



SECOND INTERNATIONAL CONFERENCE ON NEUTRON TRANSMUTATION DOPED SEMICONDUCTORS

April 24-26, 1978

Research Reactor Facility
University of Missouri
Columbia, Missouri 65201

TOPICS

Physics of Transmutations Doping
Radiation Damage Effects
P-N Junction Formation by Masking
Device Applications
Reactor Sample Handling
Reactor Facility Descriptions
Starting Material Growth
Materials Specifications, Yields & Costs
New Materials and Applications

Sponsored by Air Force Office of Scientific Research,
Office of Naval Research, Monsanto Corporation, and
Research Reactor University of Missouri.

To submit Abstracts or make reservations contact

Dr. J. M. Meese or Dr. R. R. Bertliner
Research Reactor Facility
University of Missouri
Columbia, Missouri 65201
Tel. 314-882-3331



SCIENTIFIC AND INDUSTRIAL APPLICATIONS OF SMALL ACCELERATORS

The Proceedings of the Fourth Conference on Applications of Small Accelerators is now available. The 620-page volume entitled "Scientific and Industrial Applications of Small Accelerators," IEEE Catalogue No. 76 CH 1175-9 NPS, includes the conference papers from two symposia held concurrently, the Symposium on Research Applications and the Symposium on Industrial Applications. Proceeding Editors were Professor Jerome L. Duggan, Department of Physics, North Texas State University (Scientific Applications) and Professor I. L. Morgan, Department of Physics, University of Texas (Industrial Applications). The conference included some eighty invited papers and 40 contributed papers, arranged in 18 sessions.

Topics covered include every facet of present-day research with small accelerators: Atomic Physics and Related Phenomena. Trace Analysis with Ion Beams. Electron Beam Materials Processing. Surface Phenomena. Accelerator Applications in Controlled Thermonuclear Research. Neutron Activation Analysis. Nuclear Physics, Nuclear Excitation, and Neutrons. Radiological Safety Aspects of Accelerators. Ion Implantation. Geosciences and Related Phenomena. Accelerator Design. Medical and Biological Applications. Material Analysis with Ion Beams. Radiation Effects. Research on Channeling and Stopping Power.

The Proceedings are available from the IEEE Service Center, 445 Hoes Lane, Piscataway, New Jersey 08854 at a price of \$28.00 for non-IEEE members of \$21.00 for IEEE members.

obituaries

tirement in 1959 from the Laboratory.

Cooksey's activities in the early, unstructured years of the Laboratory was as a *confidant* and right-hand man to Lawrence and also involved work and leadership in many diverse areas. He was particularly interested in the mechanical shops and in the improvement of design and engineering standards. His dedicated attention to essential details made it possible for Lawrence to devote his time to scientific work and to the raising of financial support, which at that time came principally from private foundations.

Later, his role became more that of the traditional administrator, but he never lost sight of the importance of the human element. He was gracious and friendly to all, and many of the early staff and students received help from him in times of difficulty. He aided in disseminating the cyclotron art throughout the world through correspondence and by the preparation of a *Cook Book of Vacuum Chambers and Associated Parts*.

Cooksey was born in Irvington-on-Hudson, New York on 15 May 1892. As a lieutenant in the US Army Ordnance Department in World War I he helped develop a method for synchronizing machine-gun fire between aircraft propeller blades. He was educated at Yale University, receiving his PhD in 1932, and was a Fellow of The American Physical Society.

EDWIN M. McMILLAN

Lawrence Berkeley Laboratory

Manuel Sandoval Vallarta

Manuel Sandoval Vallarta, a pioneer in the field of cosmic-ray physics and a key figure in the founding of modern Latin American science, died in Mexico City on 18 April. He was 78 years old.

After receiving his PhD from the Massachusetts Institute of Technology in 1930, Vallarta joined with Abbé Lemaître in developing their famous theory of the propagation of cosmic rays in the Earth's magnetic field. The theory helped to discover the very nature of cosmic radiation. By their extension of the Liouville theorem (achieved simultaneously by Enrico Fermi and Bruno Rossi) Vallarta and Lemaître concluded that the intensity of cosmic rays observed on Earth along "allowed" directions was equal to infinity, thus opening a window to contemplate the energetic processes taking place in the universe.

The elegance of the Lemaître-Vallarta theory was typical of Vallarta's research in other areas of physics that he carried out in the 1930's as a visiting professor at the universities of Berlin, Leipzig, Göttingen and Louvain. He maintained similarly high standards in his long and distinguished career at MIT, as an asso-

ciate professor in 1930 and then holder of the chair for theoretical physics until 1946.

While still on the MIT faculty he returned to Mexico in 1943 and participated in the birth of the modern Mexican scientific community through his excellence as a physicist and his dedication to organizational work.

His administrative activities included a term as undersecretary of the Ministry of Education, director of the National Polytechnic Institute and founder of the National Institute for Scientific Research. He remained director of the National Institute of Nuclear Energy up to his death and continued to preside at weekly seminars where young physicists as well as internationally acclaimed researchers could gather and discuss topics of current interest and importance.

Vallarta's influence was essential in many of the cultural and scientific Latin American institutions. He was president of the Latin American Council on Cosmic Rays, a representative to UNESCO and a member of the board of the International Centre for Theoretical Physics in Trieste, Italy. An advocate for the peaceful uses of atomic energy, he represented Mexico in many conferences of the United Nations Atomic Energy Agency in Vienna and was a participant in the Tlatelolco Treaty on denuclearization.

To us, his younger colleagues, Vallarta was a cordial and hospitable man with an air of inner elegance that captivated us all. His presence had a catalytic effect, and his lectures made us perceive the beauty that is the basic ingredient of exact science.

RUTH GALL

Head, Space Research Department
National University of Mexico

Dorr Chandler Ralph

Dorr Chandler Ralph, physicist on the faculty of Louisiana State University, Baton Rouge, died 6 April 1977 at age 63.

Ralph received his PhD (1946) and his PhD (1949) from the University of Wisconsin, Madison. He joined the Navy Bureau of Ordnance in 1940 where he served as senior physicist supervising degaussing at the Philadelphia Navy Yard, and in 1942 became senior degaussing officer of the Seventh Fleet. In 1946 he returned to the University of Wisconsin to finish his degree and to work as a research associate. Ralph joined the physics section of the Westinghouse Research Laboratory in East Pittsburgh, Pa. and in 1949 and remained there through 1951.

He was appointed to the faculty of Louisiana State University, Baton Rouge, in 1951, and remained an active faculty member until his death, serving as chairman of the LSU department of physics and astronomy from 1965 until 1970. □