

CALENDAR

Abbreviations:

AAPT—American Association of Physics Teachers
 AAS—American Astronomical Society
 ACA—American Crystallographic Assoc.
 APS—American Physical Society
 ASA—Acoustical Society of America
 OSA—Optical Society of America
 S OF R—Society of Rheology
 AEC—US Atomic Energy Commission
 AFCL—Air Force Cambridge Research Laboratories

ANS—American Nuclear Society
 AVS—American Vacuum Society
 IAEA—International Atomic Energy Agency
 IEEE—Institute of Electrical and Electronics Engineers
 IPPS—The Institute of Physics and The Physical Society
 IUPAP—International Union of Pure and Applied Physics
 NBS—National Bureau of Standards
 ORNL—Oak Ridge National Laboratory

Coding:

date **subject** ☐ HOST ☐ Location (*Contact*) [submission deadline] *Physics Today* ref.

• new listing ♦ new information

Information in the calendar is compiled from a file maintained in the PHYSICS TODAY office. Readers are invited to write or telephone for general calendar information beyond what we print. For complete information concerning an entry, readers are advised to consult the contact. The date at the end of each item refers to the issue of PHYSICS TODAY in which the item is listed with more detail than appears in subsequent issues.

MARCH 1969

- 3-7 • **Rarefied Gas Dynamics** ☐ Belgium (*Director, von Karman Institute for Fluid Dynamics, 72, chaussée de Waterloo, Rhode-Saint-Genèse, Belgium*) 3/69
- 4-20 **Polymer Conference** ☐ WAYNE STATE UNIVERSITY ☐ Detroit (*H. K. Livingston*) 2/69
- 5-7 **1969 Particle Accelerator Conference** ☐ IEEE ☐ Washington, D. C. (*J. A. Martin*) 10/68
- 6 • **Aims of Accuracy in Diffraction Studies of Biological, Chemical and Geological Problems** ☐ State University of New York at Buffalo (*P. Coppens, Chemistry Dept., SUNY, Buffalo, N. Y., 14214*) 3/69
- 6, 7 **Acoustical Holography** ☐ DOUGLAS ADVANCED RESEARCH LABORATORIES ☐ Huntington Beach, Calif. (*Secretary, 2nd International Symp. Acoust. Holography*) 7/68
- 10-13 **1969 Physics Exhibition** ☐ IPPS ☐ London (*Exhibitions Officer*) 10/68
- 10-15 • **Mass Spectrometry** ☐ GESELLSCHAFT DEUTSCHER CHEMIKER ☐ Heidelberg (*Gesellschaft Deutscher Chemiker, 6000 Frankfurt (M), Postfach 119075, W. Germany*) 3/69

- 11-15 ☐ OSA ☐ San Diego, Calif. (*M. E. Wurga*) 4/68
- 13-15 **Isobaric Spin** ☐ APS ☐ Pacific Grove, Calif.
- 17, 18 • **High Speed Testing: The Reology of Solids** ☐ PLAS-TECH EQUIPMENT CORP. ☐ Boston (*R. H. Supnik, c/o Plas-Tech Equipment Corp., 4 Mercer Rd., Natick, Mass. 07160*) 3/69
- 17-19 **Physical Electronics** ☐ YALE U. ☐ New Haven, Conn. (*T. E. Fischer*) 9/68
- 17-19 **Annual Meeting** ☐ SOLAR ENERGY SOCIETY (*F. E. Edlin*) 10/68
- 18-20 • **Annual Conference** ☐ NATIONAL FEDERATION OF SCIENCE ABSTRACTING AND INDEXING SERVICES ☐ Raleigh, N.C. (*S. Keenan, NFSAIS, 2102 Arch St., Philadelphia, Pa. 19103*) 3/69
- 20, 21 **Instabilities in Semiconductors** ☐ APS, IBM ☐ Yorktown Heights, N. Y. (*M. I. Nathan*) 1/69
- 23-29 ☐ ACA ☐ Seattle, Wash.
- 24, 25 **Laser Safety Conference** ☐ MEDICAL CENTER OF THE U. OF CINCINNATI ☐ Cincinnati, Ohio (*L. Goldman*) 2/69
- 24-26 **Chemical, High-Polymer and Solid-State Physics Div.** ☐ APS ☐ Philadelphia, Pa. (*W. W. Havens Jr*) 5/68

The E-1 Monochromator

Heart of a wide range spectrometer series from Perkin-Elmer

The E-1 is the nucleus of a whole new series of building-block spectrometers. It covers the UV to mid-IR range from 200m μ to 40 μ .

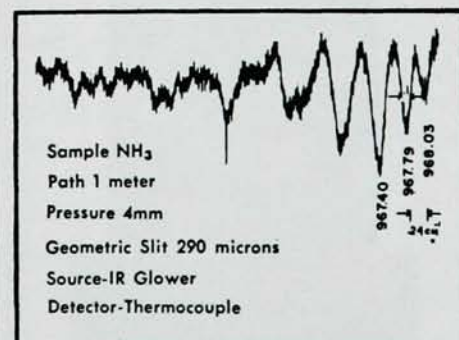
You can buy the Model E-1 as a simple, manually operated monochromator, or as part of a complete high-performance spectrometer. We supply four standard integrated systems: E-11: UV-VIS from 2000A to 1 μ . E-12: NIR from 1 to 2.5 μ . E-13: Mid-IR from 2 to 40 μ . E-14: The entire range from 2000A to 40 μ .

The Ebert system of mounting was selected to give maximum resolution and light-gathering power, and yet maintain a compact size.

