

PUBLISHING NEWS

Graduate Research Specialties

Specialized research activities of graduate physics departments are described in the latest revision of a booklet published by the American Institute of Physics under the title, *Graduate Physics Research Specialties in American Educational Institutions*.

The 1962-63 edition of the booklet includes a list of 217 institutions offering graduate programs, with the subjects of main research interest specified in each case. Also listed are 213 research specialties with reference numbers indicating the schools that offer graduate work in these areas.

The booklet can be obtained without charge from the Public Relations Department, American Institute of Physics, 335 East 45th Street, New York 17, N. Y.

Collected Papers

The Optical Society of America will publish in December a collection of papers on optical pumping and masers, issued in the form of a special supplement to *Applied Optics*. The supplement will contain a selection of articles which have appeared in *Applied Optics*, together with a few papers chosen from the *Journal of the Optical Society of America*, *The Physical Review*, *The Review of Scientific Instruments*, and the *Journal of Applied Physics*. In addition, the collection will contain an up-to-date review article on gas lasers by W. R. Bennett, Jr., of the Bell Telephone Laboratories, and a survey of the entire field by O. S. Heavens of Royal Holloway College, who is serving as feature editor for the issue. Dr. Heavens' survey will also serve to integrate all of the papers republished in the special issue. The collection is priced at \$5 per copy, and orders should be sent to the Optical Society of America, 1155 16th Street, N.W., Washington 6, D. C.

Journals

Volume 1, No. 1 (pages 1-153) of *Space Science Reviews*, a new quarterly review journal, has been published by D. Reidel Publishing Company of Holland. Under an international editorial board headed by editor-in-chief C. de Jager of the Universities of Utrecht and Brussels, the journal intends to publish invited review papers on research "carried out by means of rockets, rocket-propelled vehicles and partly also by means of stratospheric balloons and at observatories on the earth or moon". Except for a limited number of brief papers having the character of "letters to the editor", original research will not be published.

Editorial communications and books for review should

be addressed to Prof. C. de Jager, Servaas Bolwerk 13, Utrecht, Holland. Annual subscriptions (per volume of four issues) are \$42 and should be sent to D. Reidel Publishing Co., P.O. Box 17, Dordrecht, Holland.

Springer-Verlag of Berlin has commenced publication of a new international journal, *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete* (Journal of Probability Theory and Related Fields). The new periodical will publish papers on probability and such subjects as operations research, mathematical statistics, information theory, and econometrics. Manuscripts will be accepted in English, French, or German.

The chief editor is L. Schmetterer of Vienna. Other members of the editorial board are K. L. Chung of Stanford, R. Fortet of Paris, H. P. Künzi of Zurich, K. Krickeberg of Heidelberg, J. Neyman of Berkeley, A. Rényi of Budapest, and H. Richter of Munich. The journal will appear irregularly, and issues will be individually priced. Further information can be obtained from the publisher at Heidelberger Platz 3, Berlin-Wilmersdorf, Germany.

Bibliographies

Two newly compiled bibliographies are available from the Office of Technical Services, US Department of Commerce, Washington 25, D. C.

Bibliography On Auroral Radio Wave Propagation (PB 161 629; \$2.75), compiled by W. Nupen of the National Bureau of Standards, contains some 300 abstracts or titles from the literature on the subject published during the period 1893-1961.

Lasers, A Bibliography (UCRL-6769; 50¢), compiled by C. J. Wensrich of the University of California, contains 129 references from the journal literature on lasers for the period 1958-1962.

Some 360 references to articles and books on masers over the 1954-1961 period are contained in *Bibliography On Masers*. The publication may be ordered from Becker & Warren, 122 Taylor Road, Oak Ridge, Tenn., for \$2.50.

Under a grant from the National Science Foundation, the Science and Technology Division of the Library of Congress has completed a bibliography of published material descriptive of Soviet scientific and technical activity. Entitled *Soviet Science and Technology: A Bibliography on the State of the Art, 1955-1961*, the 209-page compilation contains some 2000 an-

When two solids touch . . . plastic strain or dislocations?

The engineer would talk of a plastically strained material. The solid state scientist, of dislocations occurring on the atomic level. Here at the General Motors Research Laboratories, we're interested in learning more about the mechanical nature of solids from both points of view.

