

CALENDAR

This is a partial calendar comprising only notices received since last month. A complete calendar is published every third month. Readers are referred to the last one, published in January, if they wish a comprehensive listing of notices. The April issue will contain the next complete calendar.

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 and the original PHYSICS TODAY reference.

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
 AFCRL—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

MARCH 1970

- 20 • ☐ N. Y. ACAD. SCI. ☐ New York, N. Y. (J. Lebowitz, *Belfer Graduate School of Science, Amsterdam Ave., New York, N. Y. 10033*) 3/70
- 23-24 • Acoustic Surface Waves ☐ IBM ☐ Yorktown Heights, N. Y. (R. Pole, PO Box 218, Yorktown Heights, N. Y. 10598) 3/70
- 23-25 • Small Accelerators ☐ OAK RIDGE ASSOCIATED UNIVS. ☐ Oak Ridge, Tenn. (J. Duggan, *Oak Ridge Associated Univs., PO Box 117, Oak Ridge, Tenn. 37830*) 3/70

APRIL 1970

- 5-9 • Cybernetics ☐ IEEE, NACHRICHTENTECHNISCHE GESELLSCHAFT IM VDE, ELEKTROTECHNISCHER VEREIN BERLIN IM VDE, ☐ Berlin (*Elektrotechnischer Verein Berlin im VDE, Bismarckstrasse 33, D-1 Berlin 12, Germany*) 3/70
- 7-9 ♦ Nuclear Physics ☐ IPPS ☐ Guildford, Surrey, UK (*Meetings Officer, 47 Belgrave Square, London, S. W. 1, UK*) 7/69

Topics: Nuclear surface; isospin and charge exchange; deformations, correlations and clustering; structure and spectroscopy of nuclear states; electromagnetic interactions; new developments in nuclear theory.

- 10, 11 • ☐ AAPT ☐ Williamsport, Pa. (M. Fineman, *Lycoming College, Williamsport, Pa. 17701*) 3/70
- 12-16 • ☐ INSTITUTE OF ENVIRONMENTAL SCIENCES ☐ Boston (*Institute of Environmental Sciences, 940 E. Northwest Highway, Mt. Prospect, Ill. 60056*) 3/70
- 13, 14 • Polymer Rheology ☐ UNIV. OF WISCONSIN ☐ Madison (J. Quigley, *Univ. of Wisconsin, 432 North Lake St., Madison, Wisc. 53706*) 3/70

Topics: Measurement techniques; fluid-flow problems; molecular theories; solid-state problems.

- 13-16 • Atomic and Molecular ☐ IPPS ☐ London (*Meetings Officer, 47 Belgrave Square, London S. W. 1*) 3/70

Topics: Heavy-particle collisions and chemical processes; ultraviolet and x-ray spectroscopy; plasma and solar spectroscopy; electron collisions; far infrared and submillimeter spectroscopy; magnetic resonance and hyperfine structure; isotope shift and quantum optics.

- 15-17 • Defects in Semiconductors ☐ IPPS ☐ Reading, UK (*Meetings Officer, 47 Belgrave Square, London, S. W. 1, UK*) 3/70

- 18 • ☐ AAPT ☐ Sacramento (P. McCormick, *University of Santa Clara, Santa Clara, Calif. 95053*) 3/70

Partial calendar—see note at opening.

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Solid State Physics
Information Processing
Radio Physics and Astronomy
Radar
Computer Applications
Space Surveillance Techniques
Re-entry Physics
Space Communications
A description of the Laboratory's work will be sent upon request

- 20-24 • ☐ AMERICAN GEOPHYS. UNION
NATL. ACAD. SCI., NATL. RES.
COUNCIL ☐ Wash., D. C. (W.
Smith, AGU, 2100 Pennsylvania
Ave., N. W., Wash., D. C. 20037)
3/70

MAY 1970

- 4-7 • **Ion Implantation in Semiconduc-**
tors ☐ AIR FORCE CAMBRIDGE RE-
SEARCH LABS, AMERICAN ROCK-
WELL SCIENCE CENTER AND
HUGHES RESEARCH LABS ☐ Thou-
sand Oaks, Calif. (AFCRL
(CRWG/Sven Roosild), L. G.
Hanscom Field, Bedford, Mass.
01730) 3/70
- 14 • **Modern Methods of Analyses at**
Surfaces ☐ AMERICAN VACUUM
SOCIETY ☐ Murray Hill, N. J. (S.
Mader, IBM, PO Box 218, York-
town Heights, N. Y. 10598) 3/70
- 20, 21 • **Materials for Optical Systems** ☐
OSA ☐ Cambridge (W. Barnes,
Itek Corp., 10 Maguire Rd., Lex-
ington, Mass. 02173) 3/70
- 25-27 • **Analysis Instrumentation** ☐ IN-
STRUMENT SOCIETY OF AMERICA ☐
Pittsburgh (W. Dailey, Mine
Safety Appliances Co., 201 North
Braddock Ave., Pittsburgh, Pa.
15208) 3/70

