

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 July, if they wish a comprehensive listing of notices. The October 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

AIAA—American Institute of Aeronautics and Astronautics

ANS—American Nuclear Society

AVS—American Vacuum Society

IAEA—International Atomic Energy Agency

IEEE—Institute of Electrical and Electronics Engineers

IOP—The Institute of Physics (formerly IPPS)

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

SEPTEMBER 1971

6-10 • Muons ☐ COLORADO STATE UNIV.
☐ Fort Collins, Colo. (P. Chand, Dept. of Physics, Colorado State Univ., Fort Collins, Colo. 80521) 8/71

8-10 • Electron Mean Free Paths in Metals ☐ IOP ☐ Sussex, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71

13-15 • Chania Conferences ☐ INTERNATIONAL SCIENCE FOUNDATION
☐ Chania, Crete, Greece (E. Haidemenakis, 52 Sfakion St, Chania, Crete, Greece) 8/71

Topics: International science policy and the international meta-university in relation to oceanography, space and the environment

14-16 • POLYMER GROUP OF IOP ☐ Shrivvenham, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71

20-24 • Hollow-Cathode Discharges ☐ PLASMA PHYSICS LABORATORY, UNIV. OF PARIS ☐ Orsay, France (J. D. Delcroix, Plasma Physics

Laboratory, Univ. of Paris, 91—Orsay, France) 8/71

23, 24 • Data Processing and Display for Inspection Purposes ☐ IOP ☐ Lancaster, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71

OCTOBER 1971

4-9 • Intergovernmental Conference for the Establishment of a World Science Information System ☐ INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS, SCIENCE SECTOR OF UNESCO ☐ Paris, France (S. Adams, Office of the Foreign Secretary, US National Academy of Sciences, 2101 Constitution Ave, Washington, D. C. 20418) 8/71

11-13 • Electron Devices ☐ IEEE ☐ Washington, D. C. (H. D. Toombs, 1971 IEDM, Texas Instruments Inc, P. O. Box 5012, MS 922, Dallas, Texas) 8/71

15, 16 • ☐ SOCIETY OF PHYSICS STUDENTS

Monolithic superconducting solenoids

The SHE Manufacturing Corporation has recently developed the "Monolithic" technique of superconducting magnet fabrication. High performance multifilament Niobium-Titanium conductor is epoxy bonded to form a winding of exceptional mechanical strength and complete electromagnetic stability. Fields up to 100 kG may be generated economically at a temperature of 2°K.



Niomax FM A61
(x 100 magnification) from
IMI Kynoch Limited Birmingham.

The monolithic winding withstands a stress in excess of 10^3 kg/cm^2 and the coils may be operated at 100% of the "short-sample" critical current, resulting in reliable performance at very high current densities. For example, the monolithic system eliminates the stability problem often encountered with Helmholtz pairs. The solenoids are relatively compact and light in weight, reducing helium consumption at cool-down. Refrigerant consumption is also reduced by fairly low current requirements. As a result of their good stability magnets may be very rapidly energized (up to 1 kG/sec.). The use of the filamentary conductor results in low field hysteresis and small remanence, typically less than 10 gauss. Prices for SHE monolithic coils start at \$1,250 for a 60 kG 1 inch monolith. For a list of prices and performance specifications, write to:



SHE Manufacturing Corporation
3422 Tripp Court
San Diego
California 92121
Tel. (714) 453 6300

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SCIENTIFIC PAPERS OF TOMONAGA

(1965 Nobel Prize in Physics)

Vol. 1

Edited by

T. Miyazima

This book is the first of the Collected Papers of Sin-itiro Tomonaga in two volumes. In volume one are contained his works on "Atomic Nucleus and Elementary Particle" during a period from 1933 to 1966. Dr. H. YUKAWA, 1949 Nobel Prize Winner in Physics, wrote about this publication.

"Among the scientific works of Sin-itiro Tomonaga, the best-known are, perhaps, a series of papers that trace his theoretical development from the super-many time theory, which won the Nobel Prize, to the renormalization theory. In these papers, he created the most general and, at the same time, the most beautiful theoretical formulation, allowed under the requirement of relativistic invariance and microcausality, that led to so successful results in quantum electrodynamics that were consistent with all the experimental data to a marvelous degree of precision.

