

Hot Box

Tem-Pres Internally Heated Pressure Vessels



For subjecting samples to pure hydrostatic pressures up to 10 kilobars and temperatures up to 1400°C simultaneously, Tem-Pres offers a variety of pressure vessels with a furnace located inside the vessel housing. Easily replaceable, cartridge-type furnaces, with dual control zones, allow complete control of hot-zone location.

The units operate horizontally or vertically, and open at either end for easy access to the furnace and sample-holding assembly.

*specialists in high pressure/high temperature
research systems*

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we hear that

Leningrad, USSR last month. The award, which includes a prize of 20 000 Swiss francs (approximately \$10 000), honors outstanding achievement in the field of solid-state physics. Alferov received the award at the Fourth EPS General Conference, which was held in York, UK.

Alferov graduated from the V.I. Ulyanov (Lenin) Electrotechnical Institute, department of electron devices in 1952. He received the Candidate Degree (Technology of Sciences) in 1961 and the degree of Doctor of Physico-Mathematical Sciences in 1970, both from the Ioffe Institute, where he has been a member of the staff since 1953. From 1970 to 1971, Alferov worked in the United States as an exchange scientist in the solid-state devices laboratory of the Electrical Engineering Department of the University of Illinois.

Alferov was honored for his contribution to the development of a new type of semiconducting material that can be used to produce, among other things, highly efficient solar cells and lasers with continuous output. Alferov and his research group showed that heterojunctions (electronic junctions of two semiconductors of different materials) could be much more sensitive and efficient than junctions made from single substances. They found that gallium arsenide and aluminum arsenide combined to form a solid solution with properties that could readily be controlled. Heterojunctions made with these substances provide the basis for a range of optical-electronic devices that can be used either as detectors and emitters or as wavelength converters, for which a number of commercial applications have been developed.

Frank receives first crystal growth award

Sir Charles Frank became the first recipient of the newly established Crystal Growth Award of the American Association for Crystal Growth at a ceremony at the Fourth American Conference on Crystal Growth in July. The new award, which will be presented once every three years, was established by the AACG to recognize "outstanding contributions to the field of crystal growth." It consists of a bronze plaque, a medal made of a ruby crystal grown and contributed by the Union Carbide Corporation, and \$3000, also contributed by Union Carbide.

Frank received the award for his fundamental theoretical and experimental work in the growth of crystals. In the 1940's, Frank proposed that geometric imperfections in the structures of certain crystals were essential to the continued growth of the crystals in solutions at small super-saturations.

After Frank graduated from Oxford University he held several posts in universities and the British government. In 1947, he joined the H.H. Wills Physics Laboratory of the University of Bristol as a research fellow. He was promoted to reader in 1951 and professor in 1954. In 1969, he became the Henry Overton Wills Professor and head of the department, a post which he retained until his retirement in 1976.

University Women present Cannon Award to Szkody

Paula Szkody, an astrophysicist who is a visiting researcher at Caltech and a research associate at the University of Washington, is the winner of the 1978-79 Annie Jump Cannon Award in Astronomy. The award is presented by the American Association of University Women to a young woman in recognition of her achievement and her potential for significant research in astronomy.

Szkody's research has been in visible and infrared photometry of dwarf novae and related close binary systems. One of her recent discoveries showed that dwarf novae and x-ray binaries are closely related. Szkody is responsible for the first observations of photometric eclipses in AM Herculis, a system which is also a periodic variable x-ray source. Her observations and analysis demonstrate that this x-ray system shares many of the properties of the classical dwarf novae.

AIAA fluid dynamics award goes to Treanor

The American Institute of Aeronautics and Astronautics has selected Charles E. Treanor as the recipient of the AIAA Fluid and Plasmadynamics Award. Treanor was cited for his work in molecular energy transfer kinetics and numerical modeling methods of nonequilibrium gas flows. His contributions have provided "major theoretical bases for analyzing gas dynamic lasers," according to the citation.

Treanor completed his PhD in physics at the State University of New York at Buffalo. Among his contributions to the understanding of gas dynamics was the prediction of the theory of population inversions of diatomic gases under extreme conditions, which was the basis for laser action in the carbon-monoxide 5.0-micron system, the most efficient CW laser known.

The award, conferred annually, was presented at the AIAA 11th Fluid and Plasmadynamics Conference in July.

Gary Steigman, formerly of Yale University, has joined the Bartol Research Foundation of The Franklin Institute as asso-