

we hear that

Wolfe, vice president and general manager of the nuclear fuel and services division, General Electric Co., San Jose, Cal., and Chia-Shun Yih, Timoshenko Professor of Fluid Mechanics at the University of Michigan.

Among the new foreign associates are: Sir Charles Frank, Henry Overton Wills Professor Emeritus at the University of Bristol, Bristol, UK; Stanley G. Mason, professor of chemistry, McGill University, Montreal, Canada, and John R. A. Pearson, professor of chemical engineering at the Imperial College of Science and Technology, London, UK.

Maradudin receives Humboldt Award

Alexei A. Maradudin, professor of physics and dean of the Graduate Division at the University of California, Irvine, has won a Humboldt Senior US Scientist Award in recognition of his accomplishments in research and teaching. The award, which is sponsored by the Alexander von Humboldt Foundation, will enable Maradudin to spend a year doing research at the Max Planck Institute for Solid State Physics in Stuttgart. The award program was established to help foster scientific cooperation between the Federal Republic of Germany and the US.

Maradudin's research includes work on lattice dynamics, the electronic properties of solids and statistical mechanics. He received a bachelor's degree in 1953 and a master's degree in 1954 from Stanford University. Bristol University granted him a doctoral degree in 1956. Maradudin worked at the University of Maryland and Westinghouse Research Laboratories before joining the Irvine faculty in 1965.

Chaim Pekeris to be RAS Gold Medalist

The Royal Astronomical Society will award its Gold Medal to Chaim L. Pekeris, Distinguished Institute Professor at the Weizmann Institute of Science, Rehovoth, Israel. The Society will recognize Pekeris's contributions in several branches of geophysics and in astronomy. These include studies of the convective motions within the Earth, investigations of the propagation of acoustic waves as applied to seismology, calculations relating to elastic vibration of the Earth and studies of oceanic tides.

Pekeris was educated at MIT, earning a BS in 1929 and a DSc in meteorology four years later. After leaving MIT Pekeris held fellowships at both the Rockefeller Foundation and Cambridge University. He returned to MIT in 1936 as an associate in geophysics. In 1941 Pekeris became a member of the scientific

staff of the Division of War Research at Columbia University. He remained at Columbia as director of the mathematical physics group and then as professor of applied mathematics until 1973 when he moved to the Weizmann Institute.

Brandeis University has named **Stanley Deser** to be the first holder of its newly-endowed Nathan S. Ancell Chair of Physics.

Mark Kac, professor at the Rockefeller University, has agreed to become a fellow of the Los Alamos Scientific Laboratory.

The American Nuclear Society has honored two scientists with awards. **John W. Cleland**, a physicist in the solid-state division at Oak Ridge National Laboratory, won the Radiation Industry Award for his "pioneering research on the neutron transmutation doping of semiconductors..." The Mark Mills Award for outstanding graduate work in nuclear science or engineering was presented to **Richard D. Lawrence**, a visiting research assistant professor at the University of Illinois.

John V. Evans, an assistant director of the MIT Lincoln Laboratory, has been appointed director of the Haystack Observatory, Tyngsboro, Mass. and a professor in the MIT department of meteorology.

Richard H. Bolt, retired chairman of the board, Bolt Beranek and Newman Inc., has been named the 1980 recipient of the New England Award. The award is presented by the Engineering Society of New England to honor a resident of New England "who merits recognition for outstanding engineering and societal achievements."

Two physicists formerly with the Technion—Israel Institute of Technology, **D. Cabib** and **Robert A. Buckwald**, have become co-directors of a new optical company, C. I. Ltd., in Ramat Yishai, Israel.

Cornell University has named **Robert Rathbun Wilson** Professor Emeritus of Physics.

Burleigh Instruments Inc., Fishers, N.Y., has appointed **William G. Clark** sales manager. Clark has previously held marketing positions at Spectra Physics and Candela, Inc.

obituaries

Erich Hückel

Erich Hückel, professor of theoretical physics at the Philipps-University of Marburg, Federal Republic of Germany, died on 16 February 1980. He was 83 years old.

