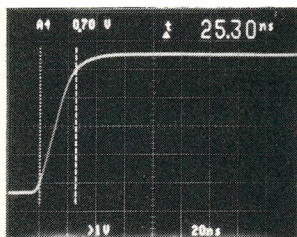


A New **FAST POWER™** Product... **THE SVX-800 PULSE GENERATOR**

Clean, fast pulses at an economical price

- ☐ Front panel adjustable amplitude, pulse width and frequency
- ☐ Protection against opens or shorts
- ☐ Internal power supply and trigger generator



SPECIFICATIONS

- ☐ Voltage: 0-800V
- ☐ Rise time: <30ns
- ☐ Pulse width: 75ns to 3μs
- ☐ PRF: Single shot to 25 KHz (ext) 200 Hz to 25 KHz (int)
- ☐ Jitter: <1ns shot to shot
- ☐ Average power: 25W max.

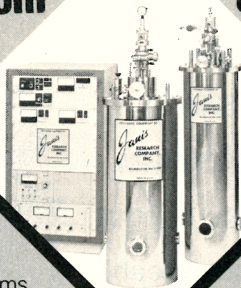
Please call **DEI** today for more information.



Directed Energy, Inc.
2301 Research Blvd., Suite 101
Fort Collins, CO 80526
303/493-1901, Fax 303/493-1903

Circle number 119 on Reader Service Card

Why leading research labs buy superconducting magnet systems from Janis



The reason; our expertise. Research physicists, dedicated solely to magnet systems, are available to discuss your experiment; to help determine the system that's right for you.

Over the past 25 years, hundreds of systems have been delivered; MIT National Magnet Lab, IBM, DuPont, Bell Labs, Los Alamos, Lawrence Livermore and others.

The SuperOptiMag series, for magneto-optical experiments, is available with split solenoid pairs, fields up to 7 tesla and window

materials spanning most of the electromagnetic spectrum.

The SuperVariMag series features variable temperatures from 1.5 to 300K and, with our lambda plate option, fields up to 14 tesla can be achieved.

Write today for your free guide to superconducting magnet systems or call and ask for Dr. Jirmanus, he'll be happy to discuss your research needs.

Janis Research Co., 2 Jewel Drive, P.O. Box 696, Wilmington, MA 01887, phone: 508 657 8750.

JANIS

Circle number 120 on Reader Service Card

den was chosen for his *Time* article "The World's Water," which described the often damaging effects of human activity on the planet's water supply. Linden received a BA in English literature from Yale University in 1969.

At its December 1990 meeting AGU presented the Horton Award to Garrison Sposito, a professor of soil physical chemistry at the University of California at Berkeley. He was cited for "inspiring research into the foundational physics of the theory of transport in natural porous media." Sposito received a PhD in soil science from Berkeley in 1965. He then joined the Sonoma State University faculty. Sposito moved to the University of California at Riverside in 1974 and joined the Berkeley faculty in 1988. (Several other individuals were recognized at the December 1990 AGU meeting; see *PHYSICS TODAY*, January 1991, page 81.)

OBITUARIES

William George Penney

William George Penney (Lord Penney), who died on 3 March 1991, was best known for his contributions to atomic energy, particularly for leading the development of the British atomic bombs.

Penney was born on 24 June 1909 in Gibraltar, where his father was stationed with the British army. He was a brilliant student at Imperial College, London, and published his first paper at the age of 20. He worked with Ralph de Laer Kronig, partly in London, partly in Groningen, the Netherlands, and together they developed the "Kronig-Penney

William George Penney



LIGHT MEASUREMENT

SYSTEMS

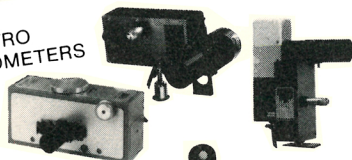
RADIOMETERS



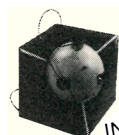
UV CURING
RADIOMETERS



SPECTRO
RADIOMETERS



PHOTOMETERS
LASER POWER METERS



INTEGRATING SPHERES

APPLICATIONS

- UNDERWATER/
ENVIRONMENTAL
- LASER POWER
- PHOTOMETRY
- PHOTORESIST
- PHOTOTHERAPY
- RADIOMETRY
- TRANSMISSION
REFLECTANCE
- UV CURING
- UV HAZARDS

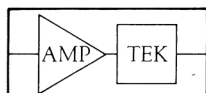


**international
light inc.**

17 GRAF ROAD
NEWBURYPORT, MA 01950 U.S.A.
■ TEL. 508-465-5923
■ FAX 508-462-0759
■ TELEX 94-7135

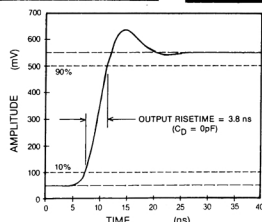
ASK FOR ALL NEW
LIGHT MEASUREMENT CATALOG

Circle number 123 on Reader Service Card



CHARGE SENSITIVE PREAMPLIFIER

A250

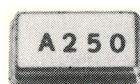


RUN SILENT — RUN FAST!!!

