

NEW CORPORATE BASIC RESEARCH LABORATORY

Princeton,
New Jersey

Needs Physicist of proven creative ability seeking to conduct basic research in new fields of technology. Considerable freedom in selection and organization of projects will be encouraged. Ph.D. or equivalent from accredited university with five to ten years of industrial or academic research experience required. Experience in solid state, electronics, mechanics and optics desirable.

Send resumes to:

Dr. Lenard P. Gotsch,
Director

Princeton Laboratory
American Can Company
P. O. Box 50
Princeton, New Jersey

Replies will be kept in strict confidence.

An Equal Opportunity Employer

CALENDAR

Meeting announcements intended for inclusion in the calendar should be submitted at least eight weeks before meetings are to take place. Send notices to Physics Today, 335 East 45th Street, New York 17, N.Y.

♦ new announcement

♦ change from previous listing

July 1964

- 14-17 Rarefied Gas Dynamics (U. of Toronto, Canada) spons'd by Air Force Office of Scientific Research, Office of Naval Research, Nat'l Aeronautics and Space Administration, U. of Toronto: *Symp. Secretary, Inst. for Aerospace Studies, U. of Toronto, Toronto 5, Canada* (See May PT, p. 115)
- 20-22 Magnetic Resonance in Biological Systems (American Academy of Arts and Sciences, Boston): *R. G. Shulman, Bell Telephone Labs, Murray Hill, N.J.* (See Mar. PT, p. 94)
- 20-24 • Nuclear Radiation Effects (Seattle) spons'd by Inst. of Electrical and Electronics Engrs., U. of Wash.: *J. C. Mitchell, Unit 2-53010, Ling-Temco-Vought, Inc., PO Box 5907, Dallas, Tex.*
- 26-31 **American Crystallographic Association** (Montana State College): *B. Post, Brooklyn Polytechnic Inst., Brooklyn 1, N.Y.*

August 1964

- 3-7 • Instrumentation Science Research (Geneva, N. Y.) spons'd by Instrument Soc. of America: *H. S. Kinder, Penn Sheraton Hotel, 530 William Penn Pl., Pittsburgh, Pa.*
- 3-8 Latin-American Council for Cosmic Radiation and Space Physics (Buenos Aires, Argentina), with regional symp. on IQSY: *J. G. Roederer, Facultad de Ciencias Exactas y Naturales, Perú 272, Buenos Aires, Argentina* (See Mar. PT, p. 92)
- 4-10 Reactivity of Solids (Munich) spons'd by Internat'l Union of Pure and Applied Physics, Internat'l Union of Pure and Applied Chemistry: *R. Morf, F. Hoffmann-La Roche et Cie., Basel 2, Switzerland*
- 5-7 Sonic Investigations on Internal Damping in Solids (London) spons'd by Acoustics Group of Inst. of Physics and Physical Soc.: *Administrative Assistant, IPPS, 47 Belgrave Sq., London, S. W. 1, England*
- 10-15 Atmospheric Radiation (Leningrad, USSR) spons'd by Internat'l Radiation Commission of Internat'l Association of Meteorology and Atmospheric Physics: *J. London, U. of Colo., Boulder, Colo.* (See Apr. PT, p. 102)
- 12-14 Application of X-Ray Analysis (Denver) spons'd by Denver Research Inst. Metallurgy Div.: *W. M. Mueller, DRI, U. of Denver, Denver, Colo.*

12-14 Ballistic Missile and Space Technology (US Naval Training Center, San Diego, Calif.) spons'd by Air Force Space Systems Div., Ballistic Systems Div.: *Aerospace Corp., Attn: 1964 Symposium Chairman, PO Box 95085, Los Angeles, Calif.*

17-20 Natural Ultralow Frequency Electromagnetic Fields (Boulder, Colo.) spons'd by Nat'l Bureau of Standards' Central Radio Propagation Lab, Nat'l Center for Atmospheric Research: *W. H. Campbell, NBS, Boulder, Colo.* (See Apr. PT, p. 102)

17-21 • Cryogenic Engineering (Philadelphia) spons'd by U. of Pa.: *K. D. Timmerhaus, Ketchum 129, U. of Colo., Boulder, Colo.*

Combustion (Cambridge U.) spons'd by Combustion Inst., Cambridge Physical Chemistry Dept.: *Combustion Inst., 986 Union Trust Bldg., Pittsburgh 19, Pa.* (See Aug. '63 PT, p. 80)

The Role of Simulation in Space Technology (Virginia Polytechnic Inst.) spons'd by Nat'l Science Foundation, Nat'l Aeronautics and Space Administration: *F. J. Mahler, Director, Space Conf., VPI, Blacksburg, Va.* (See Apr. PT, p. 106)

19-25 • Many Body Problem (Novosibirsk): *N. N. Bogolyubov, Scientific Center, Novosibirsk 72, USSR*

20-30 High-Energy Nuclear Physics (Dubna) spons'd by Internat'l Union of Pure and Applied Physics: *D. I. Blokhintsev, Joint Inst. for Nuclear Research, Dubna, USSR*

22-24 History of Astronomy (Hamburg) spons'd by Internat'l Union of the History of Science, Internat'l Astronomical Union: *B. Sticker, Institut für Geschichte der Naturwissenschaften, Universität Hamburg, Hartungstr. 5, 2 Hamburg 13, Germany*