Hückel and his two brothers were the sons of a Swabian physician who moved his family to Göttingen, where the boys attended school. In their father's private laboratory they were introduced to physics, chemistry and astronomy.

Shortly before the outbreak of the First World War Hückel began his studies of physics and mathematics at the University of Göttingen. During his army service he worked in Ludwig Prandtl's laboratory for aerodynamics in Göttingen. In 1920 Hückel, working at Peter Debye's institute, completed his doctoral thesis on the application of the Debye-Scherrer x-ray diffraction method to liquid crystals. During the following year, he assisted David Hilbert in preparing his lectures and in 1922 became Max Born's assistant. Together they published a paper on rotational-vibrational spectra of multi-atomic molecules. To relax from the lengthy perturbation calculations needed for this paper, Hückel would cycle around Göttingen with Annemarie Zsigmondy, the elder of the two highly gifted daughters of Richard Zsigmondy, the Nobel Prize-winning colloid chemist.

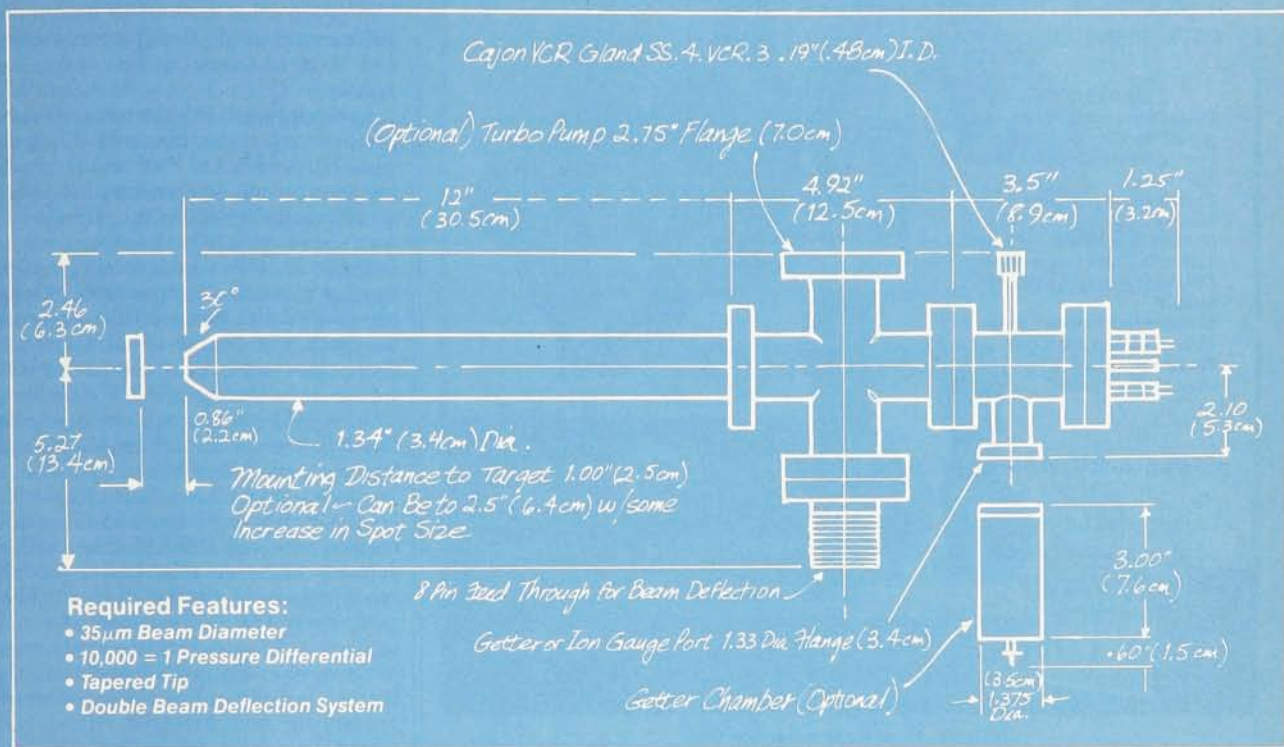
Hückel soon became engaged, but before consenting to a marriage, his prospective father-in-law required that he complete his *Habilitation*, the prerequisite for a career in German universities.

