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we hear that

Recipients of the Award are Eric Jakeman, Robin Jones, Christopher Oliver and Roy Pike of the Royal Signals and Radar Establishment and Stephen Trudgill of the Malvern Instruments Company. The honor consists of a gold medal and prize money totalling £25 000 (close to \$50 000).

The Malvern Correlator measures the periodicity in a stream of laser-produced photons as they are scattered by molecules in motion. The device analyzes the patterns of the signals produced by this scattering and plots the motion of the molecules from these data. The range of applications include studying jet-engine airflow, the flow of blood in the human retina and the twinkling of starlight.

Eric Jakeman received his doctorate in mathematical physics from Birmingham University in 1963. Following a year at the University of California at Los Angeles, he joined the Royal Radar Establishment—which later merged with the Signals Research and Development Establishment to form the RSRE. His work since then has ranged from superconductivity theory to the hydrodynamics of crystal growth to his central interest in optical-signal processing and light-scattering techniques. He has been the recipient of the Institute of Physics' Maxwell Medal for his work in this field.

Christopher Oliver, PhD in nuclear physics from Liverpool University, joined the RRE in 1967, and is at present a principal scientific officer working in the signal-processing division. Like Jakeman, his interests have centered on the processing of optical signals.

Roy Pike earned a PhD in x-ray diffraction at University College Cardiff. After a year's postdoctoral fellowship there he moved to the Massachusetts Institute of Technology on a Fulbright Scholarship where his research interests also moved to solid-state physics. He joined the physics group at RRE in 1960. In 1975, Pike was awarded the Charles Parsons Prize for his work in laser physics.

Robin Jones began his work at RRE in 1961 as a student apprentice. Since then he has earned degrees in electrical engineering and has been chiefly concerned with the design of high-speed digital electronic systems.

Stephen Trudgill, managing director of the Malvern Instrument Company, worked at RRE in the field of low-noise systems and airborne radar before joining Malvern.

Hawking receives Einstein Award

Stephen W. Hawking, astrophysicist and mathematician at Cambridge University, is this year's Albert Einstein Award re-

cipient. The prize, established by the Lewis and Rosa Strauss Memorial Fund, is awarded irregularly and consists of a cash prize of \$15 000 and a gold medal bearing the likeness of Einstein.

Hawking received the award for his outstanding work in the study of black holes and exceptionally strong gravitational fields. He presently leads a group at Cambridge, composed of other astrophysicists and mathematicians, who are working in the area of nuclear particles and radiations emanating from regions where it is thought stars have collapsed.

David R. Smith, a member of the Los Alamos Scientific Laboratory's critical experiments and diagnostics group, has received an Achievement Award from the American Nuclear Society's Nuclear Criticality Safety Division. Smith's activities at LASL involve nuclear critical assemblies, shipping containers, reprocessing and industrial safety.

Gerald A. Smith has been named associate laboratory director for high-energy physics at the Department of Energy's Argonne National Laboratory. Smith, a professor of physics at Michigan State University, replaces Thomas H. Fields, the former associate director, who will be returning to full-time research.

John W. Taylor, staff member at the Los Alamos Scientific Laboratory since 1957, has been named to head the Laboratory's Theoretical Design Division, succeeding Raymond Pollack in the post.

Charles M. Chambers, the former associate dean at George Washington University, was named staff associate on the Council on Postsecondary Accreditation. Chambers holds both a PhD in physics and a JD in administrative law.

Jeffrey A. Davis, formerly of the Illinois Institute of Technology, has joined the physics department of San Diego State University as associate professor.

Jesse R. Lien was elected vice-president for engineering at the General Telephone and Electronics's Product Group and president of GTE Laboratories. Lien joined GTE in 1953.

Robert J. Scroggs, formerly with the neutron-physics group at the Oak Ridge National Laboratory and most recently the manager of the European affiliates for Ortec, Inc, has been elected the president of Tenelec, Inc, a manufacturer of nuclear instrumentation.