**A NEW STATE-OF-THE-ART
EXTERNAL FET**

FET CAN BE COOLED

NOISE: < 100e-RMS (Room Temp.)
< 20e-RMS (Cooled FET)
POWER: 19 mW typical
SLEW RATE: > 475 V/μs
GAIN-BANDWIDTH f_T > 1.5 GHz



If you are using: Solid State Detectors,
Proportional counters, Photodiodes,
PM tubes, CEMS or MCPs and want the
best performance, try an AMPTEK
CHARGE SENSITIVE PREAMPLIFIER

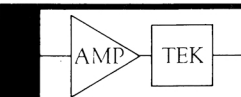
Send for Complete Catalog

Features:

Low noise
(less than 100 electrons RMS)
Low power
(5 milliwatts)
Small size
(Hybrids)
High Reliability
Radiation hardened
(as high as 10^4 Rads)
One year warranty

Applications:

Aerospace
Portable Instrumentation
Nuclear Plant
Monitoring
Imaging
Research Experiments
Medical and Nuclear
Electronics
Electro-Optical
Systems and others.



AMPTEK INC.

6 DE ANGELO DRIVE, BEDFORD, MA 01730 U.S.A. (617) 275-2242

AUSTRALIA: Austeknis PTY Ltd, Kingswood 2763533; **AUSTRIA:** Item Beratung, Vienna 975958; **BELGIUM:** Landre Intechmij, Aartselaar 8875382; **BRAZIL:** Domex Comercio Exterior Ltda, Sao Jose Dos Campos-SP 234235; **DENMARK:** Eltime, Slangerup 780303; **ENGLAND:** Teknis Ltd., Crowthorne, Berkshire 780022; **FRANCE:** Leversan, Rousset, 42290019; **GERMANY:** Teknis & Co. Sauerlach, 81049543; **HONG KONG:** Idealand Electronics Ltd, Kowloon, 7443516-9; **INDIA:** Bakubhai Ambalal Bombay 6323303; **ISRAEL:** Givon Agencies Ltd, Tel Aviv, 5612171; **ITALY:** C.I.E.R. Roma 856814; **JAPAN:** Jepico, Tokyo 3480623; **KOREA:** Hongwood International, Seoul, 5551010; **NETHERLANDS:** Hollinda B.V. The Hague 512801; **NORWAY:** Ingenior Harald Benestad A/S, Lierskogen 850295; **PAKISTAN:** Fabricon, Karachi 412266; **PHILIPPINES:** QV Philippines Co. Ltd Metro Manila, 8193365.

Circle number 124 on Reader Service Card

model," a solvable model for the motion of electrons in periodic fields. After two years at the University of Wisconsin under John H. Van Vleck on a Commonwealth Fund fellowship, he spent three years in Cambridge, collaborating with J. E. Lennard-Jones, under whose influence Penney's interests turned from crystalline fields to molecules. Penney made many important contributions to theoretical chemistry while at Cambridge, and he continued this work when he returned to Imperial College as an assistant professor.

On the outbreak of war in 1939, Penney started work for the British Admiralty and the Home Office on the structure and effect of blast waves. This work led to his being invited in 1944 to Los Alamos as a member of the British team participating in the Manhattan Project. Soon after his arrival he gave a talk about the effect of blast waves on people, including many gruesome details to which his American audience was not accustomed. He presented all this with his usual cheerful manner, and so acquired for a time the sobriquet "the smiling killer." Penney soon impressed people at Los Alamos with his expertise and ability. I remember the brilliantly simple method he used to estimate the intensity of the blast wave at the Trinity test at Alamogordo. He had some wooden boxes prepared with circular holes of various sizes, covered with paper. The blast would puncture the paper covering the larger holes but not the smaller ones, and by noting the size of the largest holes still intact, one could find the strength of the wave.

On his return to England after the war, he was appointed chief superintendent of armaments research in the Ministry of Supply. When the government under Clement Attlee decided to start developing nuclear weapons, Penney was put in charge. He was the only member of his group who had experience in nuclear weapons work. Since the US McMahon Act of 1946 prohibited exchange of information on nuclear matters, Penney, with his Los Alamos experiences, carried the sole responsibility for the development of the British A-bombs—a responsibility he discharged brilliantly. In a short time he built up the Atomic Weapons Research Establishment at Aldermaston, which contained research and production facilities.