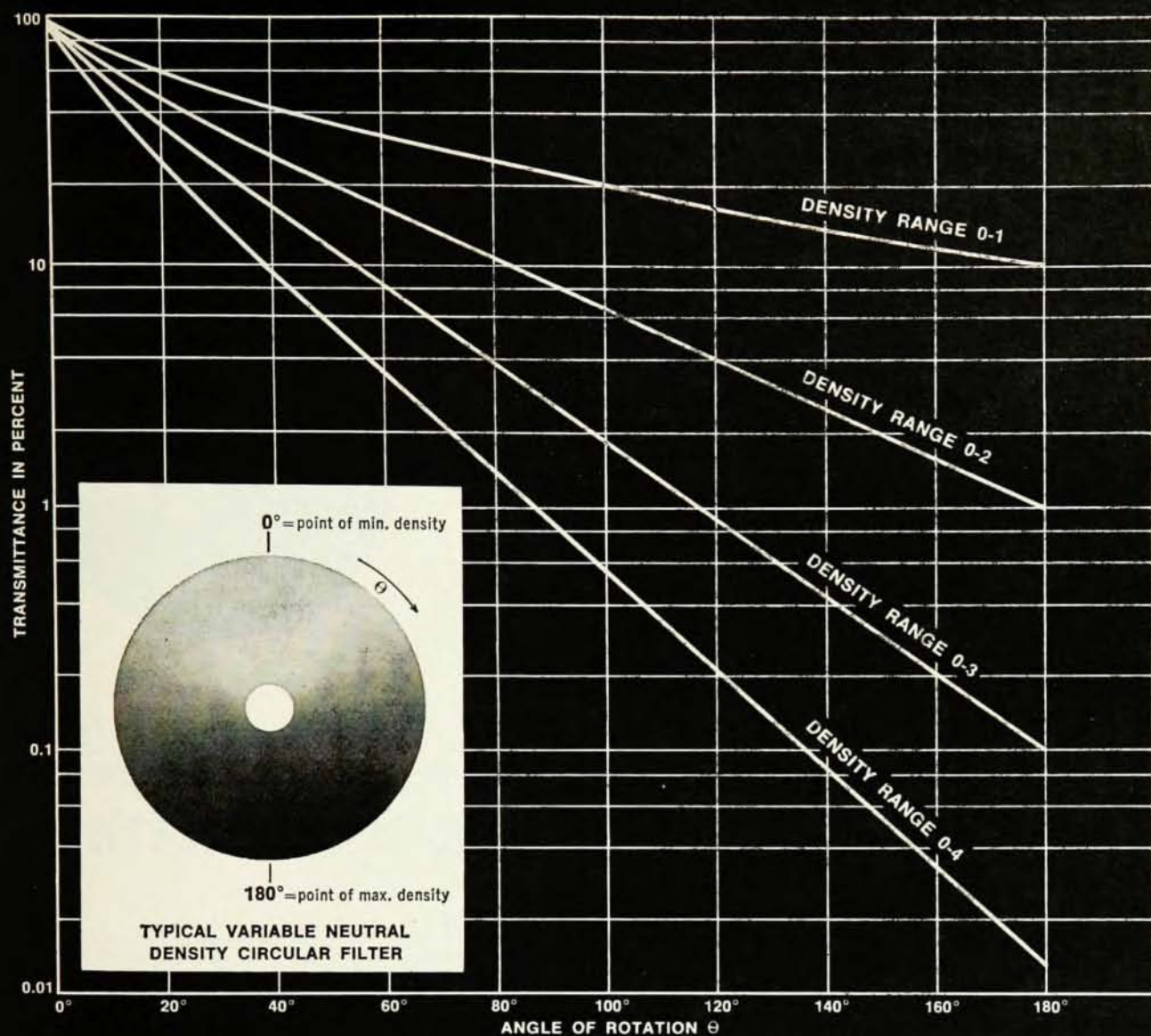
24-25 Interference and Coherence (Sydney) spons'd by Internat'l Commission for Optics, Australian Academy of Science: *W. H. Steel, CSIRO Div. of Physics, City Rd., Chippendale, New S. Wales, Australia*

24-26 Astrodynamics, Guidance, and Control (Los Angeles) spons'd by American Inst. of Aeronautics and Astronautics: *AIAA, 500 Fifth Ave., New York 36, N. Y.*

Mathematical Association of America (U. of Mass., Amherst): *MAA, U. of Buffalo, Buffalo 14, N.Y.*

24-28 International Council of the Aeronautical Sciences (Paris): *J. A. Stemmer, Internat'l Council of Aeronautical Sciences, PO Box 37, Baden, Switzerland*

OCLI VARIABLE NEUTRAL DENSITY CIRCULAR FILTER



LINEARITY OF FOUR DIFFERENT OCLI VARIABLE NEUTRAL DENSITY CIRCULAR FILTERS

Commercial and military engineers who are seeking an extremely durable, lightweight, continuously variable, linear, attenuation filter for experimental purposes will find exactly what they need in OCLI's new Variable Neutral Density Circular Filter.

OCLI Variable Neutral Density Circular Filters

have wide density ranges, from 0 to 1, 2, 3 or 4, as required, and can be provided over a wide spectral range, 0.4 to 30μ , depending on substrate material. Density is a linear function of the angular position Θ . These filters can be cleaned and handled repeatedly without damage. Availability: Sizes from 2.5" to 6" in diameter.

For further information, contact:



OPTICAL COATING LABORATORY, INC.

2789 GIFFEN AVENUE • SANTA ROSA, CALIFORNIA • TELETYPE 707-546-4959 • TELEPHONE 707-545-6440

SCIENTISTS for semiconductor research to work in the fields of...

Injection Lasers, Thin Film Active Devices, Microcircuitry Techniques, Microwave Devices.

Several unusual positions are now available for scientists with experience in semiconductor device technology at either the research or advanced development levels. Selected candidates must be capable of conducting independent research programs in the above areas.

