



CLEO/IQEC 2009 meets in Baltimore

The 29th Conference on Lasers and Electro-Optics and the 27th International Quantum Electronics Conference are set to take place Sunday–Friday, 31 May–5 June 2009, at the Baltimore Convention Center in Baltimore, Maryland. Every five years IQEC replaces the Quantum Electronics and Laser Science, or QELS, Conference. Sponsored by the American Physical Society's laser science division, the IEEE Photonics (formerly Lasers and Electro-Optics) Society, and the Optical Society of America, the annual pairing of conferences presents the latest basic and applied research in laser science, electro-optics, and quantum electronics.

The CLEO/IQEC 2009 coauthors expect to host some 1200 technical presentations, more than 100 invited speakers, 2 plenary sessions, 7 special symposia, 39 short courses, 21 tutorials, and 3 poster sessions. A list of session topics and invited speakers is on page 53.

The two plenary sessions, on Monday evening, 1 June, 6:00–7:30pm, and on Wednesday morning, 3 June, 8:00–10:30am, will feature three speakers. Edward Moses, from Lawrence Livermore National Laboratory, will speak on the National Ignition Facility and the new scientific opportunities in high-energy-density science. Federico Capasso, of Harvard University, will trace the history of and recent advances in quantum cascade lasers. Alain Aspect, from France's Institut d'Optique, will discuss Bell's theorem, the new field of quantum information, and entanglement between qubits.

A joint CLEO/IQEC symposium will honor the work of Daniel Chemla (1940–2008), who was a leader in the area of condensed-matter optoelectronics. Besides sharing personal reminiscences of Chemla, the presenting researchers, all of whom are in fields impacted by his work, will give a historical perspective of significant developments and the current state of research. Other symposia will cover nanophotonics and metamaterials, slow/fast light and its applications, frequency combs, optofluidics, and high-power solid-state lasers.

Thirty-nine short courses are being offered Sunday through Tuesday on subjects as varied as semiconductor lasers, organic and inorganic LEDs, and fiber amplifiers and devices. New courses will be presented on the following topics: single-photon detection, super-resolution optical microscopy, fiber-based parametric devices, green photonics, optical clocks, the art of modeling optical systems, and intellectual property and patents in academia.

PhAST

Once again CLEO/IQEC is being held in conjunction with the Conference on Photonic Applications, Systems, and Technologies, which will run Tuesday–Thursday, 2–4 June.

For 2009 the PhAST program will be offered in two parts. New this year is the PhAST Applications track, which complements the CLEO/IQEC technical program by focusing on technology and applied research. Programs will in-

clude applications of passive and active optical remote sensing, organic LED applications, laser displays, and government-sponsored laser and electro-optics initiatives. The PhAST Market Focus, which covers business and commercialized applications, will feature sessions on photovoltaics, diagnostics and therapy in biophotonics, and photonics for security and the environment. The PhAST Market Focus will be located on the PhotonXpo show floor.

PhotonXpo, where some 350 exhibiting companies display their products, runs Tuesday–Thursday. This CLEO exhibit presents the latest technologies and products through on-floor programming and presentations. The annual job fair runs Tuesday and Wednesday, 10:00am–5:00pm, also on the PhotonXpo show floor, and includes a free career workshop on Wednesday from 12:30 to 1:30pm.

The fifth annual PhAST/*Laser Focus World* Innovation Awards presentation will take place Monday evening at 7:00pm. The program allows conference participants to preview future technologies and the latest optics and photonics applications.

At the PhAST power lunch, scheduled for Tuesday, 12:30–1:30pm, participants can meet industry leaders and discuss various strategies for surviving the current economic downturn. A conference reception will be held Tuesday evening from 6:30 to 8:00pm.

For the most up-to-date information, visit <http://www.cleoconference.org/>.

A vertical photograph of a modern building at night, illuminated with blue and white lights, reflecting in a body of water. The building has a distinctive triangular roof structure. The reflection is clearly visible in the water below.

Laser processing of materials: Fundamentals and applications. *Herman (T), Kazansky, Nolte*

Solid-state, liquid, and gas lasers. *Novo-Gradac (T), Setzler, Norreys*

Semiconductor lasers. *Sugawara (T), Wang, Chow, Belenky, Sakaguchi, Huang*

Applications of nonlinear optics. *Stegeman (T), Moss, Ito, Andegekko, Combr  , Turner-Foster*

Terahertz technologies and applications. *Grischkowsky (T), Yasui, Zhong, Bonn, Chassagneux*

Optical materials, fabrication, and characterization. *Mashanovich (T), Schubert, Cao, Kondo, Petrov*

Ultrafast optics, optoelectronics, and applications. *Squier, Fainman, Centurion, Heebner*

Components, integration, interconnects, and signal processing. *Winzer (T), Stojanovic, Rusch, Chang-Hasnain*

Medical and biological applications. *de Boer (T), Ntziachristos, So*

Fiber amplifiers, lasers, and devices. *Skibina, Knight, Chen, Shirakawa, Sch  lzen, Monro*

Lightwave communications and networks. *Gisin (T), Mizuochi, Richardson*

Active optical sensing. *Settersten (T), Newbury, Bachalo, Allen, Wolf*

Optical metrology. *Polzik (T), Li, Kimble*

Visible and ultraviolet LEDs and OLEDs. *Speck (T), Hirayama, Krames*

Micro- and nanophotonic devices. *Dal Negro (T), Takesue, Van Thourhout, Hill, Lin, Nomura, Assefa*

