

nuclear scientists & engineers



Hughes-Fullerton R & D in Southern California offers outstanding professional assignments... challenging projects... research atmosphere.

Rapid expansion on long-term contracts and projects creates *unusually interesting professional assignments* in the following areas of interest:

- Transient Radiation Effects on Electronics (TREE).
- Radiation damage effects on electronic materials, components and circuits.
- Design, fabrication and operation of radiation equipment and systems for simulation of weapon environments in the laboratory.
- Research, design and fabrication of radiation detection equipment and systems for application in simulated environments.
- Study of weapon and space radiation environments to provide design bases for simulation and radiation hardening.

HUGHES offers you an opportunity to work on challenging projects in the nuclear field... in an outstanding research atmosphere... with extensive technical, laboratory and facility support.

If your background includes experience in radiation effects on electronics, nuclear physics, radiochemistry, dosimetry or nuclear environments—and you hold an accredited B.S. or advanced degree in E.E., Physics or Chemistry and U. S. citizenship, we would like to discuss with you the opportunities currently available at HUGHES-FULLERTON R & D in Southern California.

For additional information, please write:

MR. J. E. TENNEY
Supervisor,
Professional Staffing
HUGHES-FULLERTON R & D
P. O. Box 3310
Fullerton, California

Creating a new world with electronics

HUGHES

HUGHES AIRCRAFT COMPANY
FULLERTON R & D

An equal opportunity employer

lasers and masers which is being arranged by R. J. Collins of the University of Minnesota. The program will include papers by Robert W. Terhune of the Ford Motor Company, N. S. Kapany of Optics Technology Inc., George R. White of the Sperry Gyroscope Corporation, and Henry H. Plotkin of NASA's Goddard Space Flight Center. Another interdisciplinary symposium to be held the same morning will deal with philosophical aspects of cosmology and cosmogony and will be presented jointly by Section L (History and Philosophy of Science), Section B, and Section D. Arranged by Adolf Grünbaum of the University of Pittsburgh, the program will include papers by G. C. McVittie of the University of Illinois and O. Heckmann of the University of Hamburg. During the afternoon of December 28, Arthur L. Schawlow will be one of two speakers at the special session, "Moving Frontiers of Science, Part II". His topic will be infrared and optical masers. At 8 p.m. that evening, Paul M. Gross will deliver his retiring presidential address, entitled "The Fifth Estate in the Sixth Decade".

Rheology

A program of invited and contributed papers is being arranged for the winter meeting of the Society of Rheology, which will be held February 3-4, 1964, at the Claremont University Center in Claremont, Calif. Titles of contributed papers should be submitted prior to December 1, abstracts should be sent before December 10, and manuscripts of papers presented should be received on or before February 15 for inclusion in the published *Transactions of The Society of Rheology*. Titles and abstracts should be sent to the chairman of the winter meeting, Dr. Thor L. Smith, Stanford Research Institute, Menlo Park, Calif. Manuscripts of accepted papers may be sent either to Dr. Smith or to the editor of the *Transactions*, Professor Raymond R. Myers, Chemistry Department, Lehigh University, Bethlehem, Pa.

Accelerators

A Conference on High-Energy Cyclotron Improvement will be held February 7-8 at the College of William and Mary in Williamsburg, Va. The meeting is intended to facilitate communication among cyclotron laboratories regarding the various approaches to synchrocyclotron improvement in the 100-800-MeV range. Representatives of each participating laboratory will be given the opportunity to discuss their machine-improvement programs. Inquiries should be directed to Prof. Robert T. Siegel, Department of Physics, College of William and Mary, Williamsburg, Va.