Abscissa presentation is linear in wavelength or wave number and is extremely precise. To achieve this, we developed a barrel cam to form a spiraling sine or cosecant function.

You can select either single or double-pass optical path, the latter doubling dispersion. In double-pass operation, the stray light is reduced to a minimum. You can also elect to chop internally or externally at various chopping frequencies.

Electronics are solid-state.



An infrared scan of NH₃ demonstrates a half-band width of 0.1 cm⁻¹.

For details contact your local Perkin-Elmer representative or write to: Instrument Division, Perkin-Elmer Corporation, 736 Main Avenue, Norwalk, Conn. 06852.

PERKIN-ELMER



Color TV Exposure
• Photo Copying •
Image Projection •
Photo-Resist Sys-
tems • Photoflood
Systems • Spectro-
fluorometers • Mis-
sile Flares • Optical
Ranging • Strobo-
scopes • Photoflood
Lamps

**XENON FLASH AND
STROBE LAMP — 8
TO 18,000 JOULES •
LAMPHOUSING — 35 TO 350
WATTS • MERCURY SHORT ARC
LAMPS — 100 TO 500 WATTS,
2,000 TO 30,000 LUMENS •
POWER SUPPLIES — 35 TO 500
WATTS, 50 OR 60 CYCLE,
117 TO 220 VOLTS • XENON
SHORT ARC LAMP — 35
TO 300 WATTS, 600
TO 7,500 LUMENS**

Metallographs • Op-
tical Reader • Color
Matching • Optical
Bench Accessory •
Slit Illuminators •
Schlieren Systems •
Hologram Illumina-
tors • Step & Repeat
Printing Systems

*Where the resource is
LIGHT
and the product is
IMAGINATION!*

For information write to:
**ILLUMINATION INDUSTRIES
INCORPORATED** 610 VAQUEROS
SUNNYVALE, CALIFORNIA 94086

(408) 738-2744



FACULTY OF SCIENCE

University of Nijmegen (Netherlands)

In the Faculty of Science of the University of Nijmegen exists
a vacancy for an

EXTRAORDINARY PROFESSOR IN MATERIALS RESEARCH

to assume responsibility for a material research group, to
assist solid state physics groups and lecture to chemistry and
physical-chemistry students. Inorganic-chemist or physical-
chemist is preferred.

Letters of application should be sent to Professor Dr. A. G. M.
Janner, Physics Department, Catholic University of Nijmegen,
Driehuizerweg 200 Nijmegen, The Netherlands.

The Scientists and
Engineers served by
Corcoran in the last year
have found the
difference between
"a job" and "the job."

• Whether your search for a
new working environment is
based on a desire for larger re-
sponsibility, wider scope of
action, broader technical inter-
ests, or for financial gain, the
individual attention offered by
Corcoran assures a greater
chance of success.

• Nationwide, we serve large
and small clients on a fee paid
basis. Please airmail back-
ground to:

JOSEPH P. CORCORAN
Personnel Consultants

505 E. Germantown Pike
Lafayette Hill, Pa. 19444

(215) 825-0848

**Your Best
Source**
FOR
"Off-The-Shelf"
OPTICS
IN THE U.S.A.



ROLYN CORP.
300 North Rolyon Place
P.O. Box 148 • Arcadia, Calif. 91006

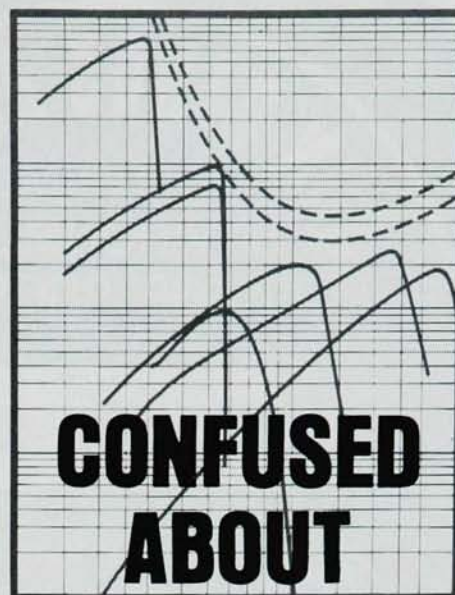
- 24-29 **Symposium on the Flow of Fluid-Solid Mixtures** ☐ Cambridge, England (G. K. Batchelor) by invitation 12/68
- 25-27 **Interactions Among Elementary Excitations in Solids and Liquids** ☐ SOLID STATE PHYSICS SUBCOMMITTEE, IPPS ☐ University of Nottingham (Meetings Officer) 2/69
- 25-27 **Lasers and Optoelectronics** ☐ INSTITUTION OF ELECTRONIC AND RADIO ENGINEERS ☐ Southampton, England (Conference Secretary) 1/69
- 26-28 **Engineering Aspects of Magneto-hydrodynamics** ☐ MIT ☐ Cambridge, Mass. (D. Jackson) 2/69
- 26-28 **Elementary Particles** ☐ NUCLEAR PHYSICS SUBCOMMITTEE, IPPS ☐ Cambridge, England (Meetings Officer) 11/68
- 26-28 • **Critical Phenomena** ☐ EUROPHYSICS ☐ Capri, Italy (D. Sette, Istituto de Fisica-Facoltà di Ingegneria, Università di Roma, Piazzale delle Scienze, 5, Rome) 3/69
- 27-28 ☐ GERMAN VACUUM SOCIETY—SWISS SOCIETY FOR VACUUM PHYSICS AND TECHNOLOGY ☐ Basle, Switzerland (Schweizerische Gesellschaft für Vakuum-Physik und Technik) 1/69
- 30-2 • ☐ AAS ☐ Honolulu (G. C. McVittie, U. of Illinois Observatory, Urbana, Ill. 61801) 3/69
- 31-2 **Vibrations Conference** ☐ AMERICAN SOCIETY OF MECHANICAL ENGINEERS ☐ Philadelphia (E. E. Ungar) 12/68
- 31-3 **Molecular Physics** ☐ ATOMIC AND MOLECULAR SUBCOMMITTEE, IPPS ☐ University of Manchester (Meetings Officer) 1/69

