

STOP BAD BREATH IN VACUUM SYSTEMS

VacIon® Pumps are 12 ways better

1. No pump fluids needed, so none can get into the system. 2. No refrigerated baffle or trap required. 3. Optional internal bakeout heaters can be supplied for extra-rapid cycling, lower pressures. 4. Not damaged by sudden exposure to atmosphere. 5. You read pressure directly from the pump control unit. 6. Reach and maintain pressures below 10-10 torr. 7. Holds vacuum in event of power failure. 8. No moving parts; no noise or vibration. 9. No continuous forepumping needed. 10. Operates in any position. 11. Withstands high temperature. 12. Unlimited pump life.

We have 36 different models available, in pumping speeds from .15 to 6500 liters per second. Surely, with all these sizes and advantages, we should be able to sell you at least one VacIon Pump. Write for "The Breathless Story of the VacIon Pump." It's the kind of serious reading we've all been meaning to get around to.



VACUUM PRODUCTS DIVISION

MEETINGS

AIP Placement Service

The American Institute of Physics will again conduct a placement register during the combined meeting this month of the American Physical Society and the American Association of Physics Teachers in New York City. The register will be located on the second floor of the Statler Hilton Hotel from January 22-25.

Undergraduate students of physics in their senior year who are seeking permanent employment should address inquiries to the Placement Service, AIP, 335 East 45th Street, New York 17, N. Y. It is not necessary to be present at the meeting to use this service.

Elementary Physics Education

The American Association of Physics Teachers has scheduled a symposium on physics in the elementary grades, to be held during the annual joint meeting with the American Physical Society that takes place in New York City this month. The symposium will take the form of a series of 15- to 30-minute talks as listed below:

Wallace R. Brode, Physical Science in the Early Elementary School.

John K. Wood, Elementary Science in the First Grade.

James H. Smith, The Role of Physics in Science Teaching.

Alexander Calandra, An Escalator Method for Science Curriculum Revision.

Robert Karplus, One Physicist Looks at Science Education.

David Hawkins, Laboratory Science in the Elementary School.

Inquiries regarding the symposium should be sent to Professor Owen Chamberlain, Department of Physics, University of California, Berkeley 4, Calif.

Solid-State Circuitry

The University of Pennsylvania and the Institute of Electrical and Electronics Engineers have announced plans for the eleventh annual Solid-State Circuits Conference in Philadelphia, which is to be held from February 19 to 21 at the University's campus and at the Sheraton Hotel.

The meeting will cover (1) design techniques, (2) improvements (stability, reliability, bandwidth, noise, gain, and interference), (3) integrated circuits, (4) data storage and processing, (5) microwave amplification, oscillation, and conversion, (6) design for radiation and other adverse environments, (7) optoelectronics (signal generation, processing, control, and detection), (8) applications of solidstate bulk interaction phenomena, (9) new devices and device characterization, (10) cryogenics, (11) maser and laser techniques, (12) solid-state sensors, (13) minimum power devices and circuits, and (14) techniques for power generation, conversion, and control.

Inquiries should be addressed to the Institute of Electrical and Electronics Engineers, Box A, Lenox Hill Station, New York 21, N.Y.

APS Topical Conferences

Three meetings—on exploding wires, on ionized gases, and on correlations of nuclear particles—are to be held this year as topical conferences of the American Physical Society.

An Air Force Cambridge Research Laboratories conference on the exploding wire phenomenon will meet March 10 to 12 in Boston on the theory and uses of exploding wires, foils, films, and other conductors. The abstract deadline for this meeting is past, but abstracts of the papers that make up the program will appear in some future APS Bulletin. Inquiries should be addressed to W. G. Chace, Air Force Cambridge Research Laboratories, CRO, Hanscom Field, Bedford, Mass.

The seventeenth Gaseous Electronics Conference, under the sponsorship of the US Army Electronics Research and Development Laboratory, will be held at the Shelburne Hotel in Atlantic City. Covering the basic atomic processes and phenomena associated with the physics of ionized gases, the meeting will not accept papers on engineering applications or specific devices. Abstracts (deadline August 21) and inquiries should be directed to Dr.

GHT SOURCE. High energy disnarge lamp • Hinteregger type • ow-through gas system • handles 000 watts of energy continuously, up 5 8,000 watts intermittently • water nd forced air cooled.

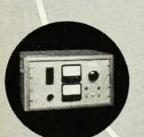


DUAL POSITION DETECTOR. Two position mount simplifies reflectance, fluorescence or absorption studies • includes high sensitivity photomultiplier tube.



DETECTOR. Vacuum mounted • high sensitivity photomultiplier tube mounted external to vacuum • detects radiation through a wavelength range from 500A to 6,000A.





HALF METER OR ONE METER VACUUM U. V. SCANNING MONO-CHROMATOR, Seya-Namioka type. This table or console model, with standard equipment including grating, slit assemblies, scanning drive, pumps and gauges, is designed and constructed to work the wavelength range from 500A to 6,000A.



DETECTOR ELECTRONIC SYSTEM. One package contains regulated variable high voltage DC power supply • linear electrometer with bucking current source • strip chart recorder (0.4) • remote control panel.

POWER SUPPLY. High voltage dual mode AC power supply • for use with light source • operated as Michigan type, air gap controlled spark or as an AC arc.