The objectives of these programs encompass an understanding of the basic phenomena underlying device performance, as well as a demonstration of the feasibility of advanced device concepts.

If you have a Ph.D. or M.S. in Physics, Physical Chemistry or Electrical Engineering with at least one year's experience in device studies, you are invited to write to the Research Center.

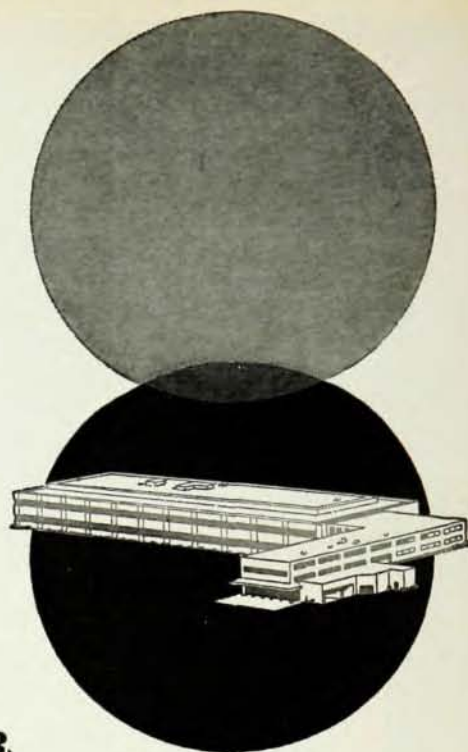
We offer a unique opportunity to qualified individuals to conduct research in a creative scientific environment which encourages the publication of results, in association with many prominent scientists.

For further information, please write Mr. Rodney C. Davis.

SPERRY RAND RESEARCH CENTER

Box 400, Sudbury, Massachusetts

An equal opportunity employer



NUCLEAR SCIENTISTS

EG&G, dynamically active in nuclear science and instrumentation, offers attractive professional opportunities for physicists and engineers in the following areas:

- **PH.D. OR M.S. IN PHYSICS**

Senior particle Physicist with neutron experience or interest.

- **M.S. IN PHYSICS OR ENGINEERING SCIENCE**

Minimum of two years experience on accelerator systems design or applications. Analytically and device inclined to work with experimental group using existing high current 20 Mev electron linear accelerator.

- **PH.D. OR M.S. IN EXPERIMENTAL NUCLEAR PHYSICS**

For work in particle physics, radiation effects or nuclear instrumentation.

As part of our new R&D laboratories, the recently completed Accelerator facility is near the campus of the University of California, Santa Barbara.

Send resume to:

D. B. Hill

Personnel Department

EDGERTON, GERMESHAUSEN & GRIER, INC.

P.O. Box 98, Goleta, California

An Equal Opportunity Employer
U.S. Citizenship Required

PHYSICISTS-SCIENTISTS

KEY PERSONNEL is a National organization devoted exclusively to the selective search for competent careerists among the technical disciplines.

Working closely with clients Coast to Coast, it is our policy to provide a professional service to scientists and engineers, that is ethical, knowledgeable and confidential. Our service is designed to provide YOU with a convenient focal point from which to explore, easily and efficiently, the numerous career opportunities existing anywhere in the U. S.

Our service to you—the individual scientist or engineer—is WITHOUT COST since our search fees are assumed by our organizational clients, who are Industrial, Defense and non-profit organizations engaged in the advancement of the state-of-the-art.

We are currently searching to fill a broad spectrum of positions from semi-junior to General Manager across the entire continent.

If you would like to explore for yourself, our unique approach, write for our confidential summary form or forward a copy of your current résumé as soon as possible:

John F. Wallace
Executive Vice President



KEY PERSONNEL CORP.

218 Tower Bldg.

Baltimore 2, Md.

- 25-27 Association for Computing Machinery (Philadelphia): *H. S. Bright, ACM 1964 Meeting, Philco Computers, Willow Grove, Pa.* (See Feb. PT, p. 92)
- 26-29 Spread F and its Effects on Radio-wave Propagation and Communication (Copenhagen), by invitation, spons'd by Advisory Group for Aeronautical Research and Development (NATO): *AGARD, 64, rue de Varenne, Paris 7, France* (See Apr. PT, p. 106)
- 26-2 Logic, Methodology, and Philosophy of Science (Jerusalem) spons'd by Internat'l Union for History and Philosophy of Science: *Y. Bar-Hillel, Hebrew U., Jerusalem, Israel*
- 26-3 Electron Microscopy (Prague) spons'd by Internat'l Federation of Societies for Electron Microscopy: *Organizing Committee, Albertov 4, Prague 2, Czechoslovakia* (See Oct. '63 PT, p. 110)
- 28-29 Physics of Type II Superconductivity (Cleveland) spons'd by Dept. of Physics, Western Reserve U.: *B. S. Chandrasekhar, Dept. of Physics, Western Reserve U., Cleveland, Ohio*
- 30-4 American Mathematical Society (U. of Mass., Amherst): *AMS, 190 Hope St., Providence, R.I.*
- 30-5 Applied Mechanics (Munich): *Organizations Secretariat, Mechanics Congress, Inst. for Mechanics, Arcisstr. 21, Munich, Germany* (See June '63 PT, p. 112)
- 31-4 Molecular Electronic Spectroscopy (Proctor Academy, Andover, N. H.): *W. G. Parks, Research Conferences, U. of Rhode Island, Kingston, R. I.*
- Low Temperature Physics (Ohio State U., Columbus) spons'd by Internat'l Union of Pure and Applied Physics: *J. G. Daunt, Physics Dept., Ohio State U., Columbus 10, Ohio* (See Apr. PT, p. 102)
- 31-5 Ozone Research and Its Applications to Atmospheric Physics (Albuquerque, N. M.): *H. U. Dütsch, Internat'l Ozone Commission, C/O Nat'l Center for Atmospheric Research, Boulder, Colo.*
- 31-9 The Peaceful Uses of Atomic Energy (Geneva): *Scientific Secretariat, Internat'l Atomic Energy Agency, Kämtner Ring 11, Vienna 1, Austria*
- September 1964**
- 1-4 Aerospace Power Systems (Philadelphia) spons'd by American Inst. of Aeronautics and Astronautics: *AIAA, 500 Fifth Ave., New York 36, N.Y.*
- 15th Alaskan Science Conference (U. of Alaska) spons'd by American Assoc. for Advancement of Science: *J. E. Morrow, U. of Alaska, College, Alaska.*
- 1-5 Nuclear Magnetic Resonance and Relaxation in Solids (Louvain, Belgium) spons'd by Internat'l Union of Pure and Applied Physics, Groupement Ampère, Royal Flemish Academy of Sciences: *L. Van Gerven, Secretary General, 13th Colloque Ampère, Naamsestraat, 61, Louvain, Belgium* (See Feb. PT, p. 95)