Topics: Environmental pollution; chromatogra-
phy; digital computers applied to process chro-
matography; sampling systems and electrochemi-
cal, chemical, optical, physical and radiation
methods of analysis.

- 27-29 • **Low Energy Accelerators** ☐
BOROUGH POLYTECHNIC ☐ London
(A. Jiggins, Borough Polytechnic,
London, S. E. 1) 3/70

Topics: Neutron production and other reac-
tions; surface physics; ion implantation; atomic
collision probing techniques for studying solid
lattices; beam foil spectroscopy; radiation dam-
age; activation analysis.

JUNE 1970

- 14-19 • **Mass Spectrometry** ☐ AMERICAN
SOCIETY FOR MASS SPECTROMETRY
☐ San Francisco (J. McCrea,
U. S. Steel Corp., Monroeville,
Pa. 15146) 3/70
- 15-17 • **Applied Superconductivity** ☐
NBS, UNIV. OF COLO., OFFICE OF
NAVAL RES., AM. INST. PHYS. ☐
Boulder, Colo. (R. Kropschot,
NBS, Boulder, Colo. 80302) 3/70
- 17, 18 • **Reacting Turbulent Flows** ☐
AMERICAN INST. OF AERONAUTICS
AND ASTRONAUTICS ☐ San Diego
(AIAA, 1290 Sixth Ave., New
York, N. Y. 10013) 3/70
- 29-1 • **Thermophysics** ☐ AMERICAN INST.
OF AERONAUTICS AND ASTRONAU-
TICS ☐ Los Angeles (AIAA, 1290
Sixth Ave., New York, N. Y.
10013) 3/70
- 29-3 • **Rarefied Gas Dynamics** ☐ Pisa,
Italy (A. Ferri, N. Y. Univ. Aero-

AUGUST 1970

- 3-7 • **Precision Measurements** ☐ IUPAP,
COMMITTEE ON DATA FOR SCIENCE
AND TECHNOLOGY OF THE INTL.
COUNCIL OF SCIENTIFIC UNIONS,
COMMITTEE ON FUNDAMENTAL
CONSTANTS OF THE US NATIONAL
ACADEMY OF SCIENCES AND NA-
TIONAL RESEARCH COUNCIL, NBS,
BUREAU INTERNATIONAL DE POIDS
ET MESURES ☐ Gaithersburg, Md.
(L. Branscomb, Room A363, Bldg.
221, NBS, Washington, D. C.
20234) [4/70] 1/70 (Note new
date.)
- 5-7 • **Applications of X-Ray Analysis** ☐
UNIV. OF DENVER ☐ Denver (J.
Newkirk, Denver Research Inst.,
University Park Campus, Denver,
Colo. 80210) [4/70] 3/70
- 18-26 • **International Congress on Acous-**
tics ☐ Budapest (Prof. Tarnóczy,
7th International Congress, Buda-
pest, VIII, Puskin u. 5-7, Hun-
gary) 3/70
- 19-21 • **Astrodynamics** ☐ AAS-AMERICAN
INST. OF AERONAUTICS AND ASTRO-
NAUTICS ☐ Santa Barbara (AIAA,
1290 Sixth Ave., New York, N. Y.
10013) 3/70
- 31-4 • **Dynamic Studies with Radioiso-**
topes in Clinical Medicine and
Research ☐ IAEA ☐ Rotterdam,
Netherlands (T. Nagai, IAEA,
Kärntner Ring 11, PO Box 590,
A-1011, Vienna, Austria) [4/70]
3/70
- 31-4 • **Conference on Dynamics of Mo-**
lecular Collisions ☐ ORNL ☐ Oak
Ridge, Tenn. (E. Greene, Brown
University, Providence, R. I.
02912) 3/70