APRIL 1969

- 1-4 • **Thermodynamics** ☐ IPPS ☐ University College, Cardiff (Meetings Officer, IPPS, 47 Belgrave Sq., London S. W. 1) 3/69
- 8-9 • **High Performance Composites** ☐ ADVANCED RESEARCH PROJECTS AGENCY, MONSANTO, WASHINGTON UNIVERSITY ASSOC. ☐ St. Louis (G. L. Esterson, Box 1048, Washington U., St. Louis, Mo., 63130) 3/69
- 8-10 **Structure of Charged-Particle Tracks in Condensed Media** ☐ Cambridge, England (J. W. Boag) 1/69
- 8-11 **Inaugural Meeting** ☐ EUROPEAN PHYSICAL SOCIETY ☐ Florence, Italy (L. Cohen) 8/68
- 8-11 ☐ ASA ☐ Philadelphia, Pa.
- 9-11 • **Structural Studies of Partially Ordered Materials** ☐ X-RAY ANALYSIS AND CARBON AND GRAP-

HITE GROUPS, IPPS ☐ University of Sussex (Meetings Officer, IPPS, 47 Belgrave Sq., London S. W. 1) 3/69

- 11, 12 **Physics Beyond the Solar System** ☐ APS NEW YORK STATE SECTION (S. Raboy) 12/68
- 11, 12 **Atomic Physics** ☐ APS NEW ENGLAND SECTION ☐ U. of Connecticut (F. M. Gardner) 1/69
- 12 • ☐ AAPT NORTHERN CALIF. SECTION ☐ Stanislaus State College (V. S. Tuman, Physics Dept., Stanislaus State College, Turlock, Calif., 95380) 3/69
- 14-16 **Field of Materials** ☐ AD HOC COMMITTEE ☐ Pennsylvania State U. (R. Roy) 2/69
- 14-17 • **Fluid Mechanics in Relation to Natural Phenomena** ☐ IPPS ☐ University of Newcastle upon Tyne (Meetings Officer, IPPS, 47 Belgrave Sq. London S. W. 1) 3/69
- 15-18 **Intermag** ☐ IEEE ☐ Amsterdam (Th. Holtwijk) 9/68
- 15-18 **Conference on the Physics of Liquids** ☐ SOLID STATE PHYSICS SUBCOMMITTEE, IPPS ☐ Norwich, Norfolk, England (Meetings Officer) 10/68
- 16-18 • **Thin Films** ☐ IPPS ☐ University of York (Meetings Officer, IPPS, 47 Belgrave Sq., London S. W. 1) 3/69
- 16-18 **Geoscience Electronics Symposium** ☐ IEEE ☐ Washington, D. C. (M. E. Ringenbach) 10/68
- 17, 18 **Coherent Optics and Instrumentation** ☐ OAKLAND UNIVERSITY ☐ Rochester, Mich. (Conference Dept.,) 2/69
- 18, 19 • **APS OHIO SECTION** ☐ Kent State U. ☐ Kent, Ohio (A. A. Silvini, Dept. of Physics, Kent State U., Kent, Ohio) [3/24] 3/69
- 19 ☐ AAPT IOWA SECTION ☐ University of Northern Iowa (D. Hutchinson) 1/69
- 21-25 **Fundamental Aspects of Dislocation Theory** ☐ NBS ☐ Washington, D. C. (J. A. Simmons) by invitation only 8/68
- 21-25 **50th Anniversary Meeting** ☐ AMERICAN GEOPHYSICAL UNION ☐ Washington, D. C. (Geophysical Union Headquarters) 8/68
- 21-25 **Solid State Chemistry** ☐ ARIZONA STATE U. ☐ Scottsdale, Ariz. (L. Eyring) 8/68
- 28-1 **Spring Meeting and Nuclear Physics Div.** ☐ APS ☐ Washington, D. C. (W. W. Havens Jr) 5/68
- 28-2 **Thin Films** ☐ INTERNATIONAL CONFERENCE ON THIN FILMS ☐ Boston, Mass. (M. H. Francombe) 6/68
- 28-30 **Surface Science, Effusion and Evaporation** ☐ NEW MEXICO SEC-



CONFUSED ABOUT INFRARED DETECTOR SPECS?

Get the answers from the experts at Barnes!

Head in a spin with noise-value figures? Time constants? Detectivity? Flake sizes?

Do you need a simple thermal detector? Cooled or uncooled photodetector? A sophisticated mosaic array?

Why not ask the experts?

Our credentials speak for themselves. For the past 15 years our infrared specialists have been helping customers select the best detector for their requirements. We've built complex detectors to meet the most demanding specs for advanced military, space, and research programs. And we've made them simple for off-the-shelf delivery to industry.