- 1-8 Photographic and Spectroscopic Optics (Tokyo and Kyoto) spons'd by Internat'l Commission for Optics, Science Council of Japan, Japanese Soc. of Applied Physics: *H. Kubota, Science Council of Japan, Ueno Park, Tokyo, Japan* (See July '63 PT, p. 78)
- 7-11 Magnetism (U. of Nottingham) spons'd by Internat'l Union of Pure and Applied Physics, British Nat'l Committee for Physics: *Deputy Secretary, IPPS, 47 Belgrave Sq., London, S.W.1, England* (See Nov. '63 PT, p. 112)
- Microwaves, Circuit Theory, and Information Theory (Akasaka Prince Hotel, Tokyo) spons'd by Inst. of Electrical Communication Engrs. of Japan, Science Council of Japan, Internat'l Scientific Radio Union: *T. Utsunomiya, Inst. of Electrical Communication Engrs. of Japan, 2-8 Fujimicho, Chiyoda-ku, Tokyo, Japan* (See Dec. '63 PT, p. 110)
- 7-12 Microwave Tubes (Paris) spons'd by French Vacuum and Electronics Soc.: *Secretariat, 5th Internat'l Congress on Microwave Tubes, PO Box 20, Bagneux, Seine, France*
- XVth International Astronautical Congress (Warsaw): *ASTRONAUT, P.K.i.N., p. 23-18, Warsaw, Poland* (See Apr. PT, p. 104)
- 8-10 Gas Chromatography (Brighton) spons'd by Gas Chromatography Discussion Group: *Symp. Organizing Office, 61 New Cavendish St., London, W.1, England*
- 9-11 Low and Medium Energy Nuclear Physics (U. of Sussex) spons'd by Inst. of Physics and Physical Soc.: *Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1, England* (See Feb. PT, p. 95)
- 9-12 Sunspots (Florence), in connection with 4th centenary of Galileo's birth: *G. Righini, Osservatorio Astrofisico di Arcetri, Florence, Italy*
- 9-14 General Relativity: Problems of Energy and Gravitational Waves (Florence), in connection with 4th centenary of the birth of Galileo: *G. Sestini, Istituto Matematico U. Dini, Viale Morgagni, 67/A, Florence, Italy*
- 14-15 Electron Probe X-Ray Microanalysis (Delft, Holland) spons'd by Inst. of Physics and Physical Soc., French Sous-Commission Microsonde: *Administration Assistant, IPPS, 47 Belgrave Sq., London, S. W. 1, England*
- 14-16 Cosmology (Padua), in connection with 4th centenary of the birth of Galileo: *L. Rosino, Osservatorio Astronomico, Padua, Italy*
- Solar Magnetic Fields and High Resolution Spectroscopy (Rome), in connection with the 4th centenary of the birth of Galileo: *M. Cimino, Osservatorio Astronomico, di Monte Mario, Rome, Italy*
- 14-18 Radio Meteorology (Boulder, Colo.) spons'd by American Meteorological Soc., Nat'l Bureau of Standards, Inter-Union Committee on Radio Meteorology: *J. W. Herbstreit, Central Radio, Propagation Lab, NBS, Boulder, Colo.* (See Mar. PT, p. 96)

If you are looking for a permanent position in industry which offers not only the opportunity for professional advancement but will use your formal training to the fullest extent, we believe you will be interested in our organization. We are now seeking a Ph.D. Theoretical Physicist with experience in computer techniques to conduct a theoretical investigation into the methods of generation and processing of nuclear data. This work involves not only the integration of nuclear detector systems with computers, but also a study of the basic physics and statistics of gaseous, liquid and solid state detectors.

The position offers association with a staff of physicists, chemists and biologists working in interdisciplinary areas, and the opportunity to participate in projects of interest.

Please submit a resume describing education, experience and publications to:

Director of Research

NUCLEAR-CHICAGO CORPORATION

333 East Howard Avenue
Des Plaines, Illinois

Equal Opportunity Employer



NEW! THIN-FILM LASER Q SWITCH

FOR RUBY LASERS

- ☐ Requires no controls
- ☐ Has no moving parts
- ☐ Simple alignment
- ☐ Self-synchronizing
- ☐ Pulses short as 10 nsec
- ☐ Multimegawatt power

The new device consists of an optical glass substrate supporting a thin film of passive absorbent material. Each switch allows up to twenty-five giant pulse shots with a 1/4" ruby.

