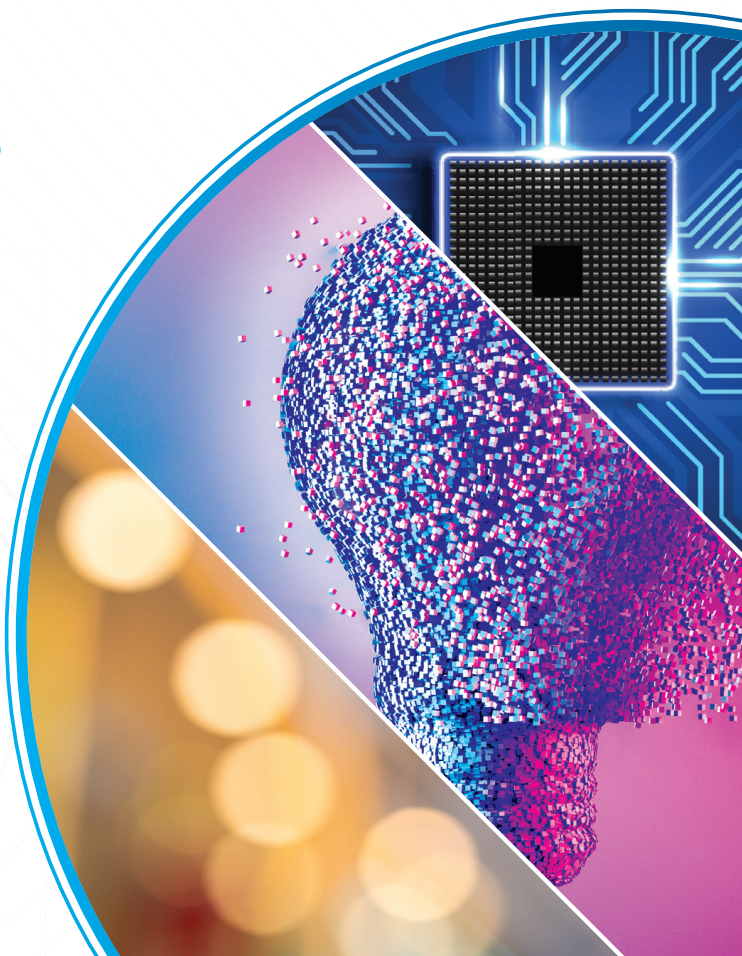


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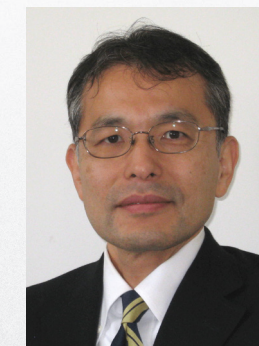
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NEWSLETTER

Volume 4 • Issue 1



Recently Certified

Scheryl Chinn - CLSO
University of New Mexico

Jeffrey Connell - CLSO
Apple, Inc.

Erin Poitras - CLSO
BAE Systems

Daniel Gottreich - CLSO
The Standards Institute of Israel

Kelly Earl - CMLSO
Olympus Canada Inc.

Omar Bobes - CMLSO
Hamad Medical Corporation

Delphine Darios - CLSO
KAUST

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Website: www.lasersafety.org

2024 Fee Adjustments:

Beginning in 2024, an adjustment was made to the BLS renewal and exam fees in order to offset the effects of inflation on operating costs, as these fees have not been increased since 2016.

The 2024 fee schedule is as follows:

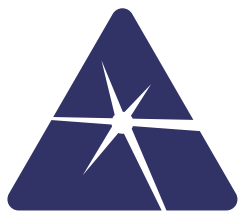
- **Renewal Fee***: \$165 (Due the third year of certification with CM worksheet)
- **CMLSO Exam Fee**: \$225
- **CLSO Exam Fee**: \$325
- **Application Fee**: \$55
- **Late Fee***: \$55
- **Rescheduling Fee**: \$55

* Note that those whose certification cycles expire December 31, 2023 who renew during the grace period will pay the 2023 renewal fee. Those who expire December 31, 2024 will be subject to the new renewal fee. If you have questions, please do not hesitate to contact our office.

Write for BLS!

Looking for a way to earn BLS CM points for free? BLS is inviting CLSOs and CMLSOs to share laser safety knowledge with the laser community! Published article submissions are worth 0.5 BLS Certification Maintenance (CM) points in Category 3. For more information on guidelines and regulations, email us at bls@lasersafety.org.

About BLS



The mission of the Board of Laser Safety (BLS) is to provide a means for the recognition of laser safety professionals through certification and to promote competency in the field of laser safety. BLS certification will enhance the credibility of a designated Laser Safety Officer, and demonstrate that individuals serving in the field have agreed to adhere to high standards of safety and professional practice. For the employer, having a CLSO or CMLSO on staff demonstrates due-diligence and helps to ensure legitimacy and adequacy of the laser safety program, validating the company's dedication to a safe working environment for all employees.