Jocelyn Bell Burnell, researcher on the staff of the Mullard Space Science Laboratory of University College London, is the recipient of the 1978 J. Robert Oppenheimer Memorial Prize. Sponsored by the Center for Theoretical Studies at the

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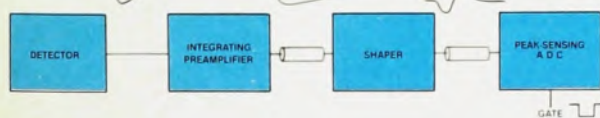
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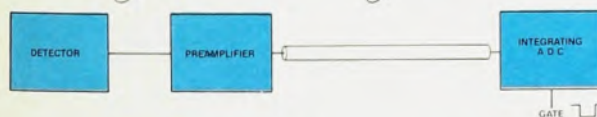
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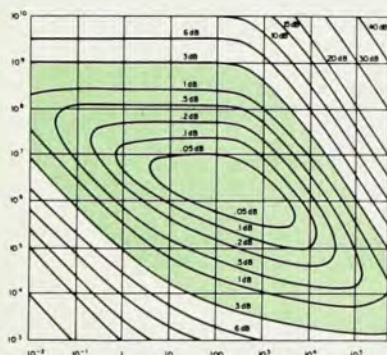
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we hear that

the University of Miami, the award cites Burnell's contributions to science for her role in the discovery of pulsars. She is the first woman to receive this distinction.

The Office of Nuclear Regulatory Research appointed **Gary L. Bennett** as chief of its Research Support Branch. Bennett

has most recently served as technical assistant to the director for water reactor safety research of the Nuclear Regulatory Commission.

Tom Gray, formerly associated with North Texas State University and **Christopher Sorenson** of the University of Colorado were appointed to the faculty of physics at Kansas State University.

obituaries

Hans Jaffe

Hans Jaffe, lifelong contributor to the physics of crystals, died of cancer 8 November at the age of 68. From 1940 until retirement in 1974 he directed research on piezoelectric crystals and ceramics at the Brush Development Company and its corporate successors, the Clevite Corporation and, later, Gould, Inc.

Born in Heidelberg, Germany and educated in Heidelberg, Berlin, and Göttingen, he began research under James Franck. His doctoral thesis, on solutions of lithium in ammonia, already shows a style that marked his entire career: a keen intuition of recognizing the essentials of the problem, a physicist's approach to chemistry and a phenomenal thoroughness.

Upon completing his doctorate in 1934, he left Nazi Germany and briefly taught school in Scotland. Arriving in the US in 1935, he became W. G. Cady's assistant at Wesleyan University in Connecticut. His principal task was collecting and organizing data for Cady's treatise *Piezoelectricity*. Forty years later he was to do a similar compilation for the Landolt-Börnstein tables. In the 1930's the star among piezoelectric crystals was Rochelle salt—strong piezoelectric coupling and high dielectric constant. From his understanding of ferroelectricity (in 1936!) Jaffe identified its crystal symmetry as monoclinic rather than orthorhombic between the two ferroelectric Curie points.

After a year at Allegheny College, he joined Cleveland's Brush Development Company in 1940. Task: To find a strongly piezoelectric crystal more rugged and more stable than Rochelle salt. His ADP crystals soon appeared in hydrophones for use in antisubmarine underwater-sound gear. In the 1950's and 1960's, when poled piezoelectric ceramics replaced single crystals, Jaffe's research group became the source of rapid innovation in understanding doped PZT (lead zirconate-titanate) and putting it to practical use in transducers, filters, and spark generators.

With its expertise in crystal growing, the group undertook to grow and study



JAFFE

crystals of the II-VI semiconductors, and optical-quality crystals for laser applications. As he approached retirement as a vice-president of Gould, Inc., several members of the group formed their own company, Cleveland Crystals, with Hans Jaffe an active consultant.

Jaffee held 27 patents, covering devices from electro-optic light modulators to piezoelectric-ceramic resonators. His greatest impact was on techniques of growing crystals from aqueous solution. Probably his most widely read article *Piezoelectricity* was published in the 1961 *Encyclopaedia Britannica*. Jaffe's last publication, an obituary for W. G. Cady, not only tells about his teacher and colleague, but gives us insights into ferroelectricity and its history.

STEFAN MACHLUP
Case Western Reserve University

Thomas G. Fox

Thomas G. Fox, professor of chemistry and polymer science at Carnegie-Mellon University, and editor of the *Journal of Polymer Science* (Polymer Physics Edition) since 1965, died suddenly in Pittsburgh, Pennsylvania on 28 November. He served at various times as chairman of The American Physical Society's Division of High Polymer Physics, of the Gordon