SEPTEMBER 1970

- 6-11 • **Hyperfine Interactions Detected**
by Nuclear Radiation ☐ IUPAP ☐
Rehovoth, Israel (G. Goldring,
The Weizmann Institute of Sci-
ence, Rehovoth, Israel) 3/70
- 7-11 • ☐ BRITISH NATL. COMMITTEE ON
DATA FOR SCIENCE AND TECHNOL-
OGY (N. Robinson, The Royal So-
ciety, 6 Carlton House Terrace,
London S. W. 1, UK) 3/70
- 7-11 • **Cybernetics** ☐ ASSOCIATION IN-
TERNATIONALE CYBERNETIQUE ☐
Namur, Belgium (Secretariat,
AIC, Palais des Expositions, Place
André Rijckmans, Namur, Bel-
gium) 3/70
- 8-12 • **Molecular Structure and Spec-**
troscopy ☐ OHIO STATE UNIVER-
SITY ☐ Columbus, Ohio (K. Na-
hari Rao, Ohio State Univ., Dept.
of Physics, 174 W. 18th Ave., Co-
lumbus, Ohio 43210) 3/70
- 14-18 • **Organic Solid-State Chemistry** ☐
INTL. UNION OF CRYSTALLOGRA-

Partial calendar—see note at opening.

SUMMER SCHOOL IN MEDIUM ENERGY NUCLEAR PHYSICS at Banff, Alberta (August 16-28, 1970)

The School is sponsored by the
Division of Nuclear and Theoretical
Physics of the Canadian Association
of Physicists, with support from the
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The purpose of the School is to study
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ton-Nucleus Scattering (3) Diffraction
Theory (4) Interaction of μ Meson with
Nuclei (5) Nuclear Structure Studies.

There will be six guest speakers
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Applications are invited from in-
terested persons to attend the Sum-
mer School. Successful applicants
may be able to obtain full or partial
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Dr. G. C. Neilson, Chairman
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Canadian Association of
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Nuclear Research Centre
The University of Alberta
Edmonton, Alberta, Canada

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annum.
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varies—
(a) For Lecturers: up to £488 per
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(b) For Assistant Lecturers: up to
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- (iii) **Housing:** If available, housing is pro-
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University housing.
- (iv) **Medical Benefits** are provided under
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- (v) **Superannuation:** Staff members are
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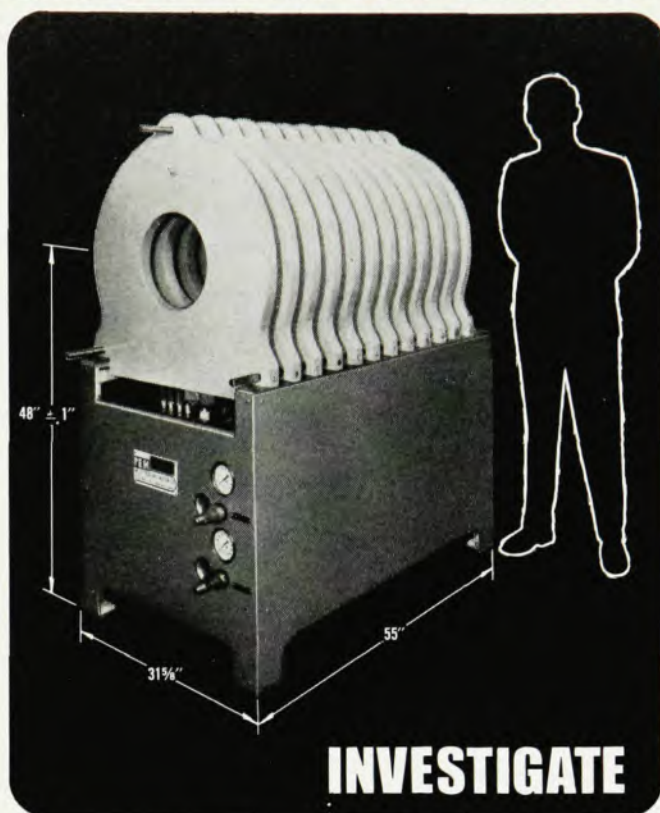
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This clearly written text offers an essentially self-contained introduction to the subject which is suitable for anyone with a background knowledge of electrodynamics and hydrodynamics. The mathematics required is in the normal repertoire of undergraduates studying mathematics, physics, astronomy or electrical engineering. A particular feature of the book is the authors' comparison of experimental results with predictions from theory.

A full selection of problems is provided at the end of each chapter. A select list of references is also included, together with recommendations for further reading. Although written for students, this book will also be useful to the trained physicist or engineer who wishes to learn about plasma physics.

