

NEW SCINTILLATION DETECTORS

- NE810 Alpha Particle Detector, Consisting of .0005" sheet of plastic phosphor NE102 on a clear plastic base. This detector provides fast decay time, low gamma sensitivity and modest resolution.
- NE812 Hollow Plastic Scintillator for Beta Ray Spectroscopy and for multiple tracer studies of Beta emitters.
- NE813 Gamma Flow Detector for continuous monitoring of gamma effluents in aqueous or organic solutions.
- NE219 Liquid Scintillator for Beta counting of filter paper chromatograms and direct counting on filter paper.

Other products include Plastic Phosphor NE102 fast and slow neutron detectors, and loaded liquid scintillators.

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WANTED

A Physicist to set up demonstrations and to appear on camera in a series of fifteen science films to be made for fifth and sixth grade children. Starting date August 1, 1960. Salary Open. Contact box number 760B. Physics Today, 335 East 45th St., New York 17, N. Y.

can Chemical Society, held in Cleveland last April. Dr. Brode, who was honored for "his distinguished services to chemistry as a teacher, in research, in administration, as a contributor to the development of chemistry by his many activities in many professional societies, and as a public servant", is editor of the *Journal of the Optical Society of America*, president-elect of the Optical Society, and a member of the Governing Board of the American Institute of Physics. A member of the Chemical Society for 37 years, he has been a member of the ACS Board of Directors since 1951.

The British journal, *Research*, is again offering its Waverley Gold Medal and a prize of £100 for the best 3000-word essay describing a new scientific project or practical development, including an outline of the scientific background, experimental results, and potential industrial applications. A second prize of £50 will also be awarded, and a special £50 prize will be given for the best entry from a competitor who, on July 31, 1960, is not yet 30 years of age. The contest is open to persons who have been actively engaged in scientific work in the period January 1 to July 31 of this year. The journal is also introducing a new "Application in Industry Essay Competition" (with a first prize of £50 and a second prize of £30) which is open to practicing scientists under the age of 30. They may choose any new idea, concept, or experimental result put forward in the recognized scientific literature in the last two years and discuss in approximately 5000 words its potential commercial exploitation in the next decade. Entries to both competitions should be typewritten (double spaced) and must be submitted in English. Names should not be written on the essays. The title of the paper and the author's name, present occupation, technical qualifications, and age (if under thirty) should be written on a separate sheet and attached to the essay. Entries must reach The Editor, *Research*, 4/5 Bell Yard, London, W. C. 2, England, not later than July 31.

Grants and Fellowships

The National Science Foundation has announced that applications are now being accepted under two of its fellowship programs. Some 75 senior postdoctoral fellowships are available to US citizens with special aptitude for advanced training who have held the doctoral degree for at least 5 years or have equivalent training and experience. Awards will be made on the basis of ability as indicated by letters of recommendation and other evidences of scientific attainment. Applications will be evaluated by panels of scientists appointed by the National Academy of Sciences—National Research Council. The second group of awards, the science faculty fellowships, are intended for college teachers of science, mathematics, or engineering who wish to improve their competence as teachers. The fellowships are open to US citizens holding the baccalaureate degree who have demonstrated aptitude for sci-

Physicists...

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RESEARCH AND DEVELOPMENT IN SEMICONDUCTORS

Pacific Semiconductors, Inc. recently has made a number of notable accomplishments in the field of semiconductors, including a range of high frequency power transistors, micro miniaturized diodes and transistors. For example, the PSI high frequency transistor line ranges from the largest (100 watts at 5 mc) to the smallest silicon mesa transistors available.

These accomplishments have created important new opportunities at PSI. In addition, PSI is broadening its range of activities to include such new fields as solid state circuits.

The nature of the semiconductor field has created an unusual need and opportunity for physicists at PSI. We are seeking highly competent scientists who have an interest in solid state research and development.

Experience in the field is highly desirable. However, if you lack such experience but believe you have unusual ability and a desire for stimulating and challenging work, we would like to hear from you.