Radiation Biology

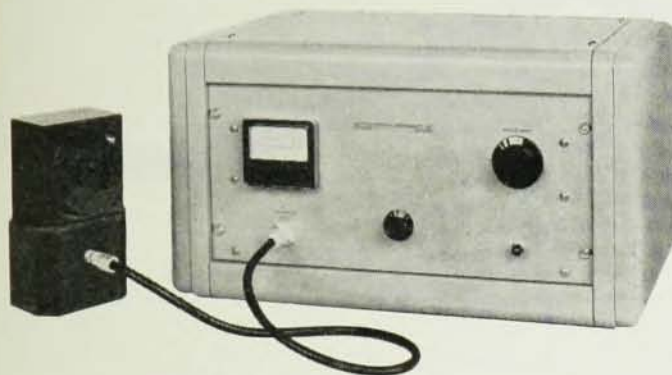
The 18th Annual Symposium on Fundamental Cancer Research, which meets March 2-4 at the Shamrock Hilton Hotel in Houston, will be devoted to cellular

INTEGRATED KERR CELL MODULATORS

FOR



• GIANT LASER PULSING • ULTRAHIGH-SPEED PHOTOGRAPHY



MODEL ILM-70

*Prices subject to change without notice.

Laser Modulators Feature

- Multi-megawatt "Q" spoiling
- Complete H.V. protection
- Flexible coupling
- Ultra-clean Kerr cells

Camera Systems Feature

- Nanosecond range exposures and triggering
- Interchangeable PFN's to 20 microseconds
- High quality optics

Low Cost

- System prices from below \$2,500*

FOR DETAILED SPECIFICATIONS, PRICE AND DELIVERY INFORMATION TO...

ELECTRO-OPTICAL INSTRUMENTS INC.

926 SOUTH MYRTLE AVENUE

ELLIOTT 9-9391

MONROVIA, CALIFORNIA

**Rack
'em
up!**

One compact Honeywell T6GA amplifier operates up to 6 high-frequency Visi-corder galvanometers, providing input signal levels from 0-1v to 0-50v, yet fits in only 3½" of rack space.



For full specifications on the T6GA, write to Honeywell, Denver 10, Colorado, or telephone us direct at 303-794-4311.



DATA HANDLING SYSTEMS

Honeywell

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.

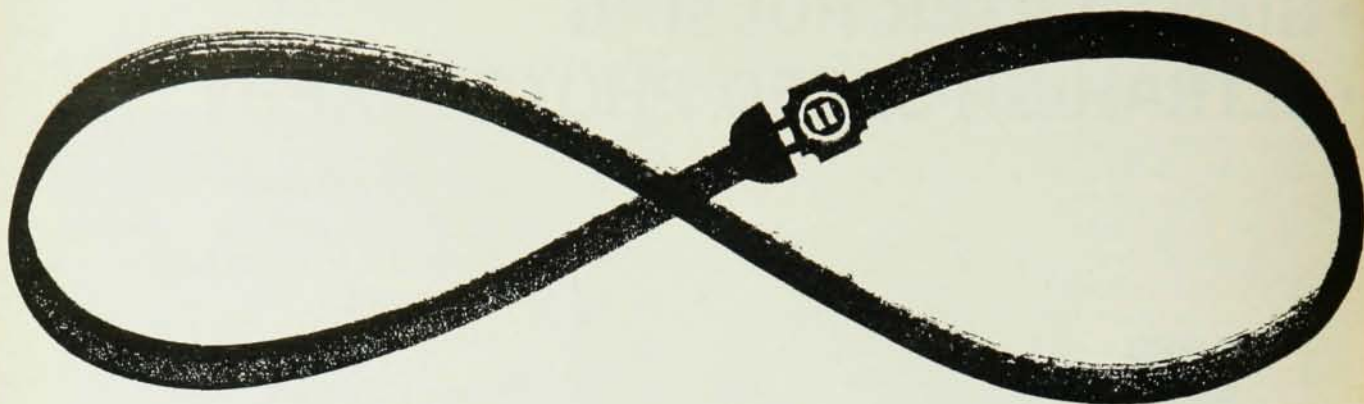
Fine opportunities for professional advancement exist among them.

For information, submit a resume to Mr. M. Ostrander, Director.

Companies pay relocation and agency expenses

**OSTRANDER ASSOCIATES
AGENCY**

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



ELECTRIC POWER FOR SPACE

TRW Space Technology Laboratories is building electric power systems using electrochemical, photovoltaic and nuclear techniques. They are being used on America's major space programs, including OGO, Air Force 823 Program and Mariner. Engineers and scientists interested in energy conversion technology, transistor circuit design, electrochemistry and power system engineering should contact STL Professional Placement, One Space Park, Redondo Beach, Calif. Dept. K-11. TRW is an equal opportunity employer.

