

CLEO and IQEC in San Francisco

This year's meetings will feature special sessions on SDI, scientific secrecy and laser applications in semiconductor processing.

CLEO '86, the sixth Conference on Lasers and Electro-optics, will be held in San Francisco, California, on 9-13 June concurrently with IQEC '86, the 14th International Quantum Electronics Conference. The Moscone Convention Center will serve as headquarters for both meetings.

CLEO is sponsored by the Optical Society of America and the Lasers and Electro-optics Society of IEEE in cooperation with the quantum-electronics division of the European Physical Society and the Japanese Quantum Electronics Joint Group (whose member societies are the Institute of Electronics and Communications Engineers of Japan, the Institute of Electrical Engineers of Japan, the Japan Society of Applied Physics and the Laser Society of Japan). CLEO technical sessions will include 87 invited papers; three poster sessions are also scheduled. A limited number of papers submitted after the deadline will also be accepted; these will be presented on Thursday evening.

IQEC is sponsored by The American Physical Society, the Lasers and Electro-optics Society of IEEE and the Optical Society of America in cooperation with the quantum-electronics division of the European Physical Society. The conference has been held every two years since 1959. IQEC technical sessions will include 84 invited papers and three poster sessions. Four sessions are scheduled on Thursday and Friday at which accepted post-deadline papers will be presented.

Registration for CLEO and IQEC technical sessions will be held on Sunday, 8 June, from 7:30 am to 6 pm, on Monday and Tuesday from 7:30 am to 4 pm, on Wednesday and Thursday from 8 am to 4 pm, and on Friday from 8 am to noon.

The Laser Institute of America will offer a full-day course on industrial and engineering laser applications, and half-day courses on the fundamentals of lasers, LIDAR probing of the atmosphere, femtosecond-pulse generation and measurement, optical bi-stability and diode lasers.

At a special session on Tuesday evening, Colonel Thomas W. Meyer (Technology Integration Division of the Directed Energy Office, Strategic De-



fense Initiative Organization) will present an overview of SDI. A panel discussion on scientific secrecy moderated by Arthur H. Guenther (Air Force Weapons Laboratory) will follow. On

Wednesday morning a special session on laser machines for semiconductor processing will be held. The joint CLEO-IQEC reception will be held on Wednesday evening at the San Francis-



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co Hilton Hotel and Towers. In addition IEEE/LEOS will host a banquet on Thursday evening; the 1985 IEEE Medal of Honor recipient, John R. Whinnery (University of California), will speak on "Lasers, light bulbs and steam engines: some questions for the history of technology."

Awards. At the joint CLEO-IQEC session on Monday morning, the Optical Society of America will present its Charles Hard Townes Award to Yuen Ron Shen (University of California, Berkeley) for his "pioneering and continuing contributions to the field of nonlinear optics." Shen received his BS from National Taiwan University in 1956, his MS from Stanford University in 1959 and his PhD in solid-state physics from Harvard University in 1963. Since 1964 he has taught at the University of California, where he was named a full professor in 1970. Shen has worked on a wide variety of problems in nonlinear optics: His earliest

research was on the stimulated Raman effect, self-focusing and the quantum theory of nonlinear optics. He has continued to work on problems in these fields, as well as on the optical rectification of picosecond pulses, nonlinear optical effects in liquid crystals, and multiphoton excitation and de-excitation of molecules. Most recently he has studied second-harmonic generation on surfaces.

In addition, the IEEE Lasers and Electro-optics Society will present its Quantum Electronics Award (winner to be announced at the session) and IEEE will present its David Sarnoff Award to Yasuharu Suematsu (Tokyo Institute of Technology) for his contributions "to semiconductor lasers and integrated optics for optical-fiber communications." Suematsu received his BS (1955) and his PhD (1960) from the Tokyo Institute of Technology. He worked in the electro-science laboratory of Ohio State University (Columbus,

Sessions with invited papers

Monday

morning

CLEO-IQEC: Joint awards and plenary session. J. A. Westphal; C. Brau; H. Walther; J. Dixon