For information contact:

Beckman & Whitley
A SUBSIDIARY OF TECHNICAL OPERATIONS, INC.
SAN CARLOS, CALIF. 591-8241 CODE 415

from Semi-elements, Inc. your Complete Source

for

- GAS LASER SYSTEMS
- LASER MATERIALS
- LASER DIODES

CRYSTALS—CALCIUM
TUNGSTATE • RUBY
LEAD MOLYBDATE
and many others

INJECTION LASER MATERIALS—

Indium Phosphide
Indium Antimonide
Gallium Phosphide
Gallium Antimonide
Gallium Arsenide

LIGHT MODULATOR CRYSTALS—

AMMONIUM DIHYDROGEN
PHOSPHATE (ADP)
POTASSIUM DIHYDROGEN
PHOSPHATE (KDP)
SODIUM CHLORATE • QUARTZ
TRYGLYCINE SULPHATE
ROCHELLE SALT

LARGE METAL SINGLE CRYSTALS

GOLD • SILVER • PLATINUM • ZINC
CHROMIUM • VANADIUM • TITANIUM
IRIDIUM • RHODIUM • COPPER
ZIRCONIUM • TIN • LEAD • OSMIUM
and many others

WRITE OR
CALL FOR
LITERATURE

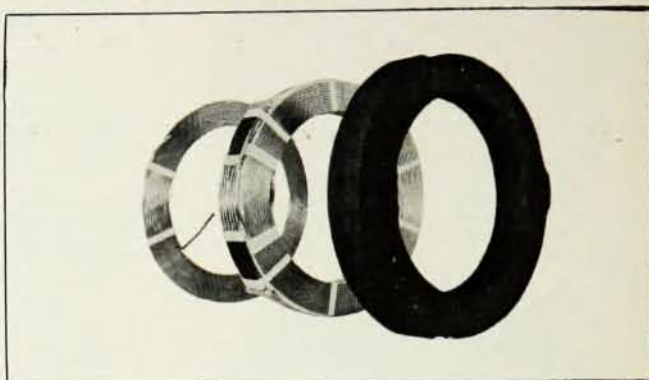


semi-elements, inc.

Saxonburg Boulevard,
Saxonburg, Pa.
Phone: 412-352-1548

Now — from Ling Electronics . . .

A NEW "TOTAL SERVICE" SOURCE FOR CUSTOM- CREATED MAGNET COILS



You set the coil specs —
Ling does the rest. Ling en-
gineers control coil reli-
ability from design through
manufacture.

Let Ling custom-create
your special coils or manu-
facture your present ones.
Write for more information.

Our manufacturing capabilities
include:

- Hollow-conductor coils
- Strip-wound coils
- Foil-wound coils
- Solid-wound coils
- Foil thickness to .040"
- Hollow conductor to 1/2" sq. OD
- IDs from 1/2" to 30"
- ODs to 72"

LTV / **LING ELECTRONICS**
Calidyne Plant
Winchester, Massachusetts

For Sale

SURVEYS, BIBLIOGRAPHIES, SEARCHES OF SOVIET SCIENTIFIC LITERATURE ON

PLASMA, CTR, MHD, MASERS, SUPERSONIC AERODY-
NAMICS, INFRARED, COMPUTERS, AUTOMATIC CON-
TROL, SYSTEMS RELIABILITY, OTHER FIELDS OF
APPLIED MATHEMATICS AND PHYSICS.

Write: SCIRES, INC. Box 19101, Washington, D.C. 20036

Electromechanical Drive Unit* for Mossbauer experiments,
now available from:

Vantson Enterprises,

Box 673, Arcadia, Calif.

* according to Rev. Sci. Inst. 35, 194, 1964.

Positions Open

PENNSYLVANIA STATE UNIVERSITY, MATERIALS RE-
SEARCH LABORATORY. Attractive opportunities available for
post-doctoral and postgraduate research in a variety of aspects of
solid state physics, including lattice dynamics, thin film optics, hetero-
junctions and semiconductor surfaces. Inquiries are invited and should
be sent to the Director, Professor Rustum Roy, 1-112 Research Build-
ing, University Park, Pennsylvania.

- 14-18 Mass Spectrometry (Paris) spons'd by American Soc. for Testing and Materials, Groupement pour l'Avancement des Méthodes Spectrographiques, Hydrocarbon Research Group: *Secrétariat, GAMS, 1, rue Gaston Boissier, Paris 15, France*

Analogue Computation (Brighton) spons'd by British Computer Soc.: *S. C. Redshaw, U. of Birmingham, Edgbaston, Birmingham 15, England*

- 15-17 Luminescence (The University, Hull) spons'd by Inst. of Physics and Physical Soc.: *Administration Assistant, IPPS, 47 Belgrave Sq., London S.W.1, England (See Jan. PT, p. 135)*

- 15-18 Nuclear Photography (Geneva): *E.W.D. Steel, European Organization for Nuclear Research, Geneva 23, Switzerland*

- 17-21 Natural Philosophy Today (Pisa), in connection with 4th centenary of the birth of Galileo: *N. B. Cacciapuoti, Istituto di Fisica dell'Università, Piazza Torricelli 2, Pisa, Italy*

- 21-26 Electrochemical Thermodynamics and Kinetics (London and Cambridge): *M. Fleischmann, Physical Chemistry Dept., U. of Newcastle/Tyne, Newcastle/Tyne 1, England*

- 22-24 Antennas and Propagation (Long Island, N.Y.) spons'd by Inst. of Electrical and Electronics Engrs.: *H. Jasik, 100 Shames Dr., Westbury, N.Y. (See Jan. PT, p. 137)*

Many-Body Problems (U. of Manchester) spons'd by Inst. of Physics and Physical Soc.: *Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1 England (See Mar. PT, p. 92)*

