

# SOCIETIES AND AWARDS

## Optical Society honors Patel

During its 50th anniversary meeting in Washington, D.C., last month, the Optical Society of America presented the 1966 Adolph Lomb Medal to C. Kumar N. Patel of Bell Telephone Laboratories. The medal, awarded biennially to a scientist under 30 years of



PATEL

age for noteworthy contributions to optics, was given to Patel for his work in far-infrared spectra of gases and molecules.

Patel has invented a number of laser systems and explored various mechanisms of gas-laser excitation, quantum effects and nonlinear optical phenomena in the infrared. Some months ago, at Bell Laboratories, he invented a flowing-gas laser that for the first time used the transfer of molecular vibrational energy to obtain what was then the highest continuous power output at infrared frequencies and the highest energy-conversion efficiency of any laser. And it was his discovery of laser action on vibrational-rotational transitions of carbon dioxide that resulted in the development of very high continuous power output and high-efficiency carbon-dioxide lasers. With his colleagues, Patel has developed a modified version of this laser that has a peak power output of nearly 200 W.

Patel's investigations of atomic-gas-laser transitions in the infrared at

wavelengths up to 133 microns have helped to bridge the gap between laser-generated radiation and that coming from microwave sources. His work on molecular vibrational-rotational laser transitions has also had an impact on molecular spectroscopy. More recently he has studied nonlinear optical effects in the infrared. He has discovered that tellurium possesses an enormous nonlinear coefficient, which he has used to obtain large amounts of harmonic generation with high-power carbon-dioxide lasers.

Patel was born in Baramati, India, in 1938 and educated at Poona and Stanford universities. While at Stanford he conducted research on narrow bandpass ferrimagnetic filters, and he received his PhD in electrical engineering there in 1961. He joined Bell Labs the same year and has been a member of the Bell technical staff ever since. He is a member of the American Physical Society and the Institute of Electrical and Electronics Engineers.

## OSA launches REPOSA

Far from being the heroine of an Italian opera, REPOSA is the Optical Society's answer to the critical shortage of educational programs and scientific workers in optics. The Research and Education Program of the Optical Society of America, set up in January, has a full-time director in the society's president-elect, John A. Sanderson, who will work out of OSA offices in Washington, D.C.

REPOSA is but one part of "Optics—An Action Program," a comprehensive OSA project to increase the national supply of personnel trained in optics. Of the six areas in the action program, three are concerned with graduate research programs and one with opticians and optical technicians. REPOSA is a combination of the two remaining areas, which involve undergraduate research and the teaching of undergraduate optics, respectively.

Some of the activities that Sanderson will possibly carry out are:

- start a research newsletter that will keep the academic world informed of the faster-moving fields in optics, such as lasers, information transfer and new optical materials
- ensure the capability of competent universities to provide NSF summer institutes in modern optics and ensure teacher attendance at them
- make trial experiments and prepare a consensus curriculum for an undergraduate optics course; help provide optimal curriculum proposals and criticisms of current ones for both undergraduate courses and summer institutes
- get some better optical-journal distribution in colleges that cannot now afford them.



SANDERSON

"Initial responses to the program," says Sanderson "have been encouraging. Communications with local sections, society corporation members and representatives of government agencies have indicated a widespread recognition of the potential usefulness of a central office through which educational, industrial and government interests can be served. . . . It is expected that some assistance can be given to the national objective of strengthening federal support of the smaller colleges. Although the Optical Society does not plan to become an administrator of research proposals and grants, it will be in a strong position to advise colleges with respect to government interests and the preparation

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of proposals, and to advise government regarding optical research interests of the college and university community. . . . The opportunity for service by the Optical Society to its membership and to national needs is clear. It is expected that the entire society will join strongly in the program and that an observable enhancement of general optical capability will be the reward."

Sanderson, who is a fellow of the American Physical Society and of OSA and a member of the AIP governing board, retired from the Naval Research Laboratory in December. He was superintendent of the optics division there from 1949 to 1965. During his 30-year association with the laboratory he was largely concerned with optical problems of military interest and also made valuable contributions in radiometry.

### Dickinson College awards

Dickinson College has presented its fifteenth Priestley Memorial Award to Charles H. Townes and its Glover Medal to Arnold Honig.

Townes was honored for his "contributions to mankind through physics and his interest in educating young scientists." A pioneer in microwave spectroscopy, he was among the first to demonstrate high-resolution spectra of gases in the microwave region. In 1964 Townes won the Nobel Prize with N. G. Basov and A.M. Prokhorov for the development of masers. Since 1961 he has served as provost of the Massachusetts Institute of Technology and shares, with the MIT president, responsibility for supervising the MIT educational and research programs. Townes has also been a consultant to the President's Science Advisory Committee since 1959 and is chairman of the NASA Science and Technology Advisory Committee for Manned Space Flight. A fellow of both the American Physical Society and the Optical Society of America, he has also been previously honored with the Research Corporation Award, the Comstock Award, the Ballantine Medal and the Rumford Premium.

Arnold Honig was cited for his "contributions to the field of physics through research and teaching." He was born in New York City and re-

ceived his PhD in physics from Columbia University in 1953. Honig has served as a research scientist at the University of California (Berkeley) and the Ecole Normale Supérieure in Paris. A member of the Syracuse University faculty since 1956, he is currently a professor of physics with research interests in microwave spectroscopy and electron-spin resonance.

### Langmuir prize

Herbert S. Gutowsky of the University of Illinois has won the 1966 Irving Langmuir Award in Chemical Physics. The \$5000 honor is sponsored by the General Electric Foundation and administered in alternate years by the American Chemical Society and the American Physical Society. Last year's winner, chosen by APS, was John H. Van Vleck of Harvard University. Gutowsky is well known for developing nuclear-magnetic-resonance techniques and applying them to chemistry. His research has resulted in wide use of NMR by chemists to obtain a clearer picture of molecular structure and intermolecular interactions. In addition he has done important work on chemical shifts and electron-coupled spin-spin interactions and has proposed and developed NMR techniques for use in chemical kinetics.

Gutowsky earned his PhD in physical chemistry at Harvard University in 1949 and subsequently joined the Illinois faculty as an instructor in chemistry. Since 1956 he has served as professor of chemistry and head of the division of physical chemistry at Illinois. He is a fellow of the American Physical Society.

### APS division officers

The American Physical Society divisions of electron and atomic physics and fluid dynamics have recently announced their executive committee officers for 1966.

The executive committee of the electron and atomic-physics division includes chairman J. Arol Simpson (National Bureau of Standards), past chairman Wade L. Fite (University of Pittsburgh), vice chairman Edgar Lipworth (Brandeis University), mem-