

More than 7000 researchers will converge on San Francisco for the 20th Conference on Lasers and Electro-Optics (CLEO) and the 9th Quantum Electronics and Laser Science Conference (QELS), which will be held jointly at the Moscone Convention Center 7–12 May.

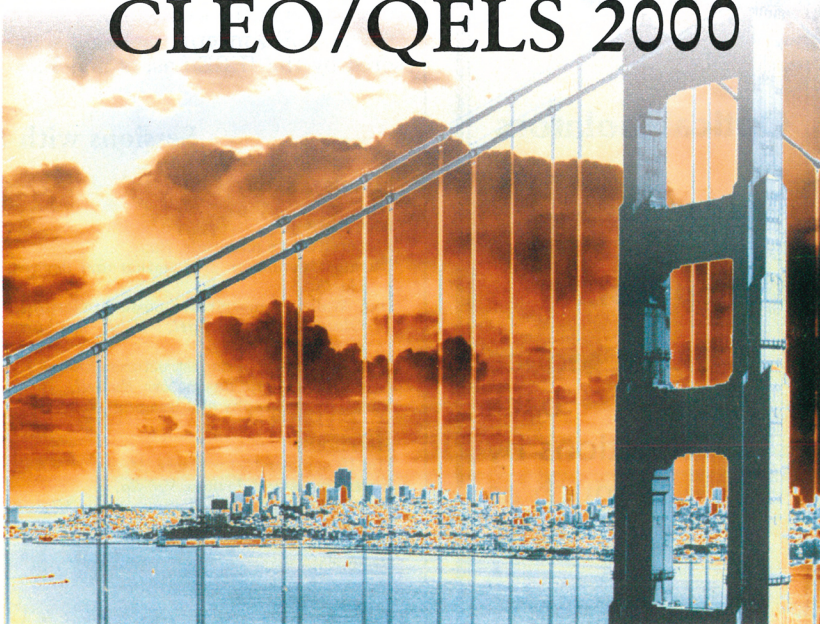
Some of the highlights at this year's CLEO sessions will include the use of optics in biomedical research and applications, the trend toward smaller scale high-field laser experiments, and the increasing capacity demands of communications systems. Some of the topics that will be featured at the QELS sessions include high-order correlation effects in condensed matter, advances in microcavity applications of photonics and gap structures, spectroscopy of semiconductor quantum dots, and quantum information and slow light. The technical program will be held in ten parallel sessions scheduled for Monday through Friday at the Moscone Convention Center. Poster sessions will be held Tuesday through Thursday from 1 to 2:30 pm.

Two special memorial symposia will be held on Monday, 8 May. The first, scheduled from 8 am to noon, will honor the late Dan Walls, who made significant contributions to the field of theoretical quantum optics. Walls, a professor of physics at the University of Auckland in New Zealand, died last year after a long battle with cancer.

Arthur Schawlow will be commemorated at the second memorial symposium, which will be held from 6 to 8 pm. Schawlow, who shared the Nobel Prize in Physics in 1981 for his contributions to the development of laser spectroscopy, died of leukemia in 1999 (see obituary, *PHYSICS TODAY*, December 1999, page 75).

The joint CLEO/QELS plenary and awards session will be held on Tuesday, 9 May from 8 to 10 am. The Optical Society of America will present the Charles Hard Townes Award to **Richard C. Brewer**. The award honors Brewer for his "outstanding contributions to quantum optics, characterized by originality and diversity, involving the interplay of theory and elegant experiments to elucidate fundamental problems of coherent optical transients, using atoms, molecules, solids, and trapped ions." Brewer is a Fellow Emeritus at IBM's Almaden Research Center in San Jose, California. Also, the Lasers and Electro-Optics Society of the Institute of Electrical and Electronics Engineers (IEEE/LEOS) will present the Quantum Electronics Award to **Yoshihisa**

SAN FRANCISCO IS THE SITE OF CLEO/QELS 2000



Yamamoto for the "invention and first demonstration of the technique for producing amplitude squeezed light semiconductors." Yamamoto is a professor of applied physics and electrical engineering at Stanford University.

At this year's plenary session, Daniel Kleppner, the Lester Wolfe Professor of Physics at MIT, will give a talk entitled "Ultracold Hydrogen—From BEC to QED"; Linn Mollenauer, a distinguished member of the technical staff at Bell Laboratories, Lucent Technologies, is scheduled to speak on "Advanced Dispersion Maps for Dense WDM"; and Steve Joiner, manager of the network architecture and technology department at Agilent Laboratories in Palo Alto, California, will discuss "Communications Links: Where Will VCSELs Contribute?"

The Lasers and Electro-Optics Applications Program (LEAP) sessions, which focus on commercial and applied aspects of optics, will be held on Wednesday, 10 May. Business strategy, startup, management techniques, and the current business environment for optics and photonics will be the focus of the morning session. Intellectual property issues will be featured in the afternoon.

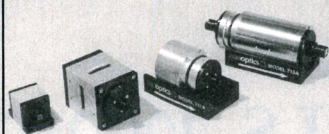
Also on Wednesday, a reception for all conference attendees will be held

from 7 to 8:30 pm in the Yerba Buena Ballroom at the San Francisco Marriott Hotel.

Thirteen tutorials have been scheduled for Monday through Thursday, with presentations on photonic band gap materials, ultrafast technology and applications, polarization mode dispersion in optical communication systems, commercial applications of VCSELs, correlation effects in the optical properties of semiconductors, photonic dots to photonic crystals, electromagnetically induced transparency in atoms and molecules, transport network fundamentals, parametric generators and amplifiers of ultrashort light pulses, widely-tunable diode lasers for WDM applications, quantum entanglements, the application-oriented side of optical interconnections, and spatial solitons.