- 23-25 Fundamental Problems of Low-Pressure Measurements (Nat'l Physical Lab, Teddington) spons'd by Nat'l Physical Lab, Inst. of Physics and Physical Soc.: *R. S. Dadson, Standards Div., Nat'l Physical Lab, Teddington, Middlesex, England (See Oct. '63 PT, p. 110)*

- 25-26 Communications (Montreal) spons'd by Canadian Inst. of Electrical and Electronics Engrs.: *F. G. R. Warren, Canadian IEEE Symposium on Communications, PO Box 802, Station B, Montreal, Quebec, Canada*

- 29 Nucleation, Growth, and Structure of Thin Films (Chicago) spons'd by American Vacuum Soc. Thin Film Div.: *S. P. Wolsky, P. R. Mallory and Co., Burlington, Mass.*

- 29-1 • Lasers and their Applications (London): *Secretary, Institution of Electrical Engrs., Savoy Pl., London, WC 2, England*

Physics and Nondestructive Testing (Biltmore Hotel, Dayton, Ohio) spons'd by US Air Force: *W. J. McGonnagle, Southwest Research Inst., PO Box 2296, San Antonio, Tex.*

Physics of Failure in Electronics (Chicago) spons'd by Rome Air Development Center, IIT Research Inst.: *M. Goldberg, IIT Research Inst., 10 W. 35th St., Chicago, Ill. (See Apr. PT, p. 110)*

- 30-2 American Vacuum Society (Chicago): *G. H. Bancroft, Bendix-Balzers Vacuum, Inc., 1645 St. Paul St., Rochester 21, N. Y.*

October 1964

- 1-2 Emission of Electrons from Solids (Keele) spons'd by Inst. of Physics and Physical Soc.: *Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1, England*

- 2-3 Current Trends in Optical Physics (State U. of N.Y. College at Cortland), *APS New York State Section fall meeting: R. G. Nuckolls, Dept. of Physics, SUNY College, Cortland, N.Y.*

- 5-7 Radiation Effects in Electronics (Syracuse) spons'd by American Nuclear Soc., American Soc. for Testing and Materials: *T. J. Csermely, Carrier Research and Development Co., Carrier Parkway, Syracuse, N.Y.*

- 5-8 • American Documentation Institute (Philadelphia): *B. F. Cheydleur, Philco Corp., Willow Grove, Pa.*

- 5-10 German Physical Society (Düsseldorf): *K. Hecht, 5 Köln-Bayenthal, Schillerstr. 107, Germany*

- 6-8 Analytical Chemistry in Nuclear Technology (Gatlinburg, Tenn.) spons'd by Oak Ridge Nat'l Lab: *C. D. Susano, ORNL, PO Box X, Oak Ridge, Tenn.*

- 6-9 ♦ Optical Society of America (Statler-Hilton Hotel, New York City): abstracts deadline July 17: *Mary E. Waga, 1155 16th St., NW, Washington, D.C.*

- 11-14 • URSI/IEEE (Urbana) spons'd by Internat'l Scientific Radio Union, Inst. of Electrical and Electronics Engrs.; abstracts deadline Aug. 1: *E. C. Jordan, USNC-URSI, U. of Ill., Urbana, Ill.*

- 12-14 • Protection against Radiations in Space (Gatlinburg, Tenn.) spons'd by government agencies; abstracts deadline August 14: *F. C. Maieschein, Oak Ridge Nat'l Lab., PO Box X, Oak Ridge, Tenn.*

- Weak Interactions of Strange Particles (Madison) spons'd by Nat'l Acad. of Sciences: *D. W. Kerst, U. of Wisc., Madison 6, Wisc.*

- Electrical Insulation (Cleveland) spons'd by Nat'l Acad. of Sciences: *D. W. Thornhill, Nat'l Acad. of Sciences, 2101 Constitution Ave., NW, Washington 25, D.C.*

Entry Technology (Williamsburg, Va.) spons'd by American Inst. of Aeronautics and Astronautics: *AIAA, 500 Fifth Ave., New York 36, N. Y.*

International Laser Physics and Applications (Bern) spons'd by Institut für angewandte Physik der Universität Bern, Commission Suisse d'Optique Photonique et d'Optique Electronique: *R. Dändliker, U. of Bern, Dept. of Applied Physics, Sidlerstrasse 5, Bern, Switzerland*

- 12-15 Instrument Society of America (New York City): *ISA Meetings Manager, Penn Sheraton Hotel, 530 Wm. Penn Place, Pittsburgh 19, Pa. (See Jan. PT, p. 137)*

SENIOR SCIENTISTS and ENGINEERS MS and PH.D.

Our clients include many of the leading research laboratories from coast to coast, as well as numerous small and newer research and development firms.

Fine opportunities for professional advancement exist among them.

**Companies pay
relocation and agency expenses**

**OSTRANDER ASSOCIATES
AGENCY**

**Suite P, 825 San Antonio Road
Palo Alto, California
DAvenport 6-0744**

SCIENTIFIC and TECHNICAL POSITIONS

**for U.S. Citizens
with an Agency of the U.S. Government
in Washington, D.C.
Salaries \$16,000 to \$20,000**

SENIOR SPACE PHYSICIST or ASTROPHYSICIST

Some background in upper atmosphere geophysics with PhD or equivalent. No laboratory work.

SENIOR RESEARCH PHYSICIST

To evaluate applied research results in physics and mathematics. No laboratory work. Requires PhD with several years research experience and broad knowledge of various fields of physics and their application.

SENIOR NUCLEAR PHYSICIST

Experience in nuclear weapons design and some supervisory background. To perform and supervise desk-type research work for reports on nuclear weapon development.