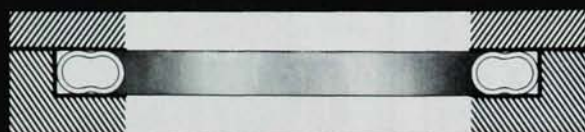
For personal service, competitive prices and fast delivery, just call or write: Product Sales Manager . . .



**BARNES
ENGINEERING
COMPANY**

30 Commerce Rd/Stamford, Conn. 06902
Phone (203) 348-5831 / TWX 710-474-3367

RUN RINGS AROUND EXTREME ENVIRONMENT LEAKAGE PROBLEMS



Advanced Metal-O-Rings

are designed to furnish positive sealing under the toughest environmental conditions. Millions of these tubular seals, from .250" to

25 feet in diameter, have been used under moderate flange loading to prevent leakage at temperatures of -423°F to 2200°F , pressures from vacuums to 50,000 psi and under corrosive or radioactive conditions.

Vented or gas filled; plated, coated or highly polished; circular or non-circular, there's one that will keep your critical joint from becoming a leaker. Ask us. We're the sealers.



ADVANCED MONITEMP—FOR PRECISE TEMPERATURE CONTROL

When temperature measurement and/or control is required in the laboratory or on the processing line, Advanced's modular design Monitemp temperature control equipment will do the job. Ask your Advanced representative.

**THIS FREE
BOOKLET
TELLS OUR
WHOLE METAL
SEAL STORY**



THE ADVANCED PRODUCTS CO.

33 Defco Park Rd., North Haven, Conn. 06473 U.S.A.
Tel.: (203) 239-3341—Telex: 096-3409—Cable-Wright

WESTERN OFFICE: 8921 S. Sepulveda Blvd., Los Angeles,
California 90045—Tel.: (213) 776-3787—Telex: 06-74055

CAN YOU AVOID duplicating someone else's work?



YES.

When there's *Solid State Abstracts Journal* to keep you up-to-the-minute on what's new all over the world. Our editors comb over 550 sources to give you the latest in the theory, production, and use of solid state materials. Periodicals, government reports, conference proceedings, books, dissertations, and patents are abstracted, indexed, cross-referenced, and published monthly in SSAJ. A quick trip to the reference library tells you what you need to know. Stop wasting your time on problems that have already been solved, write for more information about SSAJ and its companion publications, *Electronics Abstracts Journal* and *Information Processing Journal*. Then have a talk with your reference librarian.

Cambridge Communications Corp.,
1612 "K" St., N.W., Washington, D. C.
20006, U.S.A.



CAMBRIDGE COMMUNICATIONS CORPORATION

TION AVS, LOS ALAMOS SCIENTIFIC
LABORATORY ☐ Los Alamos,
N. M. (C. Winkelman) 8/68

- 30-3 Instrument Conference, Exhibit
and Education Symposium ☐
INSTRUMENT SOCIETY OF AMERICA
☐ Memphis, Tenn. (D. L. Mc-
Pherson) 12/68

MAY 1969

- 2 ☐ ELECTRON AND ATOMIC PHYS-
ICS DIV.—APS ☐ Washington,
D. C. (W. W. Havens Jr) 11/68

- 3-8 Annual Meeting ☐ AMERICAN CE-
RAMIC SOCIETY ☐ Columbus,
Ohio (D. W. Readey) 2/69

- 4-9 Spring Meeting ☐ ELECTRO-
CHEMICAL SOCIETY ☐ New York
(Electrochemical Society) 8/68

- 5-7 Aerospace Instrumentation Sym-
posium ☐ INSTRUMENT SOCIETY
OF AMERICA ☐ Las Vegas, Ne-
vada (D. Limbacher) 12/68

- 6-8 Frequency Control Symposium ☐
ELECTRONIC COMPONENTS LAB-
ORATORY, US ARMY ELECTRONICS
COMMAND ☐ Fort Monmouth,
N. J. (Director, Electronic Com-
ponents Lab.) 12/68

- 6-8 Nuclear Electronics Symposium
☐ NORTH ITALY SECTION, IEEE ☐
Ispra, Italy (Luciano Stanchi)
12/68

- 6-9 • Nuclear Track Registration in In-
sulating Solids and Applications
☐ Clermont-Ferrand (Jourentra,
Faculté des Sciences, 34, av. Car-
not, 63 Clermont-Ferrand,
France) 3/69

- 7-9 Annual Symposium ☐ AVS SOUTH-
WEST SECTION (R. P. Fedchenko)
10/68

- 12-15 Symposium on Spectroscopy ☐
CHICAGO SECTION-SOCIETY FOR
APPLIED SPECTROSCOPY, CHICAGO
GAS CHROMATOGRAPHY GROUP ☐
Chicago (R. L. Terry) 12/68

- 15 • Forefront in Optics ☐ OSA NEW
ENGLAND SECTION ☐ Worcester
Polytechnic Institute (B. Hana-
tow, Research Center, American
Optical Corp., Southbridge,
Mass., 01550) 3/69

- 14-17 ☐ ANS ISOTOPES AND RADIATION
DIV. ☐ San Juan, P. R. (O. J.
Du Temple)

- 18-23 Mass Spectrometry ☐ AMERICAN
SOCIETY FOR TESTING AND MATE-
RIALS ☐ Dallas (J. M. McCrea)
1/69

- 19-21 Offshore Technology ☐ AMERI-
CAN INSTITUTE OF MINING,
METALLURGICAL AND PETROLEUM
ENGINEERS ☐ Houston, Tex. (C.
Karlsen) 8/68

