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Three physicists win Warren Award for EXAFS work

The American Crystallographic Association has honored three solid-state physicists, Farrel W. Lytle, Dale E. Sayers and Edward A. Stern, with the Bertram Eugene Warren Diffraction Physics Award. The trio were recognized for their development of extended x-ray absorption fine structure (EXAFS) spectroscopy, a method useful for the investigation of atomic structure. EXAFS spectroscopy depends upon the interference that occurs between photoelectric waves radiated when an atom absorbs an x-ray photon and those same waves backscattered off adjacent atoms.

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STERN SAYERS LYTLE

The Warren Award is given every three years to recognize "an important recent contribution to the physics of solids or liquids using x-ray, neutron, or electron diffraction techniques." The award itself consists of a certificate and a $1000 prize.

Lytle has been president of EXAFS Co. since 1974. He received bachelor's and master's degrees (1956 and 1958) from the University of Nevada. From 1960 to 1974 he served as senior basic research scientist for Boeing Scientific Research Laboratories. Lytle's research interests include x-ray astronomy, radiation chemistry, cryogenics, and EXAFS studies of catalysts and amorphous materials.

Professor of physics at the University of Washington, Stern has done work on the electronic structure of metals and alloys, magnetism, and the atomic structure of amorphous and biological matter. Stern earned bachelor's and doctoral degrees (1951 and 1955) from Caltech. He remained at Caltech for two years as a research fellow and then went to the University of Maryland. He joined the Washington faculty in 1966.

Sayers took his present position as senior research associate in physics at the University of Washington in 1974. He has specialized in the application of the EXAFS technique to the investigation of the structures of amorphous materials, biological systems and catalysts. Sayers was granted a bachelor's degree from the University of California, Berkeley (1966), master's and doctoral degrees from the University of Washington (1968 and 1971). He spent a year with the Boeing Aerospace Co. as a research engineer in physics before returning to the University of Washington.

Fluid Dynamics Division of APS gives Lin new prize

A new award, the Fluid Dynamics Prize, was presented recently to Chia Chiao Lin, Institute Professor of Mathematics at MIT. Sponsored by the Office of Naval Research and established by the Fluid Dynamics Division of The American Physical Society, the prize was given to Lin at the November division meeting in West Lafayette, Indiana.

He was cited "for his outstanding and long continued investigations in the theory of fluid motions, culminating in an expansion of the horizons of that subject to embrace the outmost reaches of the universe." The citation refers to both Lin's earlier research on hydrodynamic stability, turbulence and the mechanism of transition, and his later development of the density wave theory of galactic spirals.

Lin was born in Fukien, China; he took his BSc from the National Tsing Hua University in 1937. Four years later the University of Toronto granted him an MA and in 1944 Lin earned a PhD in aeronautics from Caltech. Following two years on the faculty of Brown University, Lin went to MIT and has remained there since.

Townes receives Bohr Gold Medal

Recently, Nobel laureate Charles H. Townes was presented the Niels Bohr International Gold Medal by Prince Henrik of Denmark. He was selected by Dansk Ingenirforening for his role in the invention of the maser and the laser. Townes is presently affiliated with the University of California, Berkeley as University Professor of Physics and is engaged in astrophysics research.

The Bohr Medal has been awarded once every three years since 1955 when Niels Bohr himself received it on his 70th birthday. Though originally established to honor "scientists or engineers whose work has greatly contributed to the peaceful use of atomic energy," the eligibility criteria have been modified recently.

Townes graduated from Furman University in 1935, earning a BS in physics and a BA in modern languages. In 1937 he completed his master's degree requirements at Caltech and received a PhD from the same institution two years later. Townes was a staff member of Bell Telephone Laboratories for the next eight years. He then went to Columbia University where he was a member of the physics faculty until 1961. At that time he joined MIT as a professor, later attaining the position of Institute Professor

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of Physics. By 1967 Townes had transferred to Berkeley.

Townes has won many honors for his research work. Besides the basic patent on the maser and, with Arthur L. Schawlow, one on lasers, he is also known for his studies in microwave spectroscopy, nuclear structure, and radio and infrared astronomy.

Möhwald and Reithler share German award

Two German physicists, Helmuth Möhwald and Hans Reithler, have shared the German Physical Society's 1979 Physics Prize. The 5000 DM prize (approximately $2800) is presented "to encourage young physicists through public acknowledgement of their outstanding work, to direct attention to them and so to serve as a stimulus to the new generation." The award was made at the 43rd Physics Day held in Ulm, Federal Republic of Germany in September.