\$10.75

NEW LISTING OF SHORT COURSES AND SCHOOLS

23-27 MARCH

Field-Ion and Field-Emission Microscopy □ Gainesville (J. J. Hren, Dept. of Metallurgical and Materials Engineering, Univ. of Florida, Gainesville, Fla. 32601)

Topics: Geometry of surfaces and computer techniques; electronic structure of surfaces; field electron emission; field ionization and image formation; field evaporation; field-ion mass spectrometry; adsorption, surface, migration and thin films; interpretation of defect structures; grain boundaries and interfaces; metallurgical applications; atomic order; experimental methods.

13-17 APRIL

Radiation Effects in Semiconductors □ Rolla (Extension Division, University of Missouri-Rolla, Rolla, Mo. 65401)

Topics: Interaction of radiation with matter; irradiation-produced defects in elemental and compound semiconductors; theory of surface states; effects of ionizing radiation on oxide-passivated and surface-controlled devices; permanent and transient effects of radiation on device characteristics; semiconductor-device models used in prediction of radiation effects and computer-aided design, analysis and simulation; ion implantation: fundamentals of implantation techniques, fabrication of ion-implantation devices.

16-18 APRIL

Thermal Pollution □ Boston (Institute of Environmental Sciences, 940 East Northwest Highway, Mt. Prospect, Ill. 60056)

19-29 APRIL

Advanced Statistical Mechanics and Thermodynamics □ UNIV. OF TEXAS AT AUSTIN □ Austin (Prof. I. Prigogine, University of Texas at Austin, Physics Building, Room 202, Austin, Texas, 78712)

Topics: Introduction to Equilibrium statistical mechanics and phase transitions; stochastic processes; quasi-particles and collective coordinates stochastic dynamical laws; non-equilibrium effects in chemical kinetics; interaction of light and matter; thermodynamics of biological systems; non-equilibrium statistical mechanics; transport phenomena in rarefied gases.

12-15 MAY

Radiation Quantities □ NBS □ Gaithersburg, Md. (E. H. Eisenhower, Center for Radiation Research, NBS,

Wash., D. C. 20234)

Topics: x-rays; dosimetry; measurement of beam parameters; beam handling and positioning techniques; calibration of neutron sources; thermal-neutron flux density; reactor neutron measurements; counting techniques; microcalorimetry; calibration of standard samples of radioactivity.

8-19 JUNE

Applied Optics □ London (Registrar, Imperial College, London S. W. 7, UK)

Topics: Gaussian optics; aberrations; image-forming systems; visual perception and photometry; polarization; thin films; sources and detectors; the physical theory of image formation; electron microscopy.

8-19 JUNE

X-ray Spectrometry □ Albany (H. Chessin, State University of New York at Albany, Dept. of Physics, 1400 Washington Ave., Albany, N. Y. 12203)

Topics: basic principles and techniques; nondispersive analysis; advanced techniques; mathematical methods and computer automation of modern x-ray spectrometers.

15-19 JUNE

Low Energy Electron Diffraction □ Brooklyn (R. Stern, Dept. of Physics, Polytechnic Inst. of Bklyn., 333 Jay St., Bklyn., N. Y. 11201)

Topics: Measurements of surface-sensitive parameters: work function, optical reflectivity, photoelectric and secondary electron spectroscopy; absorption; epitaxy; surface chemistry. Low-energy electron diffraction: kinematical and dynamical diffraction theory. Relationship between diffraction at high and low electron energies. Three-dimensional band structure; dispersion surfaces and dynamical diffraction intensities; inelastic processes in solids; practical experience in LEED; x-ray methods in electron scattering.

15 JUNE-24 JULY

Elementary Particles and Quantum Field Theory □ Waltham, Mass. (S. Deser, Dept. of Physics, Brandeis Univ., Waltham, Mass. 02154)

Topics: Quality; renormalization methods; anomalous commutators in field theory; Veneziano models; chirality; form-factor models.

22-26 JUNE

Nondestructive Testing □ Cambridge

(Director of Summer Session, Room E19-356, MIT, Cambridge, Mass. 02139)

Topics: Magnetic particle inspection; fluid penetrants; x-rays; eddy currents; ultrasonics, microwaves.

22 JUNE-3 JULY

Physics of Quantum Electronics □ Prescott, Ariz. (S. Jacobs, Optical Sciences Center, Univ. of Arizona, Tucson, Ariz. 85721)

Topics: Superconductivity phenomena; atomic coherence effects; nonlinear phenomena.

