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Winners of Prism Awards for innovation named at SPIE Photonics West

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SAN FRANCISCO, California, USA -- Winners of the 2010 Prism Awards for photonics innovation were announced 26 January at a gala banquet in San Francisco during SPIE Photonics West. In a room full of industry leaders, nine companies were honored in separate categories for their outstanding achievements.

The Prism Awards for Photonics Innovation are sponsored by Photonics Media and SPIE to recognize photonic products that challenge conventional ideas, solve problems, and improve life through the generation and harnessing of light.

A panel of independent industry experts judged nearly 100 entries, selecting the winners from among 26 finalists. See the full list of finalists in the January 2011 issue of *Photonics Spectra* magazine.

Winners and categories are:

- EKSPLA (Scientific Lasers), for its NT200 series nanosecond tunable wavelength lasers, the first nanosecond lasers that can offer tunability from the ultraviolet (210 nm) to the infrared (2600 nm) without gaps in the tuning range and operating at a computer-controlled, hands-free pulse repetition rate of 1 kHz. Experiments requiring such a widely tunable monochromatic light source were not possible before now because the low laser repetition rate made data acquisition too slow.
- IPG Photonics (Industrial Lasers), for its long-pulse fiber lasers YLR-150/1500-QCW-AC. This new type of laser -- the long-pulse, high-pulse-energy fiber laser -- replaces the aging population of inefficient flashlamp-pumped solid-state lasers with much smaller and longer-lasting diode-pumped devices. The proprietary pump diodes used in these lasers can be pulsed at 10 times their average power. In a quasi-continuous regime, they can pump an active fiber to produce 15 J from a 150-W fiber laser.
- General Electric (Detectors, Sensing, Imaging and Cameras), for its TrueSense personal water analytics, a stand-alone system based on multicolor LEDs and a 44-cell sampler platform for wavelength-multiplexed quantitative and highly selective chemical analysis of industrial water. The field-deployable system performs eight water quality tests from a single 3-ml sample in minutes, decreasing previous sample times by an estimated 80 percent. It minimizes the need to maintain an inventory of reagent chemicals and equipment for testing and considerably cuts testing costs, and employs simplified, easy-to-perform testing procedures.
- Edmund Optics (Optics and Optical Components), for its TechSpec plastic hybrid aspheric lenses, low-cost optical components that are free of both spherical and chromatic aberration, providing optical designers with a unique single-element solution for achieving diffraction-limited focusing performance at high numerical apertures with broadband light sources. While this concept has been well-established for years in the infrared, these are the first hybrid aspheres designed to work in the visible spectrum.
- JenLab GmbH (Life Sciences and Biophotonics), for its MPTflex. A clinical multiphoton tomograph for skin imaging, the MPTflex overcomes the poor resolution of skin imaging methods such as ultrasound, OCT and reflection. By using two-photon technology, the system's in vivo high-resolution skin

imaging provides marker-free optical biopsies. The novel tomograph is a compact system with a flexible scan head that includes two detectors for simultaneous measurement of autofluorescence and the second-harmonic generation.

- Block Engineering (Defense and Security), for its LaserScan QCL-based spectrometer -- a handheld mid-IR quantum cascade laser spectrometer that analyzes surfaces from a standoff of inches to feet. This product approaches spectroscopy from a completely different perspective, where no broadband emitting source or Michelson interferometer is required. Instead, the mid-IR laser source can be widely (600 cm⁻¹) and rapidly tuned to create a spectrum. The unit's extremely fast electronics allow the detector to essentially correlate the light that it collects with the specific wavelength of the laser as it rapidly and continuously tunes across the range.

- Energetiq Technology Inc. (Other Light Sources), for its EQ-99 LDLS™ laser-driven light source, delivering broadband spectral output from 170 nm in the deep-UV through the visible spectrum and into the infrared for advanced spectroscopic and imaging applications. The EQ-99 LDLS provides more than 10 times the brightness, 10 times the lifetime and a broader bandwidth than xenon and deuterium lamps, changing the paradigm in broadband illumination and enabling a new generation of smaller, faster, more precise spectroscopy or imaging instruments not possible with these traditional lamps.

- Lumen Dynamics Group, formerly EXFO Life Sciences & Industrial Div. (Test, Measurement, Metrology), for its X-Cite XP750 sensor, uniquely shaped like a microscope slide, so that it fits easily in standard stage clips to hold it in place during use. The sensor is thin enough (9 mm) to fit under the objectives on an upright microscope without the stage or condenser having to be removed. Other devices on the market were designed for other applications and are either long "wand" style types that are awkward to keep in place on the microscope stage, or thick "discs" that do not fit under the objectives on an upright microscope.

- Photonis USA (Information and Communication), for its optical receiver module. Before the creation of this receiver, one had to choose between optical receivers using solid-state designs with high speeds but very small active areas, or photomultiplier designs with small output currents. This module bridges the gap by having a large collection area -- an active input diameter of 12 mm - while also maintaining a data speed of 2 GHz. The reliability of signal current in the blue-green wavelength range improves without significant bit error rates, enabling through-the-air or underwater communications in environmental circumstances that are less than ideal. The receiver's low power requirements mean that it can be used in unmanned locations.

The awards were presented by Stuart Schoenmann (CVI Melles Griot), Marita Paasch (SCHOTT), Bill Shiner (IPG Photonics), Ken Kaufmann (Hamamatsu), Ronald Driggers (Naval Research Lab), Robert Edmund (Edmund Optics), Milton Chang (Incubic Management), Michael Mertin (JENOPTIK), and David Hardwick (IMRA America).

[SPIE](#), the international society for optics and photonics, was founded in 1955 to advance light-based technologies. Serving more than 180,000 constituents from 168 countries, the Society advances emerging technologies through interdisciplinary information exchange, continuing education, publications, patent precedent and career and professional growth. SPIE annually organizes and sponsors approximately 25 major technical forums, exhibitions and education programs in North America, Europe, Asia and the South Pacific, and supports scholarships, grants and other education programs around the world.

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