Leading this project required not only scientific brilliance but firmness of purpose and ability to handle people; Penney proved an outstanding success in these respects. Quiet and

CRYOGENICS from

Janis

The New Super Tran-B Continuous Flow CRYOSTAT

- Highest Efficiency
- Lowest Ultimate Temperature
- Simplest Operating Turnkey System



Applications in Superconducting Transitions, U.H.V., Device and Wafer Characterization studies. Also DLTS, X-ray, Mössbauer, FT-IR and Visible Spectroscopy.

JANIS RESEARCH CO., INC.

2 Jewel Drive, P.O. Box 696
Wilmington, MA 01887 U.S.A.

Tel: (508) 657-8750
Fax: (508) 658-0349
Telex: 200079

soft-spoken, patient and always cheerful, shunning publicity, and with an exceptional ability to explain complicated matters clearly and simply, he became popular with his staff. The first atomic bomb produced by his team was successfully tested in 1952. It led eventually to a hydrogen bomb in 1957.

Penney gradually acquired broader responsibilities for the United Kingdom Atomic Energy Authority, and became its chairman in 1964. He served in that post until 1967, when he accepted an appointment as head of Imperial College. His open, informal manner gained him people's confidence also in the academic sphere, and in 1968, when most universities had violent student unrest, Penney's influence preserved peace at Imperial College. He retired in 1973.

At hearings of an Australian Royal Commission in 1985, it was suggested that the health of Australian aborigines had been damaged by British nuclear weapons tests. Though the allegation was not supported by the commission, Penney was deeply hurt, because he had taken great trouble to avoid any risks to the local population or the test staff.

RUDOLF PEIERLS

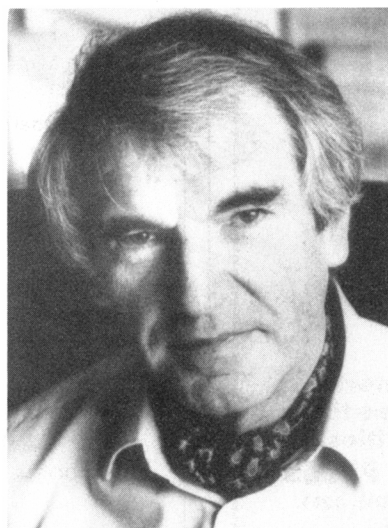
*Nuclear Physics Laboratory
Oxford, England*

Edgar Lüscher

Edgar Lüscher, professor of physics at the Technical University of Munich, passed away on 6 January 1990 at the age of 64.

Lüscher was born in Switzerland and studied at the ETH Zürich, where his advisers were Wolfgang Pauli and Paul Scherrer. After graduation in

Edgar Lüscher



1955 and habilitation at the University of Lausanne, Lüscher worked for a short time in industry. In 1959 he became a faculty member at the University of Illinois at Urbana-Champaign. In 1964 he moved to Munich, thus beginning an association with the Technical University of Munich that was to last over 25 years. Beginning in 1966 until his death he was also the director of the Office for Inspection of Technical Systems of the State of Bavaria.

Lüscher was an outstanding personality and an admirable teacher, adviser and colleague. His scientific work covered atomic physics, condensed matter physics and biological physics. In recent years he was fascinated by complex and disordered systems, and he became an advocate of nonlinear dynamics research.

As head of the Institute E13 at the Technical University he guided students while allowing them to develop their own ideas. The cornerstone of his philosophy was to enhance interdisciplinary contacts. He organized conferences, international summer schools and seminars, and he served as head of the metals division of the European Physical Society. In the classroom, Lüscher's lessons in experimental physics were very popular because of his excellent demonstrations and humor. From these lectures originated his widely used German textbook, *Experimentalphysik* (BI-Verlag Mannheim, 1967). He also ran seminars on applied physics, at which industrial physicists talked about their jobs. As a result of these seminars, many students found employment in industry.

Lüscher had the talent to explain physics to a broad audience. He reestablished the well-known "Professor Auer Lectures" of the Deutsches Museum, created numerous shows for radio and TV, and founded the scientific training program for high school teachers in Bavaria. His caring personality never failed to create the friendly atmosphere that fosters fruitful discussions.

HANS FRAUENFELDER

ALFRED HUBLER

*University of Illinois
Urbana, Illinois*

WALTER SCHIRMACHER

*Technische Universität
Munich, Germany*

J. Gibson Winans

J. Gibson Winans, a professor emeritus of physics at the State University of New York at Buffalo, died on 1 January 1990 of a massive heart

Circle number 127 on Reader Service Card