29 JUNE-4 JULY

Electrical Properties of Noncrystalline Materials □ Cambridge, UK. (R. P. Ferrier, Univ. of Cambridge, Free School Lane, Cambridge CB2, 3 RQ, UK)

Topics: Nature of a glass; conduction mechanisms; hopping versus band conduction; dielectric loss in glasses; liquid semiconductors; amorphous metallic alloys; technological applications of amorphous materials; survey of switching mechanisms.

18-20 AUGUST

Thermoluminescent Dosimetry □ Madison, Wisc. (J. R. Cameron, Dept. of Radiology, University Hospitals, Madison, Wisc. 53706)

31 AUGUST-9 SEPTEMBER

Magnetism—Current Topics □ NATO ADV. STUDY INST. □ La Colle sur Loup, France (S. Foner, Francis Bitter National Magnet Laboratory, MIT, Cambridge, Mass. 02139)

Topics: Metals and alloys; band magnetism; neutron diffraction; localized moments; spin fluctuations; dilute alloys; rare earth; hyperfine interactions; g-shifts and NMR; transport; selected topics in high fields.

8-18 SEPTEMBER

Fundamentals of X-ray Diffraction □ Brooklyn, N. Y. (D. Cattell, Polytechnic Institute of Brooklyn, 333 Jay Street, Bklyn., N. Y. 11201)

Topics: Interpretation of powder and single-crystal patterns; reflection and transmission topography; crystal structure; crystal texture; line broadening; stress-strain analysis.

SEPTEMBER 1970

PHY, IUPAC □ Rehovoth, Israel (M. Cohen, Weizmann Institute of Science, Rehovoth, Israel) 3/70

22-24 • **Physics and Nondestructive Testing** □ Chicago (W. McGonaggle, Symposium, PO Box 554, Elmhurst, Ill. 60126) 3/70

23-25 • **High-Energy Physics** □ IPPS □ Durham, UK (Meetings Officer, 47 Belgrave Square, London SW. 1, UK) 3/70

28-30 • **Metastable Metallic Alloys** □ IUPAP, EUR. PHYS. SOC., YUGOSLAV COUNCIL OF SCIENCE □ Brela, Yugoslavia (Conference on Metastable Alloys, PO Box 816, Zagreb, Yugoslavia) 3/70

Topics: Physical properties of supersaturated metallic solid solutions; nonequilibrium metallic crystalline phases and amorphous metallic alloys; metastable phases obtained by rapid quenching from the liquid state.

OCTOBER 1970

4-10 • □ INTL. ASTRONAUTICAL FEDERATION □ Constance, Germany

(I.A.F. Secretariat, 250 Rue St. Jacques, Paris 5, France) 3/70

11-17 • **Physics and Chemistry of Semiconductor Heterojunctions and Layer Structures** □ IUPAP, EUR. PHYS. SOC. □ Budapest, (Organizing Committee, Budapest, IV, Ujpest 1, PO Box 76, Hungary) 3/70

20, 21 • **Arc Symposium** □ APS □ Hartford, Conn. (R. Bullis, United Aircraft Research Lab., E. Hartford,

Partial calendar—see note at opening.

Positions Open

Associate Editor for PHYSICS TODAY

Individual with graduate training in physics to join staff of PHYSICS TODAY as Associate Editor beginning June 1 in N.Y.C. Review and edit authored articles, write copy for departments and occasional features; follow edited material through printing process. Interest and talent in writing necessary, work experience in journalism desirable but not required. Send resume with salary requirement to Personnel Office, AIP.

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La Salle College

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La Salle is an urban coeducational liberal arts college with a strong undergraduate physics major. The position would include teaching elementary and advanced lecture and laboratory sections. Address resumes to The Chairman, Dept. of Physics, 20th St. and Olney Ave., Philadelphia, Pa. 19141.

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DALHOUSIE UNIVERSITY

The Department of Physics has a vacancy at the level of Assistant Professor. All candidates will be considered, however preference will be given to a solid state theoretician whose interests and expertise are relevant to the current research of the department. This includes low temperature transport properties of metals and alloys and theoretical work on electrons in metals. Further details from and applications to **Chairman, Department of Physics, Dalhousie University, Halifax, N. S. Canada.**

AEROACOUSTICS

The Institute for Aerospace Studies of the University of Toronto has a vacancy effective July 1, 1970, or earlier in the field of aerodynamic noise at the assistant or associate professor level. Candidates should have a Ph.D. with strength in both experimental and theoretical aspects of the field. Duties would include teaching and research (with supervision of graduate students) to complement the existing program on the physics of jet noise and sonic boom.