- 21-23 Electron, Ion, and Laser Beam
Technology ☐ IEEE, NBS, AVS,
UNIVERSITY OF MARYLAND ☐
Gaithersburg, Md. (L. Marton)
2/69

- 22-23 • Applied Magnetism ☐ IEEE ☐
Washington, D.C. (O. Kiltie,
Ballastan Corp., Executive Blvd.,
Fort Wayne, Ind. 46808) 3/69

- 26-28 Laser Engineering ☐ IEEE ☐
Washington, D. C. (F. R. Arams)
8/16

- 27-30 Annual Meeting ☐ SOCIÉTÉ DE
CHIMIE PHYSIQUE ☐ Paris (Sec-
rétaire Général de la Société de
Chimie physique) 10/68

JUNE 1969

- 2-6 Radiation Damage in Reactor
Materials ☐ IAEA ☐ Vienna, Aus-
tria (J. H. Kane) 2/69

- 8-12 Annual Meeting ☐ HEALTH PHYS-
ICS SOCIETY ☐ Pittsburgh, Pa.
(R. F. Cowing) 10/68

- 12-13 • Kinetic Equations ☐ Cornell U.
(L. Liboff, Clark Hall, Cornell
U., Ithaca, N.Y., 14850) by in-
vitation only 3/69

- 15-28 • Magnetism ☐ INTERNATIONAL
CENTER FOR ADVANCED STUDIES ☐
Chania, Crete (E. D. Haide-
menakis, 2 Rue de Furstenberg,
Paris 6^e, France) 3/69

- 16, 17 Polymers in High Performance
Applications ☐ London (The
Plastics Institute) 12/68

- 16-18 Structures of Water and Aqueous
Solutions ☐ U. OF CHICAGO (G.
E. Walrafen) 2/69

- 16-18 Fluid and Plasma Dynamics ☐
AMERICAN INSTITUTE OF AERO-
NAUTICS AND ASTRONAUTICS ☐
San Francisco (P. A. Libby) 1/69

- 16-18 Thermophysics Conference ☐
AMERICAN INSTITUTE OF AERO-
NAUTICS AND ASTRONAUTICS ☐
San Francisco (E. R. Streed)
1/69

- 16-19 Annual Meeting ☐ ANS ☐ Seat-
tle, Wash. (O. J. Du Temple)
11/68

- 16-20 Metal-Ammonia Solutions ☐ COR-
NELL U. ☐ Ithaca, N.Y. (J. J. La-
gowski) 2/69

- 16-20 • Conference on Carbon ☐ AMERI-
CAN CARBON COMMITTEE ☐
Boston (A. I. Medalia, Cabot
Corp., Billerica, Mass. 01821)
3/69

- 17-20 Planning Challenges of the 70's
in Space and the Public Domain
☐ OPERATIONS RESEARCH SOCI-
ETY OF AMERICA, AMERICAN AS-
TRONAUTICAL SOCIETY ☐ Denver,
Colo. (J. G. Shaffer) 12/68

- 18-20 Summer East Meeting ☐ APS ☐
Rochester, N. Y. (W. W. Havens
Jr) 6/68

- 23-25 Shock Tubes ☐ APS ☐ Toronto

- 23-25 Summer Meeting ☐ AAPT ☐ St.
Louis, Mo.

- 23-27 Annual Meeting ☐ SOCIETY OF
NUCLEAR MEDICINE ☐ New Or-
leans, La. (S. N. Turiel) 11/68

- 23-27 Conference on Plasma Physics

X-RAY SPECTROSCOPIST

Major manufacturer of X-ray
fluorescence instrumentation has
outstanding professional oppor-
tunity for a man with a back-
ground in X-ray emission spec-
troscopy. Basic requirements are
a B.S. degree in chemistry or
physics, a sound knowledge of
the fundamentals of X-ray gen-
eration, dispersion, detection,
and treatment of experimental
data plus 1 to 5 years of analyt-
ical experience. Send resume in
confidence.

APPLIED RESEARCH LABORATORIES

Subsidiary of Bausch & Lomb

P. O. Box 129

Sunland, California 91040

THE DEPARTMENT OF PHYSICS

CARLETON UNIVERSITY OTTAWA, CANADA

invites applications for Post-doc-
toral Fellowships for work in ex-
perimental elementary particle
physics. Current active programs
exist in boson spectroscopy and
studies of muonic atoms. Annual
stipends of \$6000 to 7200 (accord-
ing to dependents) are income tax
exempt. Return economy air fare
available to an accepted Fellow,
and, if he is married, to his wife.

The Department offers graduate
programs leading to the M.Sc. and
Ph.D. degrees in the following fields:
theoretical and experimental ele-
mentary particle physics, experi-
mental nuclear physics and mass
spectroscopy applied to geochron-
ology. Application forms, further
information on programs, and infor-
mation on financial support may be
had by writing to:

The Chairman,

Department of Physics,

CARLETON UNIVERSITY

Colonel By Drive,

Ottawa 1, Ontario, Canada.



RADIANT POWER KIT

\$840

generate infrared, visible and ultraviolet power

Now, in one complete package, you can perform functions requiring concentrated intense heat or light... aging and thermal stress testing... soldering and unsoldering... heat shrinkage and curing... evaporation and outgassing in air or vacuum... material softening and melting... many, many more.

The CINTRA Model 506 Thermal/Light Source is rich in infrared, visible and ultraviolet radiation. The controllable radiant power from a Tungsten Halogen Lamp is focused to a convenient work area outside the quartz exit window. Constant power outputs to 150 watts per cm^2 at effective temperatures to 3400°K are obtainable.