Tomonaga's contributions to physics cover, however, a far wider range as is seen from his important researches in the theories of atomic nucleus, elementary particle and solid state physics. For instance, he established the intermediate coupling method in meson theory and opened a new path in the theory of many-body system in solid state physics.

The present publication is of special importance in view of the fact that the value of these studies is not easily and correctly understood without referring to the original papers. The papers included herein are not only good examples to physicists of exactitude of expression and precision of reasoning, but also are certainly of great value to readers of other specialties if they read the papers carefully."

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For details, call or write: G. M. Gomez, Manager, West Coast Optical Facility, Instrument Division, Perkin-Elmer Corporation, 2930 Bristol Avenue, Costa Mesa, California 92626. Telephone (714) 546-1410. **PERKIN-ELMER**

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REGIONAL MEETING (ZONE 10)
☐ San Antonio, Tex. (G. G. Gray, Dept. of Physics, Trinity Univ., San Antonio, Tex. 78212) 8/71

- 18-21 • **Solid State Chemistry** ☐ NBS ☐ Washington, D. C. (R. S. Roth, B214, Bldg. 223, US Department of Commerce, NBS, Washington, D. C. 20234) 8/71
- 29, 30 • **Superconductivity in d- and f-Band Metals** ☐ UNIV. OF ROCHESTER ☐ Rochester, N. Y. (D. H. Douglass Jr, Dept. of Physics and Astronomy, The Univ. of Rochester, River Campus Station, Rochester, N. Y. 14627) 8/71

NOVEMBER 1971

- 3-5 • **Diffraction** ☐ CARNEGIE-MEL-
 LON UNIV. ☐ Pittsburgh, Pa. (L. Thomas, US Steel Corp, Fundamental Research Laboratory, Monroeville, Pa. 15146) 8/71
- 3-5 • **Nuclear Science** ☐ IEEE NU-
 CLEAR SCIENCE GROUP, NASA, AEC ☐ San Francisco, Calif. (K. A. More, Bendix Corp, Aerospace Systems, Division, 3300 Plymouth Rd, Ann Arbor, Mich. 48107) 8/71
- 5 • **Sigma Pi Sigma 50th Anniversary** ☐ SOCIETY OF PHYSICS STUDENTS, SOUTHEAST SECTION OF APS ☐ Columbia, S. C. (D. Shea, Director of Society of Physics Students, AIP, SUNY at Stony Brook, Stony Brook, N. Y. 11790) 8/71
- 6 • ☐ IOWA SECTION OF AAPT ☐ Fort Dodge, Iowa (R. Adams, Upper Iowa College, Fayette, Iowa) 8/71
- 13 • **SOCIETY OF PHYSICS STUDENTS REGIONAL MEETING (ZONE 12)** ☐ San Francisco, Calif. (E. Friesen, Dept. of Physics, San Francisco State College, San Francisco, Calif. 94132) 8/71
- 15-17 • **Uranium Plasmas: Research and Applications** ☐ AIAA, NASA ☐ Atlanta, Ga. (J. R. Williams, School of Nuclear Engineering, Georgia Tech, Atlanta, Ga. 30332) 8/71
- 20 • ☐ SOCIETY OF PHYSICS STUDENTS REGIONAL MEETING (ZONE 9) ☐ Manhattan, Kansas (J. D. Spangler, Dept. of Physics, Kansas State Univ., Manhattan, Kan. 66502) 8/71

JANUARY 1972

- 4-6 • **Solid State Physics** ☐ IOP ☐ Manchester, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71
- 10-12 • **Surface Physics of Semiconductors** ☐ IOP ☐ Southampton, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71

Partial calendar—see note at opening.