TRW / **SPACE TECHNOLOGY LABORATORIES**
 a subsidiary of Thompson Ramo Wooldridge Inc.
ONE SPACE PARK • REDONDO BEACH, CALIFORNIA

radiation biology, considering the effects of radiation in the cell and possible implications for cancer therapy. The meeting, which is sponsored by the University of Texas M. D. Anderson Hospital and Tumor Institute, will be organized in the following sessions: (1) radiation effects on macromolecules, (2) radiation effects on replication of cellular structures, (3) critical structures in radiation phenomena, (4) modification of radiation response, (5) radiosensitivity in the replication cycle of cells and the relation to fractionation in radiotherapy, and (6) responses in mammalian cells and their implications for radiotherapy of cancer.

Additional information can be obtained from R. J. Shalek, University of Texas M. D. Anderson Hospital and Tumor Institute, Houston 25, Tex.

Radioisotopes

The second in the series of annual Oak Ridge Radioisotope Conferences will be held April 19-21 in Gatlinburg, Tenn. Sponsored by the Oak Ridge National Laboratory and the Oak Ridge Institute of Nuclear Studies, in cooperation with the Atomic Energy Commission, the meeting will cover the use of radioisotopes in biology, medicine, engineering, and the physical sciences. Inquiries and papers (deadline January 1) should be directed to R. T. Overman, Special Training Division, Oak Ridge Institute of Nuclear Studies, PO Box 117, Oak Ridge, Tenn.

Optical Masers

The Electronics Division of the Electrochemical Society is planning a symposium on optical masers for its 1964 Spring Meeting. The symposium, which will be held on May 6 and 7 at the Royal York Hotel in Toronto, will consist primarily of papers dealing with condensed-phase media used in connection with optical masers. Appropriate subjects will include preparation and physical properties of crystals, glasses, liquids, chelates, etc., of possible use in optically pumped or *p-n* junction lasers, or for the modulation, mixing, and harmonic generation of coherent light. All papers must represent the results of original, unreported research.

Triplicate copies of 75-word and 500-1000-word abstracts are due at Electrochemical Society Headquarters, 30 East 42nd Street, New York 17, N. Y., by December 13. The abstracts should indicate that the paper is intended for the optical-maser symposium, the estimated presentation time, and the name of the author who will present it.

Further information regarding the meeting can be obtained from R. N. Hall, General Electric Research Laboratory, PO Box 1088, Schenectady, N. Y.

The Electromagnetic Spectrum

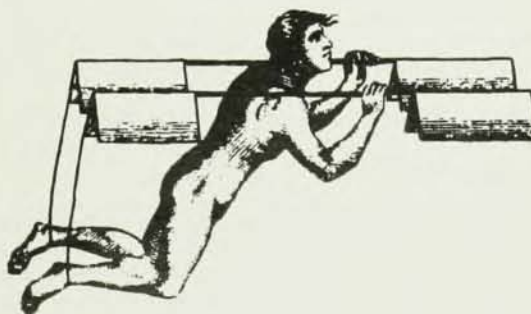
The 1964 Conference on Precision Electromagnetic Measurements will be held June 16-18 in Boulder, Colo. This international meeting is the most recent of a se-

ASTRODYNAMICISTS STL

TRW Space Technology Laboratories has important long-term responsibilities in the nation's major space programs GEMINI, APOLLO, SURVEYOR, RANGER-MARINER and others. STL's Systems Research Laboratory has immediate openings for engineers and scientists possessing a degree in Math, Physics or Engineering, qualified for creative assignments in

- Manned Interplanetary and Lunar Flight
- Orbit Determination
- Earth and Interplanetary Orbit Design
- Perturbing Effects on Earth and Interplanetary Orbits
- Over-all Analysis of Lunar Missions
- Earth and Interplanetary Orbital Operations and Related Areas of Astrodynamics

For interview in your area in the near future, act NOW! Forward your resume to STL Professional Placement, Department PT, One Space Park, Redondo Beach, California. TRW is an equal opportunity employer.



TRW SPACE TECHNOLOGY LABORATORIES
a subsidiary of Thomson Ramo Wooldridge Inc.
ONE SPACE PARK - REDONDO BEACH, CALIFORNIA