afternoon

- CLEO: Optical bi-stability. N. Peyghambarian; C. S. Tsai
 CLEO: Fundamental chemistry. J. Wolfrum; P. J. Brucat, R. E. Smalley, L. S. Zheng, C. M. Kamer, S. H. Yang, C. L. Pettitte, M. J. Craycroft, G. L. Paul
 CLEO: Phase conjugate resonators. D. A. Rockwell, H. W. Bruesselbach; I. Ledoux, J. Zyss, A. Migus, J. Etchepare, G. Grillon, A. Antonetti
 CLEO: Optical measurement and control. A. C. Tam
 IQEC: Ultrafast phenomena. J. A. Kash, J. C. Tsang
 IQEC: Symposium on structure and dynamics of biological molecules. M. A. El-Sayed; W. Kaiser, W. Zinth; J. L. Martin, D. Houde, J. Petrich, A. Migus, A. Antonetti, C. Poyart; T. G. Spiro
 IQEC: Quantum-well laser devices. J.-P. Faurie
 IQEC: Nonlinear optical processes in atomic vapors. C. K. Rhodes
 IQEC: Collision-induced nonlinear optical processes. Y. H. Zou, N. Bloembergen; J. Mlynek, E. Buhr, C. Tamm, W. Lange
 IQEC: Chaos in lasers. C. O. Weiss
 IQEC: Chaos in passive systems with delay. H.-J. Zhang, J. H. Dai; A. Tallet, M. LeBerre, E. Ressayre, H. M. Gibbs

Tuesday

morning

- CLEO: Laser angioplasty. W. Grundfest, F. Litvack, T. Goldenburg, J. Forrester, J. B. Laudenslager, T. J. Pacala, I. S. McDermid; M. S. Feld, C. Kittrell, R. E. Cothren, B. A. Sacks, J. R. Kramer, E. Rubenstein, H. D. Zeman, A. C. Thompson, W. Thomlinson, J. N. Otis, R. S. Kernoff, E. B. Hughes, R. Hofstadter, D. C. Harrison, H. Gordon, J. Giacomini, G. S. Brown
 CLEO: Diode-laser arrays. D. R. Scifres
 CLEO: Short-wavelength lasers. M. Key
 CLEO: Electronic, chemical and metal-vapor lasers. R. F. Heidner III
 CLEO: Diagnostic laser chemistry. R. W. Dreyfus, R. Walkup, R. Kelly, R. Srinivasan
 CLEO: Mechanisms of laser-chemical processing. C. J. Chen; J. M. Jasinski
 CLEO: Laser etching. P. E. Dyer
 CLEO: Uranium and zirconium laser isotope separation. M. Spaeth; H. Jetter
 IQEC: Ultrafast phenomena. W. Z. Lin, J. G. Fujimoto, E. P. Ippen, R. A. Logan; M. J. Rosker, F. W. Wise, C. L. Tang; J. Bokor, R. R. Freeman, P. H. Bucksbaum, R. Haight
 IQEC: Symposium on squeezed states. L. Mandel; Y. Yamamoto, S. Machida, T. Yanagawa; M. D. Levenson, R. M. Shelby, R. G. DeVoe, S. H. Perlmutter; R. E. Slusher, B. Yurke, J. R. Klauder, S. L. McCall
 IQEC: Gas lasers. V. A. Danilychev

afternoon

- CLEO: Laser deposition. J. G. Black, S. P. Doran, D. J. Ehrlich; B. M. McWilliams
 CLEO: Medical applications. R. Rox, N. Nishioka, S. Dretler, J. Parrish; C. J. Gomer, N. Hayashi, A. L. Murphree
 IQEC: Ultrafast phenomena. M. N. Islam, L. F. Mollenauer
 IQEC: Semiconductor physics. J. L. Oudar, D. Hulin, A. Migus, A. Antonetti
 IQEC: Lasers for spectroscopy. J. L. Hall, C. Salamon, D. Hills
 IQEC: Nonlinear optical materials. V. Aratunyan; C. Flytzanis, F. Hache, D. Ricard, P. Roussignol
 IQEC: Symposium on squeezed states. A. S. Lane, M. D. Reid, C. M. Savage, D. F. Walls; H. J. Kimble, J. L. Hall; P. Filipowicz, J. Javanainen, P. Meystre
 IQEC: X-ray lasers. S. Suckewer; D. L. Matthews; I. V. Sobelman

Wednesday

morning

- CLEO: Medical applications. S. N. Joffe; R. Birngruber, C. A. Puliafito, A. Gawande, W. Z. Lin, R. W. Schoenlein, J. Fujimoto
 CLEO: Frequency-stabilized semiconductor lasers. M. Ohtsu
 CLEO: Nonlinear optical devices. G. I. Stegeman, C. T. Seaton
 CLEO: CO₂ waveguide lasers. L. A. Newman, R. A. Hart, J. T. Kennedy, A. J. DeMaria, W. B. Bridges
 CLEO: Diode-pumped solid-state lasers. D. L. Sipes Jr; T. J. Kane, D. Scerbak, W. R. Kozlovsky, R. L. Byer
 CLEO: Applications of nonlinear optics. W. Sohler, B. Hampel, R. Regener, R. Ricken, H. Suche, R. Volk
 CLEO: Laser materials processing. A. La Rocca, G. Capello, R. Pera
 CLEO-IQEC: Joint symposium on new solid-state laser materials. L. G. DeShazer; G. Huber, I. A. Shcherbakov; Ye. V. Zharikov
 IQEC: Spectra of ions and molecules. A. Cooksy, M. Gruebele, J. Owrutsky, M. Polak, N. Rosenbaum, S. Strahan, L. Tack, R. J. Saykally
 IQEC: Nonlinear optical effects in fibers. A. Tomita, K. Tai, A. Hasegawa
 IQEC: Quantum optics theory. G. Casati; A. E. Siegman; J. C. Englund, C. M. Bowden
 IQEC: Semiconductor physics. A. V. Nurmikko, Y. Hefetz, R. L. Gunshor, L. A. Kolodziejzski
 IQEC: Laser fusion and beat wave accelerators. K. Mima, Y. Kitagawa, S. Fujita, K. Nishihara, K. Tanaka, H. Azechi, H. Takabe, M. Yamaguchi, T. Oosuga, H. Nakajima, Y. Kato, C. Yamanaka, T. Tajima
 IQEC: Symposium on cavity quantum electrodynamics. D. Kleppner; S. Haroche; G. Rempe, H. Walther; G. Gabrielse