In the fall of 1922 Hückel became Debye's assistant at the Swiss Institute of Technology in Zurich. There the famous joint papers on strong electrolytes were written and appeared in 1923 and 1924.

HÜCKEL (1934)



If you designed your own Scanning ION gun, this is what you'd want:



But don't bother. We've already done it.
And it's available now.
With a very low price tag.

Introducing the Minibeam II Scanning ION Gun from 3M.

With the smallest beam available, anywhere, at its price...with a 10,000 to 1 pressure differential...with shorter beam to sample distance...with double beam deflection system...and more. You can start doing a better job now—at less cost—with the kind of scanning gun you'd design for yourself. Find out everything about it. Just write to the address below.

Analytical
Systems/3M



the sensible alternative you've needed for a long time

Analytical Systems/3M

53-3S 3M Center
Saint Paul, Minnesota 55144
612/778-4009
Telex 29-7023

In Europe

Cambridge Instrument Company GMBH

D 4600 Dortmund 1
Harnackstr. 35-43
West Germany
(0231) 126086-89
Telex 08227346 CIC

Circle No. 43 on Reader Service Card

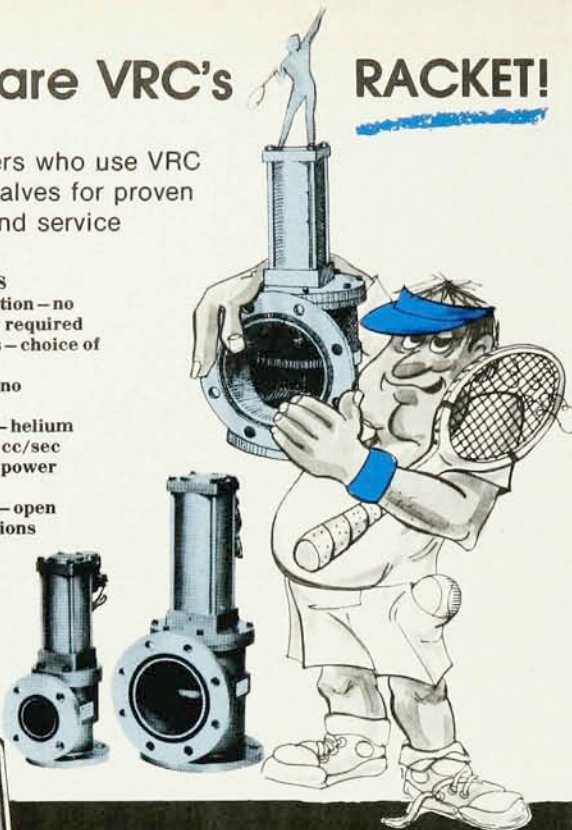
3M

Valves are VRC's RACKET!

Join the winners who use VRC high vacuum valves for proven performance and service

FEATURES

Two piece construction — no piping disassembly required
Compatible flanges — choice of hole sizes
Full opening port — no obstructions
Certified leak rate — helium tested to 1×10^{-9} std cc/sec
Fail safe — close on power failure
Remote indicators — open and/or closed positions
Rugged — tested over 50,000 cycles



Vacuum Research Manufacturing Company
3100 Crow Canyon Road, San Ramon, California 94583 Area Code (415) 837-7241

Circle No. 44 on Reader Service Card

Addison-Wesley Advanced Book Program

ENCYCLOPEDIA of PHYSICS

Edited by **Rita G. Lerner**, American Institute of Physics
George L. Trigg, Brookhaven National Laboratory
Foreword by **Walter Sullivan**, The New York Times

An introductory reference source for graduate students, professionals and lower-level students, comprises some 480 articles, including surveys on the major areas of physics, specialized articles on subdivisions, as well as on interfaces between physics and other sciences.