One of our current investigations into the solid state, for example, is aimed at fitting together an atomic picture of what happens when a solid is deformed by a contact force. Simple case: a sapphire ball rolling across a soft single crystal of copper.

For various directions of roll, striking differences in deformation, hardness, and rolling force have been measured and related to the crystal's atomic slip planes. Our work has progressed from this macroscopic correlation to a three-dimensional study of dislocation arrangement. Encouragingly, experimental results have agreed with theoretical predictions as to how specific crystal dislocations interact to cause work hardening—a phenomenon that sharply limits further damage to the material.

A fundamental understanding of mechanical properties may some day help man improve a number of practical contact processes . . . processes where two solids touch. Rolling. Stamping. Pressing. Wear and friction of moving parts. General Motors is seeking this understanding with research in depth.

General Motors Research Laboratories

Warren, Michigan



Ball track across copper crystal is narrower, harder and has higher friction in a cube diagonal direction (right interferogram) than in a cube edge direction.

PHYSICISTS

Opportunities to conduct experimental and basic research in the fields of

MAGNETOHYDRODYNAMICS PLASMA PHYSICS

are being offered to Ph.D.'s in Physics by Plasmadyne Corporation, a small research and manufacturing company where professional competence and individual initiative are recognized and strongly encouraged.

Our company is located in beautiful Orange County in Southern California within easy driving distance to Los Angeles but outside of the busy metropolitan area.

Please submit resume in confidence to:

A. M. Hartwick
PLASMADYNE CORPORATION
a Giannini Scientific Company
3839 South Main Street
Santa Ana, California

An Equal Opportunity Employer

NUCLEAR PHYSICIST

For our expanding radiation detector program involving sophisticated radiation detection problems.

To plan, carry out, and evaluate tests on the performance of scintillation detectors.

To conduct basic physics research on the physical properties of scintillation materials.

Requires:

B.S. with related experience or M.S. with nuclear or solid state courses.

and

A working knowledge of pulse electronics desired.

Laboratories excellently equipped.

Metropolitan Cleveland location.

Adjacent to the educational and cultural center.

Send resume and salary requirements
in confidence to:

Personnel Department
THE HARSHAW CHEMICAL COMPANY
1945 East 97th St., Cleveland 6, Ohio
An Equal Opportunity Employer

notated entries for articles and monographs from Soviet-bloc and Western sources. References fall into four main categories: surveys, bibliographies, reports of visits to Soviet scientific and industrial institutions, and articles that describe Soviet programs in particular fields. Most of the items listed are available in the Library of Congress, and call numbers and special identifying numbers have been included when known. Only those titles in Soviet-bloc languages have been translated, and partial or complete translation of the text is indicated by a note accompanying the reference. Copies of the book may be obtained for \$1 each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

The National Science Foundation has also issued a revised edition of the report entitled *Providing US Scientists With Soviet Science Information*. Prepared by Boris I. Gorokhoff of the Massachusetts Institute of Technology, the current guide provides data on Soviet primary and secondary publications and their sources, both in the United States and the Soviet Union. Information is given on English translations of abstracts, bibliographies, and reviews, and on material available in French, German, and other languages. The 46-page publication can be obtained, free of charge, by writing to the Publications Office, National Science Foundation, Washington 25, D. C.

Handbook

The 44th edition of the *Handbook of Chemistry and Physics* has been issued by the Chemical Rubber Publishing Co. New features include a table of physical and chemical properties of the rare-earth metals and tables incorporating the definition of atomic mass based on the carbon-12 nuclide chart (general physical constants, atomic weights of elements). The 3540-page handbook also contains tables on superconducting elements, binary and ternary azeotropes, properties of electrodes used for determination of pH, etc. Definitions and formulas and data on bond lengths between carbon and other elements have been revised. The publication is priced at \$12 and can be ordered from the Chemical Rubber Publishing Co., Distributors, Dept. H, 2310 Superior Ave., Cleveland 14, Ohio.

Publishers

The Macmillan Company of New York City has been granted distribution rights in the Western Hemisphere for all scientific, technical, and reference books published by Pergamon Press Ltd., Oxford, England, and its American affiliate, Pergamon Press, Inc., New York. The books will be marketed under the Pergamon Press name through Macmillan's library, college, and retail bookstore selling organizations. Distribution of Pergamon's scientific research journals is not affected by the agreement; they will continue to be made available through the firm's New York office.