Let me know if the CINTRA Model 506 Thermal/Light Source will work in my application:

NAME _____

COMPANY _____

ADDRESS _____

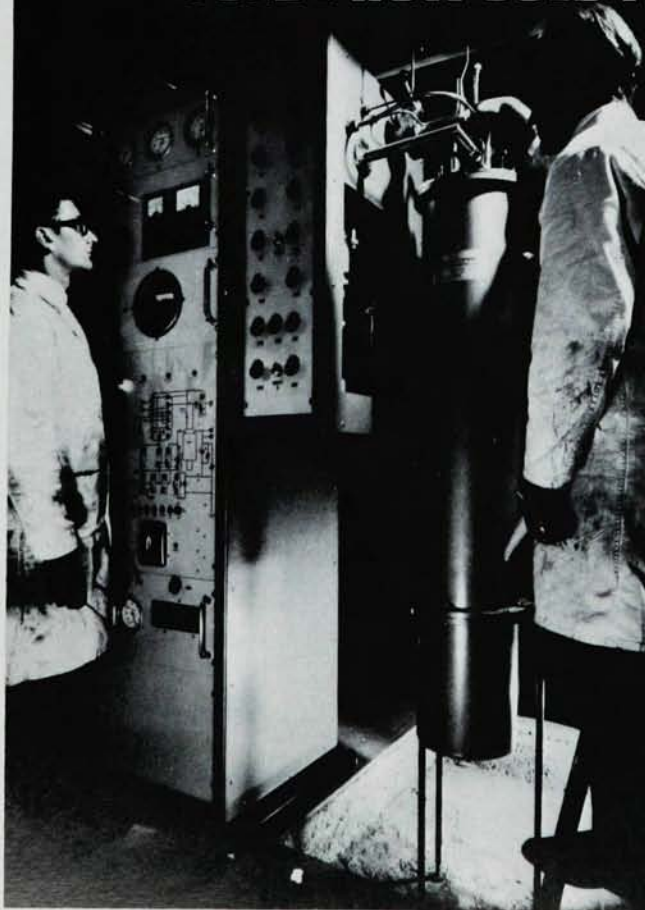
CITY & STATE _____ ZIP _____

440 Logue Avenue
Mountain View, California 94040
(415) 969-9230



Physics International Company

COLD! HOW COLD?



WANT TO WORK BELOW 0.1°K?

Fine-no problem

A Harwell Dilution Refrigerator can work down to nearly ten times colder.

USE THIS NEW ULTRA-COLD SUPPLY for experiments with solid state - polarised targets - He^3 and He^4 properties - Mössbauer effect etc.

THE COMPLETE PACKAGE comes in several versions; includes pumps, gas-handling system, control consol, safety interlocks and instrumentation or the cryostat may be supplied separately.

OXFORD INSTRUMENT CORPORATION



P.O. BOX 6404
ALBANY CALIFORNIA 94716
(415) 525-9372

Suppliers of
CRYOGENIC EQUIPMENT—Modular Dewars and all types of specialised Helium Cryostats.

SUPERCONDUCTIVE MAGNETS—Large - Small - Splitcoil - High field - High homogeneity - Quadrupoles etc.

INSTRUMENTATION - Current supplies and Sweep units - Level indicators - Thermometry - Temperature controllers.

PHYSICIST OR ELECTRICAL ENGINEER for Mass Spectrometry Research & Development

Must be completely familiar with focusing properties and second-order aberration theory in double-focusing mass spectrometers. Send full resume to Dr. C. F. Robinson, vice president:

**APPLIED RESEARCH
LABORATORIES**
HASLER RESEARCH CENTER
95 La Patera Lane
Goleta, California 93017

HOLOGRAPHY

STATE OF THE ART REVIEW... 1969

The current volume of **State of the Art Review** offers quick and easy access to vital information regarding **HOLOGRAPHY** and related fields.

Over **900 REFERENCES**, including dissertations and U.S. Government R & D Reports.

Detailed specifications of **21 PATENTS**. Majority issued in 1968. Profusely illustrated.

FOREIGN MATERIAL from British, German, French, Japanese and Russian sources.

An essential reference volume for scientists, engineers and educators.

March release. \$12.00 postpaid.

Order directly from the publisher:

optosonic press

Dept. PT

Box 883, Ansonia Post Office
New York, N. Y. 10023

JUNE 1969

and Controlled Fusion ☐ FOM-INSTITUTE FOR PLASMA PHYSICS ☐ Utrecht, Netherlands (FOM-Institute for Plasma Physics) 11/68

25-28 • **Annual Meeting** ☐ CANADIAN ASSOC. OF PHYSICISTS ☐ Waterloo, Ontario (D. D. Betts, Physics Dept., University of Alberta, Edmonton, Canada) [3/15] 3/69

29-12 • **Optical Properties of Solids** ☐ INTERNATIONAL CENTER FOR ADVANCED STUDIES ☐ Chania, Crete (E. D. Haide-menaskis, 2 Rue de Furstenberg, Paris 6^e, France) 3/69

30-1 **Fibres for Composites: Strength, Structure and Stability** ☐ MATERIALS AND TESTING AND CARBON AND GRAPHITE GROUPS, IPPS ☐ University of Sussex, (Meetings Officer) 2/69

30-4 **From Theoretical Physics to Biology** ☐ THERMODYNAMICS AND STATISTICAL MECHANICS COMMISSION, IUPAP ☐ Versailles, France (R. Kubo) 2/69