Quantum optics of atoms, molecules, and solids.
Nori (T), Lundblad, Gerhardt, Herskind, Hayes, Häffner, Schliesser, Park

Quantum science, engineering, and technology.
Grangier (T), Aoki, Silberhorn, DiCarlo, Sasaki, Dixon, Stevens

Fundamentals of metamaterials and periodic and random media. *Sheng (T), Assanto, Türeci, Kociak*

Optical interactions with condensed matter and ultrafast phenomena. *Binder (T), Kuehn, Höfer, Anappara*

Nonlinear optics and novel phenomena. *Vahala (T), Brueck, Chen*

Nano-optics and plasmonics. *Stockman (T), McCutcheon, Kawata, Lettow*

UV LEDs for health and safety. *Gaska, Knight, Britz, Hairston*
Applications of solid-state lighting. *Hunter, Schmidt, Crawford, Syrkin*
Defense applications of lasers and electro-optics technology. *Swim, Watson, Seeley, Post*
Lasers and optics for astronomy and space-based surveying. *Moore, Dekany, Foltz, Madden*
Visible displays and projectors. *Forsythe, Williams, Hirano, Joerber*
Optical imaging. *Zhang, Earhart, Buck, Huber*

High-field physics and high-intensity lasers.
Bucksbaum (T), Schwoerer, Pfeiffer,
Yamanouchi

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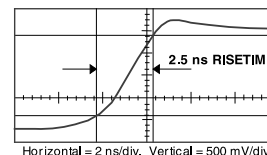
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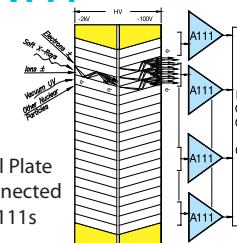
A250



FET can be cooled
Noise: $<100 \text{ e}^- \text{ RMS (Room Temp.)}$
 $<20 \text{ e}^- \text{ RMS (Cooled FET)}$
Gain-Bandwidth $f_T > 1.5 \text{ GHz}$
Power: 19 mW typical
Slew rate: $>475 \text{ V/us}$



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A conceptual illustration where a silver metal mesh strainer, featuring an orange square with a white RSS feed symbol on its handle, is shown catching a large quantity of black text. The text consists of numerous words and phrases associated with cancer biology and treatment, such as "CELLS", "PROTEIN", "DNA", "THERAPY", "INTERACTIONS", "MAGNETS", "MECHANISMS", "STRUCTURE", "FUNCTION", "PHYSICISTS", "CANDIDATES", "TREATMENT", "DATA", "ANALYSIS", "MODELING", "SIMULATION", "COMPUTATION", "BIOLOGY", "CHEMISTRY", "MEDICINE", "SCIENCE", "RESEARCH", "DEVELOPMENT", "APPLICATION", "IMPLEMENTATION", "EVALUATION", "ASSESSMENT", "MONITORING", "CONTROL", "OPTIMIZATION", "IMPROVEMENT", "ENHANCEMENT", "REFinement", "PERFORMANCE", "EFFICIENCY", "EFFECTIVENESS", "SAFETY", "TOXICITY", "SIDE EFFECTS", "QUALITY OF LIFE", "PATIENT CARE", "CLINICAL TRIALS", "REGULATORY AFFAIRS", "INDUSTRY PARTNERSHIP", "ACADEMIC RESEARCH", "TRANSLATIONAL RESEARCH", "BIOMARKERS", "DIAGNOSTICS", "THERAPEUTICS", "PREVENTION", "SCREENING", "SURVEILLANCE", "PROGNOSIS", "PALLIATIVE CARE", "END-OF-LIFE CARE", "PSYCHOSOCIAL SUPPORT", "GENETIC TESTING", "IMMUNOTHERAPY", "TARGETED THERAPY", "RADIATION THERAPY", "CHEMOTHERAPY", "HORMONAL THERAPY", "STEM CELL TRANSPLANT", "CARBOXYMETHYL BETA-D-GALACTOPYRANOSIDE", "HYDROLYZABLE POLYMER", "POLY(ETHYLENE TEREPHTHALATE)", "POLY(METHACRYLIC ACID)", "POLY(VINYL ALCOHOL)", "POLY(DIMETHYLAMINO METHACRYLATE)", "POLY(ETHYLENE GLYCOL)", "POLY(LACTIDE)", "POLY(D,L LACTIDE)", "POLY(GLYCOLIDE)", "POLY(CAPROLACTONE)", "POLY(BIPHENYLENE VINYLENE)", "POLY(PHENYLENE VINYLENE)", "POLY(THIOPHENE VINYLENE)", "POLY(FURAN VINYLENE)", "POLY(PYRROLE VINYLENE)", "POLY(IMIDAZOLE VINYLENE)", "POLY(OXADIAZOLES)", "POLY(TRIAZOLES)", "POLY(TETRAZOLES)", "POLY(PENTAZOLES)", "POLY(SIX-MEMBERED HETEROCYCLES)", "POLY(NATURAL POLYMERS)", "POLY(SYNTHETIC POLYMERS)", "POLY(BLOCK COPOLYMERS)", "POLY(GRAFT COPOLYMERS)", "POLY(HYBRID COPOLYMERS)", "POLY(dendritic polymers)", "POLY(star polymers)", "POLY(hyperbranched polymers)", "POLY(nanoparticles)", "POLY(micelles)", "POLY(liposomes)", "POLY(viruses)", "POLY(exosomes)", "POLY(apoptosomes)", "POLY(membranes)", "POLY(cytoskeleton)", 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