A bibliography for each article provides the reader with sources for more detailed information. The contributors, including more than a dozen Nobel prize winners, are experts on the topics described.

About 900pp. Summer 1980, in preparation
illus. with line drawings and half tones, $8\frac{1}{2} \times 11$ ", 2 columns
Hardbound 04313 Prepublication price \$84.50
After July 1, 1980 \$99.50

Prices quoted in U.S. dollars. Outside U.S.A. prices may vary somewhat from those listed, reflecting distribution costs and currency fluctuations. Prices are subject to change without notice.



Addison-Wesley Publishing Company, Inc.

Advanced Book Program
Reading, Massachusetts 01867, U.S.A.

P.O. Box 363, Crow's Nest N.S.W. 2065, Australia
West End House, 11 Hills Place, London W1R 2LR, U.K.
De Lairessestr. 90, Amsterdam 1071, The Netherlands
36 Prince Andrew Pl., Don Mills, Ontario M3C 2T8, Canada.

Circle No. 45 on Reader Service Card

obituaries

The Debye-Hückel length, a characteristic quantity in these investigations, is known today not only to physical chemists, but to all plasma physicists. One of Hückel's publications on electrolytes in 1925 served as his *Habilitationsschrift*, and thus he could at last marry his fiancée.

In the spring of 1928 Debye accepted a professorship at the University of Leipzig, while Hückel went to Frederick Donnan's institute for colloid chemistry in London on a Rockefeller Fellowship. Unsatisfied with the progress of his investigations, he followed Debye's advice to apply quantum theory to chemical problems. To get acquainted with this new field of physics he spent the winter of 1928-1929 in Cambridge with Paul Dirac and the spring and summer of 1929 with Niels Bohr in Copenhagen, together with Hendrik Casimir, Paul Ehrenfest, George Gamow and Oskar Klein. At Bohr's suggestion Hückel investigated the double bond (which is very important for organic compounds) and finished this work in January 1930. At this time he was already in Leipzig, supported by a fellowship from the *Notgemeinschaft der deutschen Wissenschaft*, the predecessor of the German Research Foundation. At the University of Leipzig, Werner Heisenberg and Friedrich Hund had created a school for young scientists working on quantum theory, similar to Bohr's school in Copenhagen and Arnold Sommerfeld's in Munich. Stimulated by correspondence with his brother Walter, who was a chemist, Hückel started calculations for a quantitative description of the benzene cycle. To tackle this problem, which was regarded as almost intractable in those times, he used the methods now known as molecular orbit theory, introducing several rather bold assumptions, now called Hückel approximations. They proved to be successful and enabled him to make a prediction on the stability of aromatic compounds, now listed in textbooks on organic chemistry as Hückel's $(4n + 2)\pi$ -electron rule. Its publication in 1931 was used as his second *Habilitationsschrift* for the Technical University in Stuttgart, where Hückel became a lecturer in chemical physics.

The extension of this lectureship depended on the number of students he could attract. Since Hückel was only allowed to lecture on his special field he was always in danger of losing his job. He published a series of papers, developing and applying the Hückel Molecular Orbital (HMO) method to aromatic and unsaturated compounds, but his results were not taken up in Germany, only in England and in the US. Finally in 1937 he became associate professor (with tenure) for theoretical physics at the University of Marburg.

Although this stabilized his economic

situation, the conditions for research worsened. As he was the only theoretical physicist at the university, a heavy teaching load was imposed upon him, and he had to carry it without any assistant or secretary. During and immediately after the Second World War the working conditions became even worse, bringing his research to a complete standstill.

