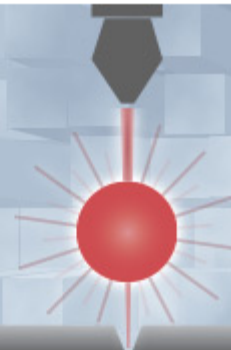


INDUSTRIAL PHOTONICS LASERS

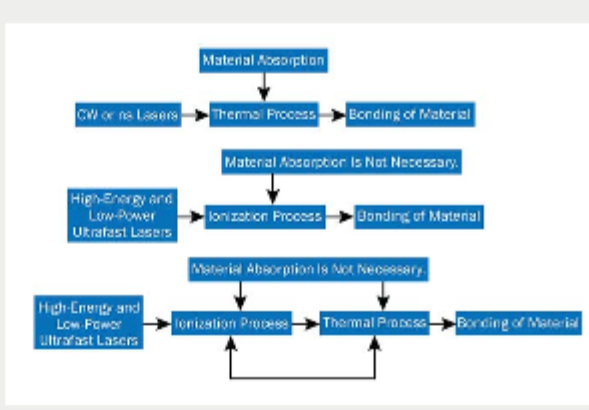


A quarterly newsletter focused on the latest advancements in and applications for industrial lasers - from materials processing to metrology.

Industrial Laser News

Ultrafast Fiber Laser Opens Doors for Additive Manufacturing

Femtosecond lasers have long been a workhorse in subtractive manufacturing, prized for their unique ability to athermally ablate materials. They are commonly used in surface structuring, drilling and thin-film scribing. However, few thought that a femtosecond laser could be used in additive manufacturing. By taking advantage of instantaneous high-temperature plasma generation, a recently developed femtosecond fiber laser can melt high-temperature metals such as tungsten.



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Laser Paint Removal Takes Off in Aerospace

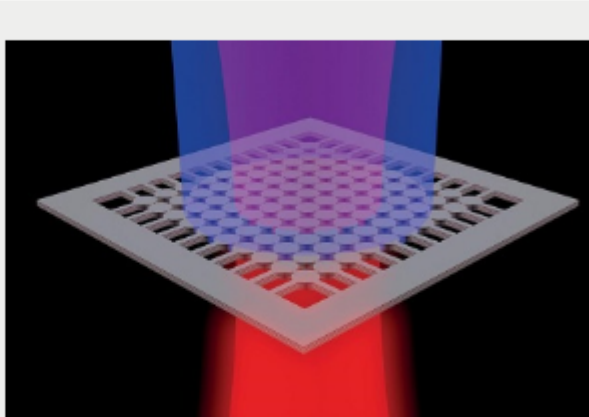
At 52 feet tall, over 100,000 pounds and with a reach of 85 feet, LR Systems' laser ablation mobile robot is one of the largest — if not the largest — mobile robots in the world. This summer, the company, based in the Netherlands, plans to install a laser coating removal robot (LCR) at the maintenance facility of a yet-to-be-announced large airline. The LCR, which features a newly designed 20-kW CO₂ laser, will be the first full-aircraft, robotic laser stripping solution to be deployed by a commercial air carrier.



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Novel BIC Laser Holds Promise for Optical Communications

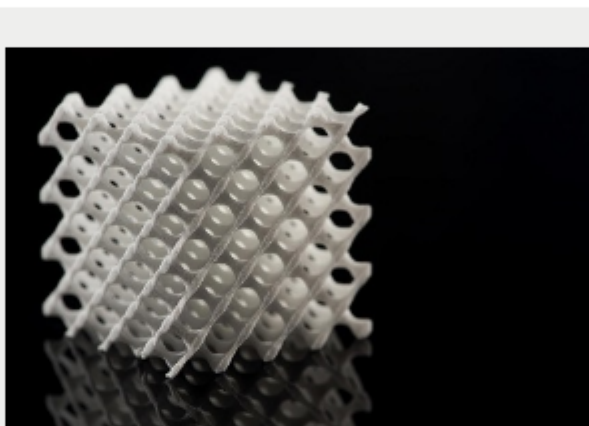
Researchers at the University of California San Diego have developed a laser based on an unconventional wave physics phenomenon known as bound states in the continuum — BIC. The new BIC lasers have the potential to be developed as high-power lasers for industrial and defense applications. The technology could also revolutionize the development of surface lasers for communications and computing applications.



