

ASA honors Spiess, Blackstock and Zwislocki

The Acoustical Society of America will make the following awards at its meeting in Nashville, Tennessee, this month: Fred N. Spiess will receive the Pioneers of Underwater Acoustics Medal; David T. Blackstock will receive the Silver Medal in Physical Acoustics; and Jozef J. Zwislocki will receive the von Békésy Medal. This is the first time that ASA will present the von Békésy award; it has been instituted to honor individuals "who have made outstanding contributions to the area of psychological or physiological acoustics as evidenced by publication of research results in professional journals or by other accomplishments in the field."

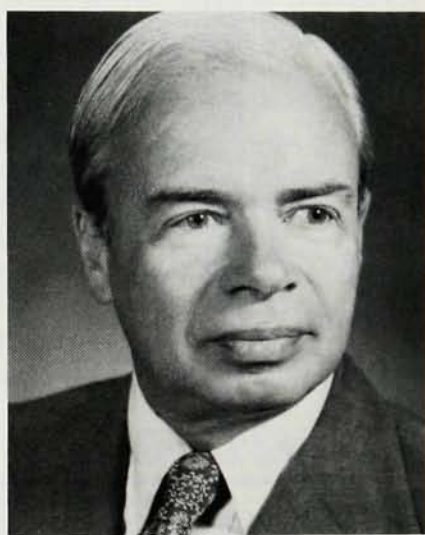
Spiess was cited "for his leadership and insight in applying acoustics to study the ocean and the sea floor; for his many ingenious scientific and engineering contributions; [and] for his introduction of students, scientists and many others to underwater acoustics." Spiess received his PhD from the University of California at Berkeley in 1951. He worked as a nuclear engineer at the Knolls Atomic Power Laboratory of the General Electric Company for 1951-52. He then became a research physicist at the Marine Physical Laboratory of the Scripps Institution of Oceanography; he was named director of the Marine Physical Laboratory in 1958. Spiess and his group have developed the Deep Tow system, equipped with a variety of sonars and related instruments, to obtain fine-scale information about the nature of the ocean floor. They have studied the bottom's acoustic attenuation and reflection coefficients, both *in situ* and in the laboratory, using collected samples. The precision underwater acoustic navigation system that they developed for the Deep Tow system has become the standard means by which scientific equipment is located and recovered from the ocean floor. In studying the effects of the ocean environment on sound propagation and background noise Spiess was instrumental in the design and construction of FLIP: a 108-m-long spar buoy that is towed horizontally to its desired location and



BLACKSTOCK

then upended to create a stable ocean work platform. Spiess has been the director of the University of California statewide Institute of Marine Resources since 1980, and continues research with his Deep Tow group worldwide.

Blackstock was cited "for contributions to our understanding of the propagation of finite amplitude sound through the use of the Burgers equation and weak-shock theory and for national and international leadership in nonlinear acoustics." Blackstock received his PhD in applied physics from Harvard University in 1960. He spent three years at General Dynamics-Electronics in Rochester, New York, before joining the electrical-engineering department of the University of Rochester. In 1970 he became a faculty research scientist at the Applied Research Laboratories of the University of Texas at Austin. He is also senior lecturer in the mechanical-engineering department there. Blackstock has been an active member of the Acoustical Society since 1959. He served as an associate editor of the *Journal of the Acoustical Society of America* 1972-77, and as both vice-president (1978-79) and president (1982-83) of the society. Blackstock's early research focused on the propaga-



ZWISLOCKI



SPIESS

tion of finite-amplitude waves, and he popularized the use in the US of the Burgers equation, which incorporates attenuation and nonlinear distortion effects into the theory. He later studied the effects of nonlinearity on noise and acoustic-transient propagation, and most recently he has studied noise-sound and sound-sound interactions and propagation in porous materials, and nonlinear effects in long-range underwater propagation.



**From Sensors
to Complete Systems**

CRYOGENICS

PROPYLENE	225.1
HYDROGEN SULFIDE	213.5
CARBON DIOXIDE	194.6
ACETYLENE	189.1
ETHANE	184.8
NITROUS OXIDE	183.6
ETHYLENE	169.3
XENON	164.0
OZONE	161.3
KRYPTON	121.3
METHANE	111.7
OXYGEN	90.1
ARGON	87.4
FLUORINE	86.0
NITROGEN	77.3
NEON	27.2
DEUTERIUM	23.6
HYDROGEN	20.4
HELIUM 4	4.2
HELIUM 3	3.2
ABSOLUTE ZERO	0

KELVIN

Since 1967, Scientific Instruments, Inc. has provided the measurable difference in cryogenic sensing and instrumentation.

