

pulses in solid-state materials and their use in studying physical phenomena that occur in the femtosecond regime. Invited speakers will discuss various mechanisms for additive pulse-mode locking and new approaches to ultrafast pulse generation and amplification.

Another area of increasing importance is the use of lasers for research and clinical treatment in the medical and biological sciences. The CLEO meeting will devote nine invited talks to this topic.

Awards session

At the joint plenary session on Monday afternoon, OSA and LEOS will honor several scientists for their outstanding research. OSA's Charles Hard Townes Award, which is given each year for work in quantum optics,

will be presented to Elias Snitzer, a professor of ceramic science and engineering and a staff member of the fiber optics materials research program at Rutgers University. Snitzer is cited for "pioneering contributions to solid-state lasers and fiber optics, in particular the neodymium- and erbium-glass lasers, the first fiberoptic laser and for innovative contributions to fiberoptic amplifiers and fiberoptic lasers."

In the early days of laser research, glass was not considered a promising candidate for lasers. Snitzer helped dispel this notion when he demonstrated a neodymium-glass laser in 1961. Then in 1964 he and Charles Koester developed the first fiberoptic laser, also made from neodymium glass. The following year Snitzer and Richard Woodcock developed the erbium-glass laser, which in recent years

has found a new use as an amplifier for fiberoptic telecommunication.

Snitzer received a PhD in physics from the University of Chicago in 1953. From 1959 to 1977 he was a researcher at the American Optical Corporation, and from 1977 to 1984 he worked at United Technology Corporation's Research Center. From 1984 to 1989 he directed fiber optics research at the Polaroid Corporation. He then joined Rutgers.

Also at the plenary session, LEOS will present its Quantum Electronics Award, and newly elected fellows of OSA and LEOS will be recognized. This year's session includes four plenary speakers: Richard R. Freeman of AT&T Bell Laboratories will speak on new applications of soft x-ray optics; Chester Gardner of the University of Illinois, who is giving the Robert V.

Invited Speakers and Their Session Titles

MONDAY 13 MAY

morning

Optical Modulators. *L. M. Johnson, M. Izutsu*
Optical Logic. *S. Yamakoshi*
Microlenses and Laser Damage. *C. Zanolini*
Ultrashort Pulse Generation in Solid-State Lasers: Novel Mode-Locking Mechanisms. *H. Haus*
Laser Spectroscopy I. *D. A. Redman*
Dynamics of Surfaces. *P. Guyot-Sionnest, J. A. Prybyla*
Surfaces and Submicron Surfaces. *D. Aspnes, S. F. Alvarado, M. S. Isaacson*
Vertical Cavity Devices. *A. Von Lehman*
Stimulated Brillouin Scattering. *W. T. Whitney*
KTP and Semiconductor Quantum Structures. *J. Bierlein, E. M. Dianov*
Ultrashort Pulse Generation in Solid-State Lasers: Novel Approaches. *G. Sucha, Y. Ishida, F. Krausz*
Laser Spectroscopy II. *A. V. Smith, J. Thomas*
Surfaces and Interfaces. *H. Walther*
Tunneling in Semiconductor Microstructures. *K. Leo, C. R. Leavens, L. Eaves*

afternoon

Joint Plenary and Awards Ceremony. *A. Tonomura, C. Gardner, R. R. Freeman, W. Veldkamp*

TUESDAY 14 MAY

morning

Strained Layer GaAs Lasers. *M. Okayasu*
Femtosecond Optical Techniques. *J. P. Heritage*
Photonic Circuits/Systems. *T. Koch*

SHG in Fibers I. *B. Ya. Zel'dovich, D. Z. Anderson*
Optical Nonlinearities of Semiconductor Particles in Glasses. *D. Cotter*
Lasers in Biology. *B. J. Hudson, R. M. Hochstrasser*
Photonic Band Structure. *E. Yablonovitch, K. M. Ho*
Visible Semiconductor Lasers. *T. Suzuki*
Biomedical Imaging. *J. Reintjes*
Beam Smoothing Techniques for Fusion Lasers. *J. M. Soures*
SHG in Fibers II. *D. A. Weinberger, V. M. Churikov*
Spectroscopy of Transient Species. *T. Miller, K. R. Leopold*
Physics of Spontaneous Emission. *F. De Martini, R. K. Chang*

afternoon

Symposium on Photorefractive Keratectomy. *C. Puliafito, D. Muller, C. Munnerlyn*
Optically Controlled Power Switches/Optical Memory. *F. J. Zutavern*
Ultrafast Probes of Phonons. *H. Kurz, M. S. Dresselhaus*
Cavity QED. *B. Haroche*
Ultrafast Electro-Optic Sampling. *W. Kutt*
Medical Diagnostics and Fiber Optics. *R. Richards-Kortum*
Photonic Switching. *Y. Kaminow, I. Bennion*
Symposium on Solid-State Laser Materials. *G. Huber, B. Chai*
Waveguide Frequency Conversion Devices II. *H. Suche*
Nonlinear Wave Propagation. *D. Strickland, D. R. Anderson*
High-Intensity Laser Physics I. *S. E. Harris, D. J. Gauthier, J. Javanainen*

WEDNESDAY 15 MAY

morning

Photodetectors. *K. Zanio, Y. G. Wey*
Terawatt to Petawatt Lasers. *C. K. Rhodes, A. A. Mak*



Elias Snitzer

Pole Memorial Lecture, will speak on applications of high-power lasers in mesospheric remote sensing and astronomy; Akira Tonomura of Hitachi will discuss applications of holographic electron interferometry; and Wilfrid B. Veldkamp of MIT Lincoln Laboratory will describe the use of

binary optics in new imaging sensors.