JULY 1969

2-4 **Lasers in Medicine** ☐ IPPS, ROYAL SOCIETY OF MEDICINE, OPHTHALMOLOGICAL SOCIETY, HOSPITAL PHYSICISTS ASSOCIATION ☐ London (Meetings Officer) 1/69

7-11 • **Nuclear and Space Radiation Effects.** ☐ IEEE ☐ Pennsylvania State U. (E. A. Burke, AFCRL (CRWH) Stop 30, L. G. Hanscom Field, Bedford, Mass. 01730) 3/69

8-10 **Three-Body Problem in Nuclear and Particle Physics** ☐ Birmingham, England (Administrative Officer, Dept. of Physics) 1/69

13-19 • **Short Laser Pulses and Coherent Interactions** ☐ INTERNATIONAL CENTER FOR ADVANCED STUDIES ☐ Chania, Crete (E. D. Haide-menaskis, 2 Rue de Furstenberg, Paris 6^e, France) 3/69

14-18 **Atomic Absorption Spectroscopy** ☐ IPPS ☐ Sheffield, England (AAS Conference Secretary) 8/68

14-19 **Instruments and Techniques** ☐ INTERNATIONAL COMMISSION FOR OPTICS, IUPAP ☐ Reading, England (W. L. Hyde) 2/69

15-18 • **Nuclear Reactions Induced by Heavy Ions** ☐ MAX PLANCK INSTITUT FÜR KERNPHYSIK, IUPAP (R. Bock, Max-Planck Institute für Kernphysik, 69 Heidelberg 1, Germany) 3/69

16-18 **Electron Microprobe Analysis** ☐ ELECTRON PROBE ANALYSIS SOCIETY OF AMERICA ☐ Pasadena, Calif. (A. A. Chodos) 1/69

20-24 **Dielectric Materials, Measurements and Applications** ☐ INSTITUTION OF ELECTRICAL ENGINEERS, IEEE ☐ University of Lancaster (Conference Dept., IEE,

Alfa Crystals Manufacturer of Optical Crystals Metal Crystals Semi- conductors Announces

NEW 1969 CATALOGUE
Now available from
Alfa Crystals. Listed
are metal single crystals
Bridgman, Czochralski and
Electron Beam grown.
Optical crystals and
Semiconductor crystals.

ALFA CRYSTALS
 **VENTRON**
ELECTRONICS CORP.
Box 412
Bradford, Pennsylvania 16701

CRYSTALAB

*offers total support
for all your light
modulation problems*



- Modulators — including low voltage models exhibiting better than 92% optical transmission. Spectral range of 0.3 to 1.7 microns. Devices for pulsed and CW lasers. Modulating frequencies DC to 100 MHz.
- Q-Switches — designed to generate high power optical pulses. Useful in a variety of shutter applications. Available in many aperture sizes.
- 2nd Harmonic Generators — for producing maximum harmonic output power in the visible spectrum.
- Crystals — KDP, 99% deuterated KD*P, and Lithium Niobate, formulated and grown under exacting laboratory conditions.
- Optical Fabrication — precision optics to meet rigorous customer requirements.

Write today for our free catalog.

CRYSTALAB PRODUCTS CORP.

19 LEGION PLACE, ROCHELLE PARK, NEW JERSEY 07662
201-843-5780

Specialist in Electro-Optics and Crystal Fabrication

the interdisciplinary approach

That is the basic precept on which AVCO Everett's Laboratory functions. AVCO provides for an interchange of ideas in a well-equipped laboratory that is run by research scientists.

Our investigations range from high temperature gas dynamics, plasma dynamics, aerophysics, atomic physics, reentry physics, laser physics and magneto-hydrodynamics to medical engineering research. If you are interested in any of these fields write Mr. William Brady, Personnel Director, who will send you bibliographies and abstracts of our recent publications. Then you'll have a better basis to judge us. We think you'll see what we mean.

AVCO
EVERETT
RESEARCH
LABORATORY

2385 REVERE BEACH PARKWAY
EVERETT, MASSACHUSETTS 02149

An Equal Opportunity Employer

Savoy Place, London, W.C. 2) 3/69

- 21-24 • **Clustering Phenomena in Nuclei** □ MINISTRY OF SCIENTIFIC RESEARCH OF W. GERMANY, GERMAN PHYSICAL SOCIETY, IAEA □ Bochum, W. Germany (P. Kramer, *Theoretical Physics Dept., Gartenstrabe 47 Tübingen, W. Germany*) 3/69

- 27-9 • **High Energy Physics** □ INTERNATIONAL CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haidemenakis, 2 Rue de Furstenberg, Paris 6°, France) 3/69

- 28-1 ♦ **Conference on Physics and Chemistry of Fission** □ IAEA (IAEA) 11/68

- 28-2 **Physics of Electron and Atomic Collisions** □ MIT □ Cambridge, Mass. (I. Amdur) [4/1] 2/69

AUGUST 1969

- 4-7 • **Raman Spectroscopy** □ CARLETON U. □ Ottawa (J. A. Koningstein, *Chemistry Dept., Carleton University, Ottawa, Canada*) 3/69

- 10-23 • **Fluctuation Phenomena** □ INTERNATIONAL CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haidemenakis, 2 Rue de Furstenberg, Paris 6°, France) 3/69

- 11-13 □ AMERICAN COMMITTEE FOR CRYSTAL GROWTH □ NBS, Washington, D.C. (C. S. Sahagian) [5/1] 2/69

- 11-14 **Symposium on Electron and Nuclear Magnetic Resonance** □ AUSTRALIAN ACADEMY OF SCIENCE □ Clayton, Victoria, Australia (Executive Secretary) 11/68