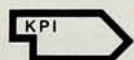
Thermometers: Germanium, Platinum, Gallium Arsenide Diode, Silicon Diode & Chromel vs Gold Thermocouple • Digital Readouts • Microprocessor Based Temperature Controllers • Liquid Level Indicators/Gauging Systems • Liquid Level Controllers • Constant Current Generators • Industrial Temperature Transducers

For Complete Specifications Contact:

Scientific Instruments, Inc.

1101 25th Street, West Palm Beach, Florida 33407
(305) 659-5885 Telex: 51 3474

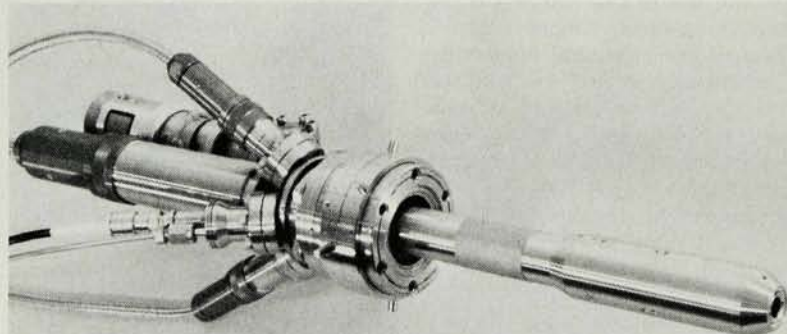
Circle number 67 on Reader Service Card



ELECTRON AND ION OPTICS GUNS / SOURCES

5 eV to 100 keV

High Brightness Electron Sources
High Brightness Ion Sources
UHV Electrostatic Optics, Power Supplies
Charge Neutralization Systems
Accessories for SEM, MBE, ESD, SIMS, AUGER, e^- Lithography
Custom UHV Apparatus



UP TO 20 keV AVAILABLE ON 70 mm (2 $\frac{3}{4}$ in.) CONFLAT

KIMBALL PHYSICS INC.

KIMBALL HILL ROAD
WILTON, NH 03086

(603) 878-1616

UHV ELECTRON & ION SOURCES/OPTICS/SYSTEMS

MRS SHOW-BOOTHS #703, 704

Circle number 68 on Reader Service Card

Zwislocki was cited "for landmark contributions to our knowledge of the hydromechanical, neurophysiological and perceptual mechanisms of the auditory system." Zwislocki received his DSc from the Swiss Federal Technological Institute in 1948 for a thesis that gave the first complete mathematical description of sound in the cochlea. At the University of Basel (1945-51), he made pioneering measurements of forward masking that indicated the phenomenon was caused by the combination of persistent auditory excitation and the tendency of the auditory system to adapt to sustained stimuli. He later developed a theory of temporal auditory summation resulting in part from this work. In 1951 Zwislocki became a research fellow at the psychoacoustics laboratory at Harvard University. In 1962 he became professor of electrical engineering, and in 1973 he became professor of sensory science at Syracuse University, where he served as founder and director of the University's Institute for Sensory Research. During this time he demonstrated a sharp frequency selectivity in central masking, a phenomenon in which sound in one ear masks sound in the other, and later developed a theory of central masking to explain his findings. In addition Zwislocki made extensive studies of loudness; he developed improved models of sound transmission in the middle ear and instruments for hearing-loss diagnosis and hearing-aid calibration, as well as improved ear-plug designs. More recently he has studied acoustic-signal encoding by single auditory-nerve fibers. Zwislocki resigned his directorship last year; he is currently a professor of neuroscience and of special education at Syracuse and a research professor of otolaryngology and communication sciences at the State University of New York Upstate Medical Center.

Laser Institute presents Schawlow Award to Patel

The Laser Institute of America presented the 1984 Arthur L. Schawlow Award to C. Kumar N. Patel in recognition of his "distinguished contributions to the applications of lasers, including his invention of the carbon-dioxide laser, his invention of spin-flip Raman lasers, his contributions to the detection of extremely small concentrations of pollutants, his ongoing interest and contributions to the medical use of lasers and his numerous contributions on technical panels, tutorial papers and public presentations."

Patel received his BE in telecommunications from the College of Engineering in Poona, India; he earned both