Although the situation improved some years after the war, Hückel's weak health prevented him resuming his former research activities. Instead he concentrated on teaching and advising his assistants. Due to his very friendly nature he enjoyed great popularity among students and assistants. After his retirement in 1962 he obtained several honors for his scientific work: the Society of German Chemists and the German Physical Society jointly bestowed upon him the Otto Hahn Award; he became a member of the German Academy of Scientists "Leopoldina" of Halle and a foreign member of the Royal Society, as well as honorary doctor at the Universities of Stuttgart and Uppsala.

Five years ago his memoirs appeared. Written in Hückel's witty and ironical style, they reflect much of his critical attitude to problems of daily life. His friends have lost a warm-hearted personality, the scientific community one of the pioneers of quantum theory.

K. SUCHY

*Institute for Theoretical Physics
University of Düsseldorf*

Milton Grandison White

Milton Grandison White, Eugene Higgins Professor of Physics, Emeritus, at Princeton University died on 16 October 1979.

White was born in Claremont, California, on 12 January 1910. He attended Sacramento Junior College and the University of California at Berkeley, where he received his AB in 1931 and his PhD in 1935. A Coffin fellow, he was a student of Ernest O. Lawrence, the inventor of the cyclotron. His thesis was based on an investigation of proton-proton scattering and was the first nuclear-physics research performed using a cyclotron.

Upon completion of his graduate work, White was awarded a National Research Council postdoctoral fellowship. At that time, the only cyclotrons were at Berkeley. Recognizing the potential of nuclear research, he wanted to build one elsewhere to enable him to pursue an independent career. Of the various universities he considered, only Princeton agreed to provide the needed funds. This cyclotron was the first to operate outside of Berkeley. White, his associates and their students carried out a vigorous program of fundamental research in nuclear physics until the start of the Second

CO-NETIC Magnetic Shields



for Photomultiplier Tubes



MAGNETIC SHIELD DIVISION

PERFECTION MICA CO.

740 North Thomas Drive
Bensenville, Ill. 60106, USA

Phone 312 / 766-7800

TWX 910-256-4815

Send for NEW PM-4 catalog of magnetic shields for over 650 PMT's. Includes recommended shield for each tube, metric & English dimensions of shields and application information.

Circle No. 46 on Reader Service Card

DO YOU SPUTTER ?

A UNIQUE SOURCE FOR R&D

SEVERAL MODELS ALLOW TARGET
SIZES FROM 0.5 - 12.7 CM

NONMAGNETIC PLASMA CONFINEMENT

RF & DC DEPOSITIONS

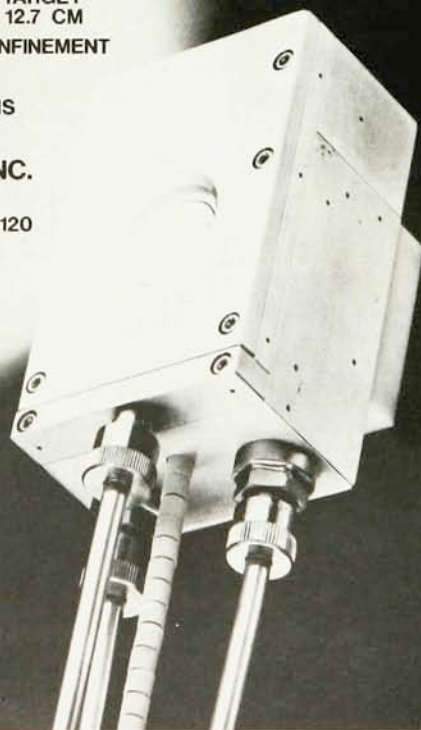
UHV and O-RING VERSIONS



L. M. SIMARD INC.

P.O. BOX 2254
SANTA BARBARA, CA 93120
(805) 962-3338

plasma^{max}



Circle No. 47 on Reader Service Card