All applications will be held in strict confidence. Write complete details to:

**Dr. Donald T. Munley
P.O. Box 13082, T St. Station,
Washington, D.C. 20009.**

engineers & scientists

*with exceptional
abilities are invited
to investigate
opportunities with the*

Research Laboratories of Brown Engineering Company, Inc.

Positions are available in

■ nuclear power ■ astrophysics ■
solid-state physics ■ applied math-
ematics ■ plasma physics ■ pro-
pulsion systems ■ electronic sys-
tems ■ fluid mechanics ■ thermo-
chemistry ■ electromagnetic ra-
diation ■ heat transfer ■ weapon
evaluation ■ missile and space
intelligence ■ dynamics ■ electro-
optics.

Openings normally require ad-
vanced training (30% of the staff
hold PhD degrees) but inquiries
are invited from recent honor
graduates at the BS level.

Submit your resume in confidence to:
Raymond C. Watson, Jr.
Director Of Research

BROWN
Engineering Company, Inc.

300 Sparkman Dr., N.W. PT-7, Huntsville, Alabama 35807

An Equal Opportunity Employer

Positions Open

• OPTICS •
• THIN FILMS •
• SOLID STATE •

• ENERGY CONVERSION • ACOUSTICS •
• PLASMA • PROPULSION • INFRARED •



**• PHYSICISTS •
PHYSICAL SCIENTISTS •**

Our staff of experienced, graduate scientists is prepared to offer you personalized assistance in locating your next position. Write for confidential application or send resume.

**EMPLOYERS PAY FEES
COMPLETE NATIONAL COVERAGE**

WRITE US FIRST **ATOMIC PERSONNEL, Inc.**
Suite 1207M, 1518 Walnut St., Phila., Pa., 19102

• ELECTRONICS •
• AEROSPACE •
• NUCLEAR •

PROJECT DIRECTOR IN MANPOWER STUDIES

National professional organization in physics seeks a physicist to analyze educational and manpower statistics in physics, estimate trends in supply and demand, and prepare reports. Competence in making statistical studies and in writing reports essential. Ph.D. in physics and academic experience highly desirable. Salary dependent upon experience, but competitive. Reply in confidence to:

Box 664

**Physics Today, 335 E. 45 Street
New York 17, New York**

RADIOPHYSICISTS for ionospheric, radio propagation or radio astronomy projects at the Geophysical Institute, University of Alaska. It is expected that appointees would have faculty rank (Assistant to full Professor, according to qualifications and experience) in the Physics Department. The Institute has a broad program of auroral zone and solar-terrestrial studies. Special equipment includes 60-ft. dish, twin 28-ft. interferometer, riometers, ionosonde, cross-modulation equipment, etc.

Qualifications: Ph.D. in Physics or E. E. or equivalent competence and achievement. Starting salary range \$1000-\$1600 per month according to background. Apply **Director, Geophysical Institute, College, Alaska.**

Good private liberal arts college in Southern California seeks physicists. Has recent grants from N.S.F. and U.S.A.F. for equipment and research. Using P.S.S.C. material for nonscience majors and Feynman lectures for majors. Quantum mechanics in junior year. Prepares majors for Leighton in senior year. Secondary school institute teaching opportunity afforded. Research grants encouraged and teaching load adjusted. Small class sizes. Fine opportunity for creative teaching and research and building department. Salaries competitive. Reply with vitae and papers to **Dean of the Faculty, University of Redlands, Redlands, California.**

Ph.D. Nuclear Physicist; Experienced in teaching; Desires academic position.

PHYSICS TODAY,

Box 764,

**335 East 45 Street,
New York, N.Y. 10017**

Ph.D. PHYSICIST & CHEMIST

For Basic and Applied research requiring imaginative and creative ability on continuing programs involving partially ionized gases, plasmas, and charged particles in vacuum.

Unified Science Assoc., Inc.
826 So. Arroyo Parkway
Pasadena, California

An equal opportunity employer

- 12-15 Measurement Standards and Laboratories (New York City) spons'd by the Instrument Soc. of America, Nat'l Conf. of Standards Labs., Precision Measurements Assoc., in connection with ISA Instrument Conf.: O. L. Linebrink, Battelle Memorial Inst., 505 King Ave., Columbus, Ohio
- 13-16 Calorimetry (Washington, D. C.): W. N. Hubbard, Argonne Nat'l Lab, 9700 S. Cass Ave., Argonne, Ill.
- 13-17 Electron Microscopy Society of America (Detroit): A. Taylor, Virus Div., Parke Davis Co., Detroit 32, Mich.
- 14-16 Gaseous Electronics (Atlantic City), American Physical Soc. Topical Conf. spons'd by Army Electronics Research and Development Lab; abstracts deadline Aug. 21: S. Schneider, Hq., AERDL, Ft. Monmouth, N.J. (See Jan. PT, p. 129)
- Ultrasonics (Santa Monica, Calif.) spons'd by Inst. of Electrical and Electronics Engrs.: R. L. Rod, Acoustical Associates, Inc., 5331 W. 104 St., Los Angeles, Calif.
- 15-17 Correlations of Particles Emitted in Nuclear Reactions (Gatlinburg), American Physical Soc. Topical Conf.; send abstracts by Sept. 1 to A. Zucker, Oak Ridge Nat'l Lab, PO Box X, Oak Ridge, Tenn.; T. Woods, Manager, Mountain View Hotel, Gatlinburg, Tenn. (See Jan. PT., p. 129)
- 17 APS New England Section (U. of Mass., Amherst): J. Gordon Stipe, Boston U., Boston, Mass. 02215
- 21-23 Spectroscopy, Instrumentation, and Chemistry (San Francisco) spons'd by Northern Calif. Spectroscopy Soc., American Chemical Soc.: J. G. Conway, Lawrence Radiation Lab, U. of Calif., Berkeley 4, Calif.
- 21-24 Acoustical Society of America (Austin, Tex); abstracts deadline July 22: C. P. Borer, U. of Texas, Univ. Sta., Austin, Tex.
- 23-24 ♦ American Physical Society (Chicago). Note: abstract deadline is now Sept. 5: R. G. Sachs, Regional Secretary, Argonne Nat'l Lab, 9700 S. Cass Ave., Argonne, Ill.
- 26-27 Combustion Institute Western States Section (U. of Utah): Secretary CI/WSS, 16902 Bollinger Dr., Pacific Palisades, Calif. (See Feb. PT, p. 92)
- 26-28 Society of Rheology (Mellon Inst.): abstracts deadline Aug. 15: H. Markovitz, Mellon Inst., Pittsburgh, Pa.
- 27-29 Fall Joint Computer Conference (San Francisco) spons'd by American Federation of Information Processing Socs.: R. I. Tanaka, C/O Lockheed Missiles and Space Co., 3251 Hanover St., Palo Alto, Calif.
- 28-30 Nuclear Science Instrumentation in Space and Laboratory (Philadelphia) spons'd by Inst. of Electrical and Electronics Engrs., Nat'l Aeronautics and Space Administration, Atomic Energy Commission: L. Costrell, Nat'l. Bureau of Standards, Washington, D.C. (See May PT, p. 116)
- 30-31 • Theoretical Physics (College Park) spons'd by Nat'l Science Foundation: J. S. Toll, U. of Md., College Park, Md.