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Selective Laser Melting Produces Safer Automotive Components

Using selective laser melting (SLM), engineers are creating lightweight automotive components that boost vehicle fuel efficiency, cut noise and lessen CO₂ emissions. Engineers at The University of Nottingham in England have developed the new additive manufacturing process as part of the Functional Lattices for Automotive Components (FLAC) project; the aim is to achieve significant weight reductions in new vehicle components.



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Physicists Force Optical Fiber Laser to Generate Ultrashort High-Energy Pulses

An innovative fiber laser that generates ultrashort high-energy pulses in an optical fiber could soon shorten the time of processing materials in industrial laser machines. Warsaw optical scientists at the Laser Centre of the Institute of Physical Chemistry of the Polish Academy of Sciences (IPC PAS) and the Faculty of Physics of the University of Warsaw have "forced" an optical fiber laser to generate ultrashort high-energy pulses.



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Ionbond Wins Innovate UK Project for Friction Stir Welding Coatings

Coating developer Ionbond UK Ltd., in partnership with the Welding Institute Ltd. (TWI) and the Materials and Engineering Research Institute (MERI) at Sheffield Hallam University, has won a collaborative research project supported by Innovate UK to develop coatings for friction stir welding (FSW) tools. The project will investigate the potential to increase the performance of FSW tools by using advanced coatings deposited by Ionbond's physical, chemical and plasma-assisted chemical vapor deposition processes.

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SPI Lasers Joins the Welding Institute

Fiber laser manufacturer SPI Lasers UK Ltd. has become a member of the Welding Institute (TWI) to support the development and promotion of its fiber lasers for industrial welding applications. "Access to TWI's joining expertise will greatly enhance our ability to develop new laser sources to tackle the challenging joining requirements of today's industrial applications," said Dr. Jack Gabzdyl, vice president of SPI's pulsed laser division.

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Webinars

Transition Mode Reactive Sputtering Using PEM

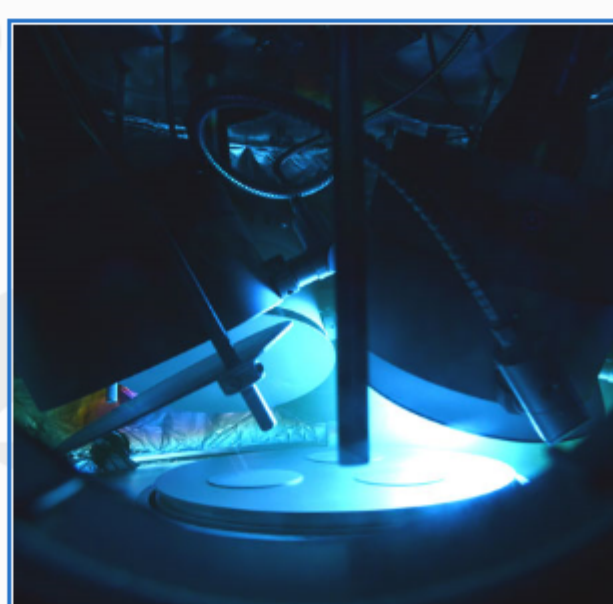
Wed, Mar 15, 2017 1:00 PM - 2:00 PM EDT

This webinar will discuss the architecture and operation of a Plasma Emission Monitoring (PEM) system integrated into a Denton Vacuum (DV) sputtering chamber, with confocal cathode configuration (DV-PEM). It will cover everything you need to know about pulsed DC reactive sputtering with PEM and will provide you with a thorough understanding of how Denton Vacuum provides fully integrated PEM with its thin film deposition system.

Who should attend: engineers, scientists, CTOs and others involved in product or materials development.

About the presenter: George Papasoulotis, Ph.D., is the CTO of Denton Vacuum. He has published over 30 reference articles and holds over 50 U.S. patents in the areas of thin film deposition and plasma processing for semiconductor, optical and structural applications.

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