FILM HOLDER. Daylight loaded into spectrometer • interchangeable with standard slit assembly • uses 35mm film • covers approximately 1,700A in one exposure.



for Complete Vacuum U.V. Research

a Complete McPherson Vacuum U.V. Laboratory, with perfectly matched instrument and accessories for critical scientific studies, is available on a commercial basis, at moderate prices. With a wide range of scanning monochromators to select from—all with provision for modification through standardized McPherson equipment—instrumentation can be set up for almost any vacuum ultraviolet experiment. Precision optical, mechanical and electronic systems are combined in attractive, compact units, each one designed, factory assembled and adjusted for compatibility. A letter or call to McPherson will bring full details on how components from the industry's most complete line can be mated, or custom instruments developed, to give you the exact laboratory you need to fulfill your vacuum U.V. research requirements.





Sol Schneider, US Army Electronics Research and Development Laboratory, Fort Monmouth, N. J.

An international conference on correlations of particles emitted in nuclear reactions will take place October 15 to 17 in Gatlinburg, Tenn. Emphasizing the correlations (in energy and in angle) of emitted particles, the conference will be concerned with experimental and theoretical investigations of nuclear reactions that yield more than two bodies in the final state. Abstracts, due by September 1, should be sent to Alexander Zucker, Oak Ridge National Laboratory, PO Box X, Oak Ridge, Tenn. Summaries, 1500 words, with up to four figures, of contributed papers are to appear in the conference proceedings, and must be received by October 17. Room reservations should be made through Mr. Tom Woods, Manager, Mountain View Hotel, Gatlinburg, Tenn.

Acceptance as an American Physical Society Topical Conference means that abstracts of the papers presented at the conference will ultimately appear in the Society's *Bulletin*. Therefore, the regulations regarding the preparations of abstracts which appear in every issue of the *Bulletin* must be absolutely adhered to for every contributed paper.

OSA

The Optical Society of America will hold its spring meeting in Washington, D. C., April 1 to 3. Contributed papers for which the abstract deadline is January 17, are solicited from all areas of the field of optics. The required abstract forms may be obtained from the Society's executive secretary in Washington.

Other features of the meeting will include the presentation of the 1964 Adolph Lomb Medal to Gordon Hall Spencer and an invited program consisting of a special symposium on physiological hazards of laser radiation, and papers on geophysical problems, lasers, coherence, nonlinear optics, optical techniques in information-processing systems, stimulated Raman radiation, and special topics on frontiers of atomic physics.

All correspondence should be addressed to Dr. Mary E. Warga, Ex-

ecutive Secretary, Optical Society of America, 1155 Sixteenth Street, N. W., Washington, D. C.

Photography and Radiation

A three-day symposium on the photographic aspects of ionizing radiation will be sponsored by the Royal Photographic Society at the Clarendon Laboratory, University of Oxford, April 15 to 17.

The meeting will cover fundamental photographic theory, including latentimage formation, x-ray reciprocity failure, and density variation with exposure temperatures at low radiation levels; photographic dosimetry, including beta rays, mixed radiations, automation, the new British film badge, finger films, etc.; ionizing radiation in space, particularly solar x-rays and absolute calibration of photographic emulsions exposed to soft x-rays; and medical and industrial radiography, including image quality, information theory, definition, etc. There will also be some consideration of technology.

Further information can be obtained from G. J. Rimes, Science Committee, Royal Photographic Society, 16 Princes Gate, Kensington, London, S. W. 7, England.

AMS Spring Meeting

The American Meteorological Society and the American Geophysical Union's Section of Meteorology will hold their annual joint spring meeting in Washington, D. C., from April 21 to April 24.

Titles and abstracts should be sent by January 6 to Frederick G. Shuman, U.S. Weather Bureau, 24th and M Streets, NW, National Meteorological Center, Washington, D. C.

IEEE

Cosponsored this year by the Instrument Society of America, the Region 6 annual conference of the Institute of Electrical and Electronics Engineers will take place in Salt Lake City from April 29 to May 1.

Papers are solicited in the following and related fields: electrical power, including systems, power reactors, control communications, power for air and

SIDE-LOOKING RADAR SYSTEMS ANALYSTS

New programs at HUGHES are generating opportunities for Systems Analysts experienced in high-resolution data gathering, data transfer and data processing systems. Openings exist for Systems Engineers, Mathematicians and Physicists qualified in synthetic array radars, optical, and other data collection systems (IR, Electro-Optical, SIGINT and others). Assignments include:

Senior Systems Scientist with 20 years' electronic systems experience—at least 10 years relevant to side-looking radar systems. Applicants will be considered for important program management responsibilities. M. S. or Ph. D. degree required.

Senior Systems Analysts with 10 years' electronic systems experience—at least 5 years relevant to high-resolution systems pre-design and evaluation. Applicants will be considered for assignments in concept formulation; single and multi-sensor applications; data transmission, processing and interpretation; systems integration and performance evaluation, M. S. or Ph. D. required.

Systems Analysts with 5 years' experience in: detection of signals in noise, optimum filter theory, nonlinear signal processing, information theory, MTI and doppler systems analysis. B. S. or M. S. required.

Please airmail your resume to:

MR. ROBERT A. MARTIN
Head of Employment
Hughes Aerospace Divisions
11940 W. Jefferson Blvd.
Culver City 99, California

Creating a new world with electronics

HUGHES

AEROSPACE DIVISIONS

U. S. CITIZENSHIP REQUIRED

An equal opportunity employer.