November 1964

- 2-4 Society of Engineering Science, Inc. (Mich. State U., E. Lansing); abstracts deadline Aug. 15: A. C. Eringen, School of Aeronautical and Engineering Sciences, Purdue U., W. Lafayette, Ind.
- 4-7 APS Division of Plasma Physics (New York City): N. J. Zabusky, Bell Telephone Labs, Whippany, N. J.
- 5-7 APS Southeastern Section (Chattanooga, Tenn.): H. E. Carr, Physics Dept., Auburn U., Auburn, Ala.
- 9-10 Optical and Electro-Optical Information Processing Technology (Boston) spons'd by Office of Naval Research, Inst. of Electrical and Electronics Engrs., Assoc. for Computing Machinery, Optical Society of America: Barbara McKinney, Computer Associates, Inc., Wakefield, Mass.
- 16-17 Space Simulation Testing (Pasadena) spons'd by American Inst. of Aeronautics and Astronautics: AIAA, 500 Fifth Ave., New York 36, N. Y.
- 16-18 Bioastronautics and the Exploration of Space (San Antonio) spons'd by Aerospace Medical Div. (AFSC): J. Harmon, Southwest Research Inst., PO Box 2296, San Antonio, Tex.
- 16-19 Magnetism and Magnetic Materials (Minneapolis) spons'd by American Inst. of Physics, Inst. of Electrical and Electronics Engrs.: R. Prosen, Honeywell Research Center, Hopkins, Minn.
- 23-25 APS Division of Fluid Dynamics (Pasadena, Calif.): R. J. Emrich, Dept. of Physics, Lehigh U., Bethlehem, Pa.
- 23-28 Dosimetry of Radiation from External Sources (Paris): M. Gras, C/O Service de Contrôle des Radiations et de Génie Radioactif, Centre d'Etudes Nucléaires de Saclay, BP 2, Gif sur Yvette, Seine-et-Oise, France

December 1964

- 7-9 Performance of High-Temperature Systems (Pasadena, Calif.): G. S. Bahn, 16902 Bollinger Dr., Pacific Palisades, Calif. (See Feb. PT, p. 97)
- 14-22 International Geological Congress (New Delhi): Secretary General, c/o Geological Survey of India, 27, Chowringhee, Calcutta 13, India
- 21-23 American Physical Society (Berkeley) abstracts deadline Oct. 16: W. Whaling, Regional Secretary, Calif. Inst. of Technology, 1201 E. Calif. St., Pasadena, Calif.
- 26-28 • American Astronomical Society (Montreal): G. C. McVittie, U. of Illinois Observatory, Urbana, Ill.

January 1965

- 5-8 Solid-State Physics (U. of Bristol) spons'd by Inst. of Physics and Physical Soc.; send abstracts by Nov. 20 to D. A. Greenwood, H. H. Wills Physics Lab, Royal Fort, Bristol 8: Administration Assistant, IPPS, 47 Belgrave Sq., London, S. W. 1, England

PhD

CORROSION RESEARCH

The expanding work of our Metals Division has created a new opening for a Research Associate at Olin's modern, well-equipped laboratories in New Haven, Connecticut. He will take project responsibility in studying the role of surface films on the reactions of metallic surfaces and, specifically, the kinetics of electrode reactions.

Requires: PhD in Physics, Physical Chemistry or Metallurgy and a strong background in fundamental research, including the development and application of solid state technology to corrosion and oxide films on metals.

Write in confidence to:

Mr. John Ibberson, Dept. MP

Olin

RESEARCH CENTER

New Haven 4, Connecticut
An Equal Opportunity Employer

THE REVIEW OF SCIENTIFIC INSTRUMENTS

A monthly devoted to scientific instruments, apparatus, and techniques. Includes original review articles on instrumentation in physics, chemistry, and the life sciences, book reviews, and sections on new instruments and new materials.

Annual Subscription Price

Nonmembers	
\$13 domestic	\$15 foreign
Individual Members of Member Societies	
\$11 domestic	\$13 foreign

Send orders and inquiries to

Department S
AMERICAN INSTITUTE OF PHYSICS
335 East 45 St.
New York, N. Y. 10017