Short courses and services

A number of half-day courses will be offered on Sunday, 12 May, and Tuesday, 14 May, at the Baltimore Convention Center. The 23 courses are intended for engineers and technical managers who wish to explore new technologies. Those interested in taking one of the courses are encouraged to preregister with OSA; there will also be on-site registration for courses that are not already full.

Representatives from 400 companies that produce and supply laser and electro-optic equipment will display their wares at the CLEO-QELS technical exhibition in the Baltimore Convention Center; the exhibition is being organized by OSA. The technical sessions will break from 10 am to noon

on Wednesday to give attendees the chance to visit the exhibit. The exhibit hall will be open Tuesday and Wednesday from 10 am to 5 pm and Thursday from 10 am to 4 pm. The CLEO exhibit will also feature a series of demonstrations and lectures highlighting new products and applications; schedules will be available on site.

OSA will operate a press room at the Baltimore Convention Center, Room 313, during the following hours: Monday to Thursday, 8:30 am to 5:30 pm; and Friday, 8:30 am to 1 pm. An employment center will be open in Room 314 Monday through Thursday from 9 am to 5 pm and Friday from 9 am to 1 pm. Job candidates are encouraged to submit their resumes at the center; interviews will be arranged between interested employers and job applicants. ■

Semiconductor Laser Arrays I. *A. Partovi*
Semiconductor Laser Arrays II. *D. F. Welch*
Cooling and Trapping I. *V. Balykin, M. Zhu*
Quantum Noise in Optical Propagation. *R. Shelby, B. Yurke*
Nonlinearities in Organics I. *G. K. Wong, C. P. Yakymyshyn*

afternoon

Symposium on Optical Imaging. *S. Svanberg, K. G. Spears, H. Inaba*
Inertial Confinement Fusion. *J. D. Kilkenny*
Phase Conjugate Lasers and Devices. *A. Leshchey*
High-Speed Semiconductor Lasers. *Y. K. Chen*
Cooling and Trapping II. *A. Aspect, P. S. Julienne*
Novel Magneto-Optics in Semiconductors. *J. B. Stark, D. E. Heiman*
Clusters. *R. Smalley, R. Whetten*
Nonlinear Wave Mixing and Spectroscopy. *D. Steel*
Chemical and CO₂ Lasers. *N. A. Generalov*
Photorefractive Applications. *S. I. Stepanov*
Gas Phase Chemical Dynamics. *T. R. Rizzo, B. Bohac*
Squeezed Light. *P. Kumar, W. Richardson*
Nonlinearities in Organics II. *J. S. Meth, W. E. Moerner*

THURSDAY 16 MAY

morning

Coherent Techniques. *Y. Chung*
Laser Diagnostics and Spectroscopy. *J. M. Harris*
Novel Solid-State Lasers. *N. Andreev*
Vertical Cavity Lasers. *L. Coldren, J. Jewell*
High-Intensity Laser Physics II. *H. Helm, M. Pont*
Surface Chemistry. *A. Zewail, A. Harris, J. C. Stephenson*
Combustion and Flow Diagnostics. *R. B. Miles*
Micro and Vertical Cavity Semiconductor Lasers. *J. J. Zayhowski*
High-Intensity Laser Physics III. *M. D. Perry, J. H. Eberly*
Fundamental Problems. *C. Weiman, E. Commins*

afternoon

Electron-Beam-Pumped Gas Lasers. *P. J. M. Peters, T. T. Perkins*
Amplified Transmission Systems. *S. Yamamoto*
Laser Applications and Sensing I. *P. Cielo, W. P. Leung*
Guided Wave Lasers. *M. Monerie*
Vertical Cavity and Quantum-Confined Semiconductor Lasers. *K. Vahala, E. Kapon*
New Semiconductor Materials Systems. *J. Hegarty*
High-Intensity Laser Physics IV. *C. Rhodes, N. H. Burnett*
Symposium on Stabilized Lasers I. *M. Zhu, J. Kimble, S. N. Labinskii*
Free Electron Lasers and Optical Cavities. *D. R. Shoffstall*
High-Speed Lightwave Components. *M. C. Wu*
Laser Applications and Sensing II. *R. O. Claus*
Erbium-Doped Guided Wave Devices. *R. Brinkman*
Laser Processing in Optoelectronics and Other Novel Applications. *R. Osgood*
Nonlinearities in Semiconductors. *J. E. Sipes, E. Garmire*
Nonlinear Optics. *S. C. Rand*
Symposium on Stabilized Lasers II. *M. Ohtsu, M. G. Boshier, D. Meschede*

FRIDAY 17 MAY

morning

Ocean Optics Remote Sensing. *R. N. Swift*
Semiconductor Lasers for Communications. *M. Okai*
Pulse Generation and Propagation in Fibers. *P. V. Mamyshev*
Excitons. *W. Bron, A. Mysyrowicz*
Excimer Laser Ablation. *C. E. Otis*
Space Systems for Remote Sensing. *L. Gusev*
Optical Amplifiers. *N. A. Olsson*
Terahertz Spectroscopy I. *B. I. Green*
Nonlinear Spectroscopy. *A. M. Weiner*
Nonlinear Optics in Fibers. *E. M. Dianov*
Laser Applications in Microelectronics. *K. Toyoda*
Optical Parametric Oscillators. *C. L. Tang*
Turbulence and Polarization in Optical Propagation. *V. I. Tatarskii, S. Flatté*
Raman, Brillouin and Rayleigh Scattering Process. *M. S. Mangir*
Dynamics of Photorefractive Systems. *D. Anderson*