afternoon

- CLEO: Advanced laser technology. R. E. Chatham
 CLEO: Nd-laser technology. M. A. Summers
 CLEO: Quantum wells and solitons. D. S. Chemla; L. F. Mollenauer, F. M. Mitschke

Ohio) in 1967-68. In 1973 he became professor of physical electronics in the Tokyo Institute. Suematsu has developed a relaxation-broadening model of semiconductor lasers and has invented long wavelength and dynamic single-mode laser systems. Most recently he has studied high-speed electronic transport phenomena.

This year's R. V. Pole Memorial Lecture will be given by James A. Westphal (California Institute of Technology), who will speak on the observing capabilities of NASA's Hubble Space Telescope. Three other talks are scheduled for the joint plenary session: Charles A. Brau (Los Alamos National Laboratory) will speak on recent developments in free-electron lasers, Herbert Walther (Max-Planck Institut für Quantenoptik) will speak on the radiation interaction of single atoms in a cavity, and John A. Dixon (Laser Institute, University of Utah Medical Center) will speak on the role of physics in

improving laser-surgery techniques.

Exhibit. Featuring more than 245 manufacturers, distributors, publishers and societies, the CLEO technical exhibition of laser and optoelectronic equipment and services will be the largest of its kind to be held in 1986. Attendees may enter daily drawings for valuable door prizes, such as helium-neon lasers. The show's hours will be Tuesday and Wednesday from 10 am to 6 pm, and Thursday from 10 am to 5 pm.

A press room will be maintained in room 234 on the east mezzanine level of the convention center during the following hours: Monday through Thursday from 8 am to 5 pm, and Friday from 8 am to noon.

There will also be a placement center at the meeting for registered attendees and companies. It will be open Monday through Thursday from 8:30 am to 5 pm, and Friday from 8:30 am to noon.

—MARGARET MARYNOWSKI □



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CLEO: Nonlinear optics and guided-wave devices. *M. M. Fejer, R. L. Byer*
 CLEO: Industrial CO₂ laser technology. *H. J. J. Seguin, V. E. Merchant, M. R. Cervenak, V. A. Seguin*
 CLEO: Distributed feedback lasers. *Y. Tohmori, H. Ohashi, T. Kato, S. Arai, K. Komori, Y. Suematsu*
 IQEC: Multiple resonance and Raman spectroscopy. *P. Esherick, A. Owyong; J. Xie, J. Bo, C. Zhang*
 IQEC: Laser-plasma interactions. *Z.-Z. Xu, X.-L. Li, T.-F. Xu, J.-X. Ma*
 IQEC: Symposium on free-electron lasers and coherent-radiation sources. *H. Wiedemann; C. Pellegrini; D. A. G. Deacon; V. Jaccarino*
 IQEC: Symposium on applications of lasers to fundamental problems. *D. H. Auston, M. C. Nuss; H. J. Metcalf*
 IQEC: Laser probing of molecular-surface interaction. *E. J. Heilwell, M. P. Casassa, R. R. Cavanagh, J. C. Stephenson*
 IQEC: Physics of free-electron lasers and other new light sources. *J. M. Ortega*
 IQEC: Symposium on interactions of laser light with plasmas. *R. E. Turner; C. S. Liu; R. G. Evans*
 IQEC: Commemorative session—A. M. Prokhorov's 70th birthday. *V. S. Letokhov; P. Franken*