Forty-one short courses will be offered, including three courses on photonics basics for engineers and technicians (PBET). Two of the PBET courses will be held at the Moscone Convention Center on Sunday, 7 May. The remaining thirty-nine short courses will be held at the San Francisco Marriott Hotel on Monday, 8 May in three separate three-hour sessions.

Products and services from over 300 companies in the laser and electro-optics industries will be on display



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at the equipment exhibit. This exhibit will be open from 10:30 am to 5:00 pm on Tuesday and from 9:30 am to 5:00 pm on Wednesday and Thursday. An exhibits-only time period from 10:30 am to noon on Tuesday will allow conference attendees an opportunity to visit the exhibition.

The CLEO meeting is being sponsored by the IEEE/Lasers and Elec-

tro-Optics Society (LEOS) and the Optical Society of America (OSA), in cooperation with the quantum electronics and optics division of the European Physical Society and the Japanese Quantum Electronics Joint Group. QELS is sponsored by the American Physical Society's division of laser science, IEEE/LEOS and OSA.

Sessions with Invited Speakers

Monday, 8 May

morning

Photorefractive materials. *Buse.*
Ultrafast nonlinear propagation and devices. *Gaeta.*
Dan Walls memorial symposium. *Gardiner, Glauber, Carmichael, Reid, Milburn, Kimble, Zoller.*
Near-field optics of nanostructures. *Knorr.*
Photonic bandgap: Resonators. *Russell.*
Adaptive holography and imaging. *Nolte.*

afternoon

Mid-IR semiconductor lasers. *Meyer.*
Novel effects and devices. *Vahala.*
Nonclassical sources and applications. *Mlynek.*
Photonic crystal waveguides. *Benisty.*
Single quantum dots. *Zrenner.*
Photo-EMF detection. *Jin.*
Laser materials processing. *Shinn.*
Novel quantum systems. *Raizen.*
Photonic crystal emitters. *Vuckovic.*
Dynamics of quantum dots. *Klimov.*
Optical signal regeneration. *Leclerc.*
Arthur Schawlow memorial symposium. *Townes, Stoicheff, Mollenauer, Hansch.*

Tuesday, 9 May

morning

Awards and plenary session. *Kleppner, Mollenauer, Joiner.*

afternoon

Holographic storage. *Gu, Orlov.*
High-power solid-state lasers. *Honea.*
Cavity QED. *Rempe.*
Photonic bandgap: General. *Bishop.*
Electronic structure of QD. *Heath.*
High-order correlation effects in condensed matter I: Carrier correlation in optical excitations of semiconductors I. *Kuwata-Gonokami.*
High-speed communications. *Takara.*
Semiconductor quantum dots. *Alivisatos.*
High-order correlation effects in condensed matter II: Carrier correlation in optical excitations of semiconductors II. *Neukirch, Löwenich, Mukamel.*
Fabrication and characterization. *Sotomayor-Torres.*
Photons in confined structures. *John.*
Photonic bandgap: Emission. *Haus.*

Wednesday, 10 May

morning

Novel CPA technology. *Ross.*
Pulse propagation in fibers. *Haus.*
Novel waveguides. *Pertsch.*
Bose-Einstein condensation and collision resonance. *Chu, Wieman.*
Coherent dynamics I. *Hügel.*
High-power lasers. *Salokatve, Fan.*
Optical cross connects. *Buxens.*
Photonic dots and quantum dots. *Wang.*
High field applications. *Zueiback, Maksimchuk.*

Nonlinear optical devices. *Ross, Broderick, Offerhaus, Smith, Richardson, Hanna.*
Fiber amplifiers. *DiGiovanni.*
Optical frequency metrology. *Hänsch, Diddams.*
Temporal nonlinear optics. *Eggleton.*
High-order correlation effects in condensed matter III: Bose-Einstein condensation. *Kasevich, Butov, Holland, Östreich.*

afternoon

Quantum-dot lasers I. *Mukai.*
Semiconductor detector arrays. *Kozlowski, Fossum.*
IR/THz generation. *Schunemann.*
Light filaments. *Sauerbrey.*
High-order correlation effects in condensed matter IV: Strongly correlated electron systems. *Millis, Pisarev, Schumacher.*
Semiconductor detector technology. *Roth.*
Solitary waves. *Silberberg.*
High-order correlation effects in condensed matter V: Metals. *Perakis, Guidoni.*

Thursday, 11 May

morning

Novel laser sources I. *Richardson.*
Broadband pulse generation. *Korn.*
Optical coherence tomography. *Chen.*
Nonlinear materials I. *Perry.*
Quantum entanglement. *Haroche, Leibfried, Sackett.*
Cooling, trapping, and spectroscopy. *Vuletic.*
X-ray and high intensity phenomena. *Schoenlein, Cavalleri, von der Linde.*
Semiconductor optical amplifiers. *Verbeeck.*
Nonlinear materials II. *MacDonald.*

afternoon

THz imaging, ranging, and applications. *Cheville.*
Oncologic and functional imaging and diagnosis. *Hricak, Perelman, Koizumi.*
Bose-Einstein condensation. *Madison, Ketterle.*
Quantum information. *Leuchs.*
Optical interconnects II. *Buckman.*
Nonlinear optical devices for spectroscopy. *Kulp.*
Degenerate gases and atom lasers. *DeMarco.*

Friday, 12 May

morning

Mid-IR lasers. *Budni.*
Fibers and new wavelength. *Wadsworth.*
Ultrashort pulse measurement I. *O'Shea, Trebino.*
Novel devices for optical communication. *Doerr.*
Lasers using waveguides and fibers. *Nilsson.*
Performance of nonlinear optical structures. *Eyres.*
Fundamental systems. *Scully.*
Lidar and adaptive optics technology. *Vorontsov.*