SURFACE RESEARCH Basic research on semiconductor surfaces with the ultimate objective of increasing the state of understanding of semiconductor surface phenomena. Whatever theoretical and experimental approaches are required in order to accomplish this goal will be employed. An important part of this objective will be the correlation of surface film composition and structure with the physical model of the surface. A surface design theory of fundamental value might reasonably be expected to be an important outgrowth of this endeavor.

SOLID STATE DIFFUSION Investigation and improvement of solid state diffusion processes. This includes fundamental work on diffusion mechanisms and the growth and control of oxide layers at the surface. Some or all of the following experience is highly desirable: High furnace temperature operation, gaseous purge systems, light interference measurement techniques.

DEVICE PHYSICS Balanced experimental and theoretical research on new processes and new devices of advanced types. Read and understand semiconductor literature. Work with chemists, metallurgists and electronic engineers. Supervise experiments involving advanced laboratory measurement techniques, including infrared, X-ray and electrical. Diffusion, surfaces, crystal imperfections, device theory, process theory.

SEMICONDUCTOR MATERIALS — INTERMETALLIC COMPOUNDS Physical chemists or physicists to work in preparation and purification of semiconductor elements and intermetallic compounds. The work also may include the study of decomposition reactions of silanes and halides of silicon to form single crystal deposits of pure silicon. Interest in infrared absorption studies desirable.

These are only a few of the many fine opportunities available at PSI. If you have an M.S. or Ph.D. degree in physics or a B.S. degree and equivalent experience in semiconductor physics, write today in confidence to:

DR. J. W. PETERSON, *Director, Research and Development*
or MR. LARRY LONG, *Head, Technical Staff Placement*



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ence teaching and advanced training and have been full-time college faculty members for not less than three academic years. Applicants' qualifications will be evaluated by panels of scientists appointed by the Association of American Colleges and the final selection of approximately 300 fellows will be made by the Foundation. Annual stipends to a maximum of \$12 000 (adjusted to match as closely as feasible the salaried income of the recipients) will be awarded under both programs. Fellows may engage in study and/or research at any appropriate nonprofit institution in the US or abroad. Application materials can be obtained from the Fellowships Section, Division of Scientific Personnel and Education, National Science Foundation, Washington 25, D. C., and must be returned not later than October 10.

In another announcement, the Science Foundation indicated that it has awarded 32 grants totaling \$284 450 to scientists and engineers at colleges, universities, and research institutions for the development of new laboratory apparatus of potentially wide usefulness in the teaching of science, mathematics, and engineering. This is the second series of grants under an experimental program which the Foundation hopes will help bring the research laboratory close to the teaching laboratory through the development of equipment especially designed for use by teachers and students and economically within the reach of schools. Full information about apparatus thus devised is expected to be made available to teachers in the form of reports, articles in professional journals, presentations at professional meetings, etc.

Massachusetts Institute of Technology has received a \$5 million grant from the Alfred P. Sloan Foundation of New York, under a Foundation program begun in 1955 to support basic research in the physical sciences. In announcing the gift, the Foundation's president, Alfred P. Sloan, Jr., specified that the money is to be used for "people as distinguished from projects". The unrestricted nature of the grant will enable MIT to support scholars in "fields of investigation where no one has been before, where no specific end is in sight".

Postdoctoral research fellowships in theoretical physics are being offered by the Theoretical Physics Institute of the University of Alberta to young scientists who have done distinguished work in graduate or postgraduate research. Fellowships carry an initial value of \$6000 with annual increments of \$500, and are tenable for periods up to three years, subject to annual renewal. The Institute also offers special visiting fellowships to distinguished physicists for shorter periods of time. The Institute has, in addition to research fellows, a permanent membership of eight in theoretical physics. It is located in the new physics and mathematics building on the Edmonton campus of the University. Inquiries should be addressed to L. E. H. Trainor, Executive-Secretary, Theoretical Physics Institute, University of Alberta, Edmonton, Canada.