Thursday

morning

CLEO: Fusion lasers—Nd:glass. *J. T. Hunt*
 CLEO: Fiberoptic systems. *P. W. Shumate; N. Imoto, Y. Yamamoto*
 CLEO: Alternative drives for ICF. *J. Mayer-ter-Vehn*
 CLEO: Ultrafast opto-electronic devices and phenomena. *J. E. Bowers, C. A. Burrus*
 IQEC: Surface photochemistry. *R. F. Haglund Jr, N. H. Tolk*
 CLEO: Coherent communications. *T. Matsumoto*
 IQEC: Symposium on fundamental physics with lasers. *C. E. Wieman; V. P. Chebotayev; O. Poulsen*
 IQEC: Symposium on ultrametrology and ultrastable lasers. *R. G. Beausoleil, B. Couillaud, C. J. Foot, T. W. Hänsch, E. A. Hildum, D. H. McIntyre, M. Hashimoto, M. Ohtsu; F. Biraben, L. Julien, J. C. Garreau; R. G. Hulet, J. C. Bergquist, W. M. Itano, D. J. Wineland, D. J. Larson*
 IQEC: Surface photophysics. *K. Giesen, F. Hage, F. J. Himpel, H. J. Riess, W. Steinmann*

afternoon

CLEO: Fusion lasers for ICF and other applications. *D. Strickland, P. Maine, M. Bouvier, S. Williamson, G. Mourou; W. G. Kovalsky*
 CLEO: Nonlinear interactions in photorefractive media. *G. C. Valley, A. L. Smirl, M. B. Klein, K. Bohnert, T. F. Boggess*
 CLEO: Ultrafast electronic sampling. *J. A. Valdmanis*
 CLEO: High-speed optical transmission technology. *J. F. Weller, L. Goldberg; R. A. Linke*

CLEO: Laser fusion experiments. *R. L. McCrory; H. Nishimura, S. Nakai, C. Yamanaka*
 CLEO: Nonlinear optical materials. *B. K. Nayar; V. Yu. Baranov, A. M. Dykhne, D. D. Malyuta, B. P. Rysev, V. D. Pismennyi, A. Yu. Sebrant*
 CLEO: Ultrafast optics and electronics. *P. B. Corkum, P. P. Ho, R. R. Alfano*
 IQEC: Nonlinear optical study of surfaces. *T. F. Heinz, G. Arjavalingam, M. M. T. Loy, J. H. Glowina*
 IQEC: Symposium on movement of atoms with laser beams. *J. P. Woerdman, J. E. M. Haverkort, H. G. C. Werij, P. R. Berman; A. Ashkin; R. N. Watts, C. E. Wieman; V. Balykin, V. Letokhov, V. Minogin*
 IQEC: Highly excited states. *H. Rinneberg; A. H. Kung, R. H. Page, R. J. Larkin, Y. R. Shen, Y. T. Lee*
 IQEC: Physics of free-electron lasers and other new light sources. *N. Vinokurov; W. B. Colson*

Friday

morning

CLEO: Nonlinear and laser host materials. *G. R. Meredith*
 CLEO: LIDAR technology development. *M. Maeda, T. Shibata*
 CLEO: Optical data storage. *G. M. Claffie; M. Chen, K. A. Rubin, R. W. Barton*
 CLEO: Novel approaches to flow diagnostics. *R. B. Miles*
 CLEO: High-power-laser materials. *R. W. O'Neil*
 CLEO: Laser probing of the atmosphere. *K. W. Rothe, H. Walther*
 CLEO: Semiconductor laser switching. *H. Matsumura*
 IQEC: Phase conjugation. *P. Simoneau, S. Le Boiteux, D. Bloch, M. Ducloy, J. R. R. Leite*
 IQEC: Self-pumped phase conjugation. *J. Feinberg*

afternoon

CLEO: Devices for optical processing. *J. L. Jewell*
 CLEO: Space and airborne applications. *M. Herring; J. R. Gibson*
 CLEO: Semiconductors. *R. D. Burnham, R. L. Thornton, T. L. Paoli, N. Holonyak Jr; L. R. Dawson*
 CLEO: Novel optical fibers and fiber components. *D. N. Payne, L. Reekie, R. J. Mears, S. B. Poole, I. M. Jauncey, J. T. Lin*
 CLEO: III-IV Optoelectronics. *L. D. Hutcheson*
 CLEO: Optical implementations of associative memories. *D. Psaltis*
 CLEO: Fiberoptic sensors. *T. Nakayama, K. Kyuma*
 IQEC: Laser chemical physics. *T. Kuga, K. Nakagawa, Y. Matsuo, T. Shimizu; W. Meier, G. Ahlers, H. Zacharias*
 IQEC: Novel physics with optically generated gratings. *P. L. Gould, G. A. Ruff, P. J. Martin, J. L. Picque, R. E. Stoner, D. E. Pritchard*
 IQEC: Novel optical measurements. *W. A. van Wijngaarden, K. D. Bonin, W. Happer, E. Miron, D. Schreiber, T. Arisawa*
 IQEC: Optical bi-stability. *L. A. Lugiato, L. M. Narducci, J. R. Tredicce, D. K. Bandy*