Applications should be sent to **H. S. Ribner, Institute for Aerospace Studies, University of Toronto, Canada.** A curriculum vitae, detailing background and publications, should be included. Letters of reference are desirable but not essential, and material will be held in confidence if requested.

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**Dr. G. Papini, Chairman,
Physics Department,
University of Saskatchewan,
Regina Campus, Regina, Sask., Canada.**

Conn. 06108) 3/70

- 20-23 ♦ **Vacuum Symposium** □ AVS □
Washington, D. C. (J. R. Young,
General Electric Company, P.O.
Box 8, Schenectady, N. Y. 12301)
[6/70] 3/70

Topics: Vacuum science and technology; thin
films; surface science.

- 26-29 • □ **INSTRUMENT SOCIETY OF AMERICA** □ Philadelphia (S. Luna,
ISA, 530 William Penn Place,
Pittsburgh, Pa. 15219) [3/70]
3/70

NOVEMBER 1970

- 16-18 • **Solar Activity** □ AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS □ Huntsville, Ala.
(AIAA, 1290 Sixth Ave., N. Y.,
N. Y. 10013) 3/70

DECEMBER 1970

- 7-10 • □ **AMERICAN GEOPHYSICAL UNION**
□ San Francisco (W. Smith, 2100
Pennsylvania Ave., N. W., Wash.,
D. C. 20037) 3/70

APRIL 1971

- 5-8 • **Atomic and Molecular Physics** □
IPPS □ York, UK (Meetings Officer,
47 Belgrave Square, London,
S. W. 1, UK) 3/70

- 12-16 • □ **AMERICAN GEOPHYS. UNION,**
NATL. ACAD. SCI., NATL. RES.
COUNCIL □ Wash., D. C. (W.
Smith, AGU, 2100 Pennsylvania
Ave. N. W., Wash., D. C. 20037)
3/70

JUNE 1971

- 14-18 • **Molecular Structure and Spectroscopy** □ OHIO STATE UNIV. □
Columbus, Ohio (K. Nahari Rao,
174 West 18th Ave., Columbus,
Ohio 43210) 3/70

SEPTEMBER 1971

- 1-3 • **Pattern Recognition** □ IPPS □
Lancaster, UK (Meetings Officer,
47 Belgrave Square, London S.W.
1, UK) 3/70

- 13-17 • **Materials Symposium** □ INORGANIC MATERIALS RES. DIV. LAWRENCE RADIATION LAB, UNIV. OF CALIF., BERKELEY □ Berkeley (C. V. Peterson, Lawrence Radiation Laboratory, Berkeley, Calif. 94720) 3/70

Topics: Structure and properties of materials;
techniques and applications of high-resolution
microscopy.

DECEMBER 1971

- 6-8 • **Ultrasonics** □ IEEE □ Miami
Beach, Fla. (345 E. 47 St., N. Y.,
N. Y. 10017) 3/70 □

incident scattered

(bond length) Q

$$\epsilon = \epsilon_0 \cos(2\pi \nu_0 t)$$

$$E = h \nu_{\text{vib}} (v + 1/2) \quad v = 0, 1, 2, \dots$$

$$Q = Q_0 \cos(2\pi \nu_{\text{vib}} t)$$

$$\mu = \alpha \epsilon$$

$$\alpha = \alpha_0 + \left(\frac{\partial \alpha}{\partial Q} \right)_0 Q + \dots$$

(RAYLEIGH) (STOKES RAMAN) (ANTISTOKES RAMAN)

$$\mu = \epsilon_0 \alpha_0 \cos(2\pi \nu_0 t) + \frac{\epsilon_0}{2} \left(\frac{\partial \alpha}{\partial Q} \right)_0 Q_0 \cos \left[2\pi (\nu_0 - \nu_{\text{vib}}) t \right] + \frac{\epsilon_0}{2} \left(\frac{\partial \alpha}{\partial Q} \right)_0 Q_0 \cos \left[2\pi (\nu_0 + \nu_{\text{vib}}) t \right]$$

Assume one is studying a free expanding jet of one gas into an originally quiescent field of a dissimilar gas.

Allow the gases to be chemically reactive.

By applying laser Raman spectroscopy, it is possible to obtain a time-varying recording of the gas flow with all chemical species being distinguishable by color.

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