Möhwald, of Dornier Systems Ltd, was honored for his work on "the transfer properties, phase transitions and molecular dynamics of organic charge-transfer crystals." He studied a particular class of single crystals, namely those composed of two types of planar organic molecules which are alternately stacked much like coins. Among other things, Möhwald discovered that diffusion of photoelectrons and excitons takes place primarily along the crystal's stacking axis and is accompanied by a disturbance of the crystal lattice. This type of crystal is found in photocopier devices and can be considered as a model for various biophysical systems such as the charge and energy transport mechanism of photosynthetic bodies.

Reithler, of the 3rd Physics Institute of Rhein-Westfalia Technical High School, was recognized for his "experimental confirmation of the scattering of neutrinos by electrons." Using neutrino streams of high intensity and purity from the proton synchrotron at CERN, Reithler scattered neutrinos off the electrons found in a 30-ton aluminum multiplate spark chamber. Since the scattering cross section of the electron–neutrino collisions was roughly one ten-thousandth of that of a nucleon–neutrino collision, it took over 1.5 million spark chamber pictures to identify 19 electron–neutrino reactions. That the collisions occurred with electrons rather than nucleons was determined by energy and structure analyses of the generated electromagnetic cascades.

OSA acknowledges Mahan's contributions

For the third time, the Optical Society of America has honored someone with its Distinguished Service Award. The recipient this time is Archie I. Mahan, who has retired after serving for 20 years as treasurer of the Society.

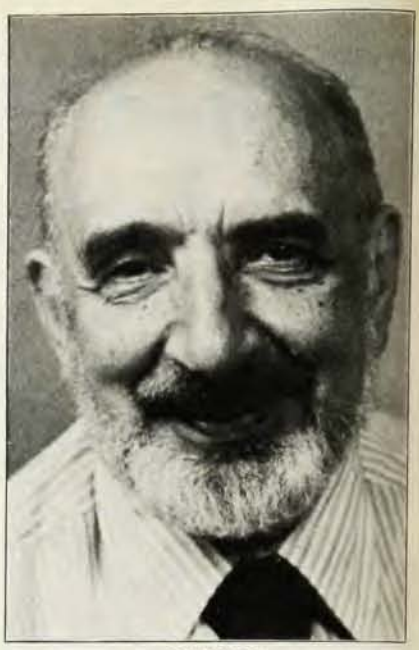
Mahan was granted a bachelor's degree from Friends University in 1931. He then studied at the Johns Hopkins University where he earned his doctorate in physics in 1940. He has held professional positions with Georgetown University, the US Naval Ordinance Laboratory and the US Naval Gun Factory. From 1962 until 1979 Mahan had served as principal physicist at the Applied Physics Laboratory of Johns Hopkins. His research concerns a wide range of topics in geometrical and physical optics such as optical design, interferometry, astronomical refraction, and diffraction by telescopes, plane-parallel plates, cones and circularly symmetric apertures.

The Distinguished Service Award was established in 1973 "to recognize individuals who make distinguished contributions to optics through administration, editorship, and other service to the optical community."

AAPT honors Calandra with Millikan Award

Alexander Calandra, professor of physics at Washington University, won the 1979 Robert A. Millikan Lecture Award of the American Association of Physics Teachers. With the award, the AAPT recognized Calandra's "long and devoted efforts to improve the teaching of physics." The award, which consists of $300 and a citation, is supported by an annual gift from Prentice-Hall, Inc.

Calandra majored in chemistry at Brooklyn College (1935) and earned a doctoral degree in chemistry and statistics



CALANDRA

in 1940. During the years when he was an assistant professor of chemistry at Brooklyn College (1938 to 1945), Calandra turned his attention away from chemistry and toward physics. He then took a position at the University of Chicago, where he assisted Enrico Fermi in teaching freshman physics. When Arthur Compton invited Calandra to Washington University to help develop a program of science education in 1947, he left Chicago. This began an association which has continued for over 30 years. While still maintaining his ties to Washington, he became chairman of the Science Division of Webster College in 1969. There, Calandra worked on another plan to teach science to non-science students. He is also responsible for several elementary school-level science programs.

Gerald P. Alldredge, recently of the University of Missouri–Rolla, is now associate professor of physics at the University of Missouri–Columbia.

The Physics Department of Montana State University has added to its staff **Christopher Cosgrove** of the University of Sydney and **Peter Zurcher** of the ETH, Zürich.

Daniel J. Kevles, professor of history at Caltech, has been awarded the National Historical Society's 1978 Book Prize for his volume, *The Physicists: The History of a Scientific Community in Modern America* (a chapter of the book appeared in PHYSICS TODAY, February 1978, page 23).

Two physicists from General Motors Research Laboratories in Warren, Michigan have joined the faculty of the University of Texas at Austin. **Robert Herman** has