- 11-15 **Medical Physics** □ US NATIONAL COMMITTEE FOR MEDICAL PHYSICS, INTERNATIONAL ORGANIZATION FOR MEDICAL PHYSICS □ Boston (E. W. Webster) 8/68

- 11-15 • **Radioactivity in Nuclear Spectroscopy** □ IUPAP, AEROSPACE RESEARCH LAB., US AIR FORCE, VANDERBILT U. (J. H. Hamilton, *Physics Dept., Vanderbilt U., Nashville, Tenn., 37203*) 3/69

- 12-14 • □ AAS □ State University of New York at Albany (G. C. McVittie, *University of Illinois Observatory, Urbana, Ill., 61801*) 3/69

- 12-15 **Conference on Photoconductivity** □ OFFICE OF NAVAL RESEARCH □ Stanford U. (G. S. Picus) [3/15] 12/68

- 13-15 **Optical Contamination in Space** □ OSA ROCKY MOUNTAIN SECTION □ Aspen, Colo. (J. A. Muscari) 2/69

- 13-21 **International Congress** □ INTERNATIONAL UNION OF CRYSTALLOG-

GRAPHY □ Stony Brook, N. Y. (*International Union of Crystallography*) 7/68

- 17-23 • **Space Research and Exploration** □ INTERNATIONAL CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haidemenakis, 2 Rue de Furstenberg, Paris 6°, France) 3/69

- 17-24 **NMR Symposium** □ CHEMICAL INSTITUTE OF CANADA, U. OF TORONTO □ Toronto (*Chemical Institute of Canada*) 1/69

- 24-29 **Gas Dynamics of Explosions and Reactive Systems** □ INTERNATIONAL ACADEMY OF ASTRONAUTICS AND THE USSR ACADEMY OF SCIENCES □ Novosibirsk, USSR (*Office of the International Academy of Astronautics*) 2/69

- 25-29 **Conference on Luminescence** □ IUPAP, APS □ U. of Delaware (F. Williams) [5/15] 1/69

- 25-30 **Conference on Properties of Nuclear States** □ U. of Montreal (G. T. Ewan) 11/68

- 26-28 **Computerized Electronics** □ CORNELL U. □ Ithaca, N. Y. (H. J. Carlin) 11/68

- 26-29 **Superconductivity** □ AIR FORCE OFFICE OF SCIENTIFIC RESEARCH, IUPAP □ Stanford U. (M. D. O'Neill) [5/15] 2/69

- 27-2 **High Energy Accelerators** □ HIGH ENERGY NUCLEAR PHYSICS COMMISSION, IUPAP □ USSR (L. Van Hove) 2/69

- 29-3 **INTERNATIONAL BIOPHYSICS CONGRESS** □ Cambridge, Mass. (W. Rosenblith) 12/68

- 31-6 • **Phenomena in Ionized Gases** □ Bucharest (E. Badareu, *Conf. on Phenomena in Ionized Gases, Căsuța Postală 3082, Bucharest, Rumania*) [4/15] 3/69

SEPTEMBER 1969

- 2-4 **Summer West Meeting** □ APS □ Honolulu

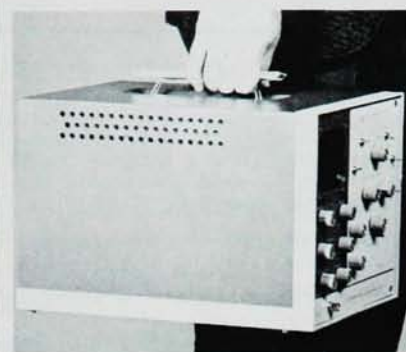
- 2-6 • **Molecular Structure and Spectroscopy** □ Ohio State U. (K. N. Rao, *Dept. of Physics, Ohio State U., 174 W. 18th Ave. Columbus, Ohio 43210*) 3/69

- 3-5 • **Nonsuperconducting Electron Tunneling** □ Prouts Neck, Me. (J. M. Rowell, *Bell Telephone Labs., Murray Hill, N.J.*) 3/69

- 3-5 **High Polymer Forum** □ CHEMICAL INSTITUTE OF CANADA, NATIONAL RESEARCH COUNCIL OF CANADA □ Kingston, Ontario (J. F. Henderson) [4/30] 2/69

- 3-5 **Ultrasonic Attenuation and Internal Friction in Crystalline Solids** □ BROWN U. □ Providence, R.I. (C. Elbaum) [3/1] 2/69

- 4-9 **Ferroelectricity** □ SOLID STATE COMMISSION, IUPAP □ Kyoto, Japan (W. Boas) 2/69 □



\$3322

PULSE AMPLITUDE PROBABILITY DISTRIBUTION ANALYZER- MODEL 501

- 1000 CHANNEL ADC
- 200 WORD MEMORY
- X - α - γ - ANALYSIS
- RESEARCH QUALITY WITHOUT EXPENSIVE "FRILLS"
- STUDENT LAB MULTI-CHANNEL AT SINGLE CHANNEL SYSTEM PRICE
- PORTABLE ($\ll 1\text{ft}^3$ - 18 lbs)
- FOR THE FIRST TIME AN ANALYZER DESIGNED BY DETECTOR MAKERS FOR DETECTOR USERS

WRITE OR CALL FOR
DETAILS ON THE
DISTRIBUTION ANALYZER 501

**nuclear
diodes inc.**
box 135, prairie view, illinois 60069
Phone: 312-634-3870