- 30-4 • **Power** ☐ IEEE ☐ New York, N. Y. (J. W. Bean, IEEE, 345 E. 47th St, New York, N. Y.) 8/71

FEBRUARY 1972

- 7-9 • **Integrated Optics** ☐ OSA ☐ Las Vegas, Nevada (OSA Executive Office, 2100 Pennsylvania Ave., N. W., Washington, D. C. 20037) 8/71
- 28-1 • **Vacuum Physics** ☐ VACUUM PHYSICS GROUP OF THE AUSTRALIAN INSTITUTE OF PHYSICS ☐ South Australia (Vacuum Symposium Secretary, School of Applied Physics, South Australian Institute of Technology, North Terrace, Adelaide, South Australia 5000, Australia) 8/71

APRIL 1972

- 4-7 • ☐ ACA ☐ Albuquerque, New Mexico (A. C. Larson, Los Alamos Scientific Labs, Los Alamos, New Mexico) 8/71
- 9-13 • **Magnetism** ☐ MAGNETICS GROUP OF JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE, MAGNETICS GROUP OF IEEE, INSTITUTE OF ELECTRICAL ENGINEERS OF JAPAN ☐ Kyoto, Japan (D. H. Looney, Bell Telephone Labs, Whippany, N. J. 07981) 8/71
- 12-14 • **Machine Perception of Patterns and Pictures** ☐ IOP ☐ Teddington, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71
- 24-26 • **Speech Communication and Processing** ☐ IEEE GROUP ON AUDIO AND ELECTROACOUSTICS, AIR FORCE CAMBRIDGE RESEARCH LABS ☐ Boston, Mass. (W. D. Chapman, IBM Corp., P. O. Box 12275, Dept. E84, Bldg. 061, Research Triangle Park, N. C. 27709) 8/71
- 19-21 • **Defects in Semiconductors** ☐ IOP ☐ Reading, UK (Meetings Officer, IOP, 47 Belgrave Square, London SW1, UK) 8/71

JULY 1972

AUGUST 1972

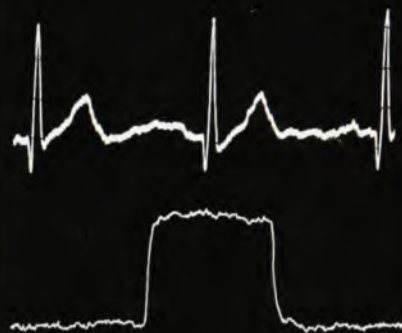
- 20-25 • **Combustion** ☐ UNIV. OF PENNSYLVANIA, EASTERN SECTION OF COMBUSTION INSTITUTE ☐ University Park, Pa. (R. E. Beam, J. Orvis Keller Bldg., Pennsylvania State Univ., University Park, Pa. 16802) [1/72] 8/71

SEPTEMBER 1972

- 4-8 • **Rheology** ☐ S OF R ☐ Lyon, France (R. S. Marvin, NBS, Rheology Section, Washington, D. C. 20234) 8/71
- 6-13 • **High-Energy Physics** ☐ NATIONAL ACCELERATOR LABORATORY, UNIV. OF CHICAGO ☐ Chicago, Ill. (E. L. Goldwasser, NAL, P. O. Box 500, Batavia, Ill. 60510) 8/71 ☐

Superconducting quantum interference device

The Superconducting Quantum Interference Device or SQUID uses the effect of flux quantization in a superconducting circuit containing a weak link to provide an exceptionally sensitive detector of magnetic flux. By virtue of its topology, the device is sensitive to flux in a suitable coupling coil but is screened from the background field.



Upper: the magnetic effect of the heart.

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The SQUID is available in a general purpose probe which may be inserted into a helium storage dewar, or may be mounted in a cryostat as part of a measuring system. A complete electronic unit is available which combines the functions of the circuits required for demonstrating SQUID behaviour with feedback circuits that enable the device to be used as a linear flux detector. As a magnetometer the system displays a noise such that with an external superconducting flux transformer coupled to the SQUID, the final sensitivity is better than 10^{-16} Weber per root-Hz. The SQUID is also available as a complete picovoltmeter with a noise of less than 10^{-12} V peak to peak, 10Ω input impedance and 1 second averaging time or as a very low impedance ac bridge for measurements of resistance and mutual inductance.



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