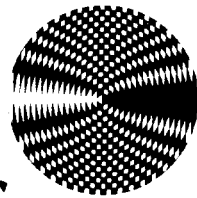




IEEE



# SONICS AND ULTRASONICS GROUP NEWSLETTER

NUMBER 47 - SEPTEMBER 1979

EDITOR: FRED S. HICKERNELL

*Program*

1962 ULTRASONICS SYMPOSIUM  
NOVEMBER 28, 29

1964 Sympo  
on  
Sonic and Ultrasonics  
OCTOBER 14, 15

HOST  
SCHOOL OF APPLIED SCIENCE  
COLUMBIA UNIVERSITY  
NEW YORK CITY

*Program*

1963 ULTRASONICS SYMPOSIUM

1966  
ULTRASONICS SYMPOSIUM  
STATLER HILTON HOTEL  
CLEVELAND, OHIO  
OCTOBER 12-14

1967  
SYMPOSIUM ON  
SONICS AND ULTRASONICS  
Final Program

1979  
ULTRASONICS SYMPOSIUM

The Monteleone Hotel  
New Orleans, Louisiana  
September 26-28, 1979

1973 IEEE  
ULTRASONICS  
TITLES AND ABSTRACTS  
NOVEMBER 5-7,  
NAVAL POSTGRADUATE SCHOOL



1968 IEEE  
ULTRASONICS SYMPOSIUM  
FINAL PROGRAM

1969  
ULTRASONICS SYMPOSIUM  
FINAL PROGRAM

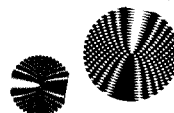
Chase Park  
St. Louis, Missouri  
Sept. 24-26, 1969

STATLER HILTON  
NEW YORK  
SEPT. 25-27

Sponsored by the  
Group on Sonics and Ultrasonics  
of the  
Institute of Electrical and Electronics Engineers



1977  
ULTRASONICS SYMPOSIUM  
ON SONICS AND ULTRASONICS  
SEPTEMBER 26-28, 1977



Los Angeles Hilton  
SEPTEMBER 22-24

The TowneHouse  
Phoenix, Arizona

1974 IEEE ULTRASONICS  
NOVEMBER

## Meet Your Symposium Committee



GENERAL CHAIRMAN

RICHARD STERN

Richard Stern was born in Paterson, New Jersey and attended grammar school in Paterson and high school in Fairlawn, New Jersey. In 1946, at the end of WW II, his family moved to Los Angeles, California where, at the age of 16 he started UCLA as an engineering student. Three semesters later he dropped out to play piano with a dance band only to return to UCLA as a Physics major. Completing his B.A. degree in Physics he entered the Air Force as a second Lieutenant and completing his active duty required by the ROTC program he reentered UCLA in order to complete his M.S. and Ph.D. in Physics, specializing in acoustics. After taking a one year postdoctorate tour at Imperial College, in London, he returned to UCLA as an Assistant Professor in the School of Engineering and Applied Science. He is now a full professor and the Assistant Dean, Undergraduate Students for the School.

Dick likes to ski and has many hobbies, including woodworking, stained glass and a TRS 80 computer. He has a 1930 Model A Ford which he keeps insisting that he will restore someday.



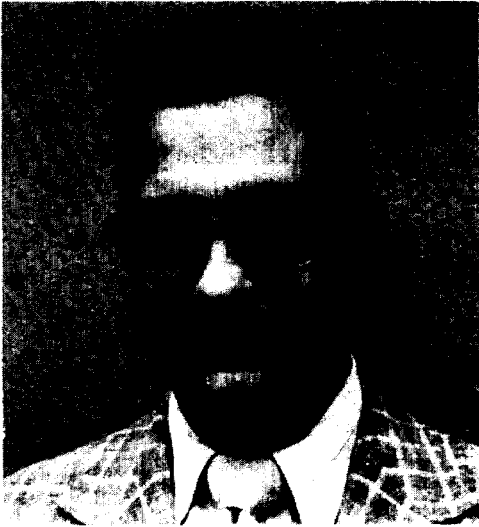
PROGRAM CHAIRMAN

GEORGE A. ALERS

George Alers was born in a small mining town in Arizona and grew up in West Texas. After getting a BA degree in Physics from Rice University, he went to the State University of Iowa in Iowa City, Iowa, where he received his Ph.D. in 1954 as a Physics major. Early professional interests centered on the mechanical properties of metals which he studied as a "metal physicist" in the Metallurgy Department of the Westinghouse Research Laboratories.

After moving to the Scientific Laboratory of the Ford Motor Company in 1956, George concentrated all of his research efforts in the field of ultrasonics by measuring the elastic constants of single crystals as a function of temperature, pressure and magnetic fields. In 1968, the challenge of applied research caused him to join the staff of the Rockwell International Science Center in California where he now holds the title of Principal Scientist.

George is currently a member of the Sonics Committee of the ASNT and served the IEEE Sonics and Ultrasonics Group as Technical Chairman of the 1975 Ultrasonics Symposium in Los Angeles. He served the GSU AdCom from 1976 to 1978 as Vice President becoming President in 1979.



#### LOCAL ARRANGEMENTS

##### BILL AICKLEN

Bill Aicklen was born in New Orleans, Louisiana, and grew up in that area. During his undergraduate days at Tulane University, he was an active member of the student branch of AIEE (now IEEE), and the Math Club. After graduating with a BSEE he went to work for a local consulting engineering firm. After a few years, he joined Kaiser Engineers and worked on the construction of a large aluminum reduction plant in a suburb of New Orleans. Much of the design and construction of the plant was concerned with developing better ways to utilize aluminum as an electrical conductor. Bill then worked on the design and construction of several large industrial plants in southern Louisiana.

In 1962 he joined Chrysler's Space Division at NASA Michoud Assembly Facility in New Orleans and worked in Facilities Engineering to implement the facilities required to develop, build, and test the Saturn S1-B launch vehicles for the Apollo and Sky-Lab programs. While at Chrysler, he earned his MSEE at Louisiana State University in 1968.

Since 1976 he has been with Waldemar S. Nelson and Company, Inc. in New Orleans and is currently working on the design of electrical systems and instrumentation for offshore oil and gas production facilities. His family consists of his wife Doris and three daughters, two of which are currently in college. Bill is active in the IEEE and was the New Orleans Section Chairman for 1977-78. In his spare time he works with his wife in real estate sales and development and follows the Saints and Tulane football.



#### FOREIGN PAPERS

##### BERNHARD R. TITTMANN

Dr. Tittmann was born at the foot of Mt. Kilimandjaro in Tanganyika (formerly German East Africa) to Austrian parents. He came to the United States in 1950, became a citizen in 1956, and received his B.S. in Physics from George Washington University in 1957 and a Ph.D. in 1965 from UCLA in Solid State Physics. From 1957 to 1961 he was a member of the staff in the Radar Antenna department at Hughes Research and Development Co., Culver City, California, and has been at the Science Center, Rockwell International, in Thousand Oaks, California, since 1966. The years 1977 through 1978 he spent as Professor Associe at the Solid State Physics Department of the Ecole Normal Superieure, Paris, France, where he taught a graduate course in Physical Acoustics and carried out research in acoustic surface wave scattering. His current interest is in applying his knowledge in physical acoustics to material characterization by surface and bulk elastic waves. At present he is studying the diffraction and dispersion of elastic waves in the presence of surface and subsurface anomalies with application to NDE in semiconductors, ceramics, and aerospace alloys. In his work on the attenuation of elastic waves in lunar return samples, he is providing the first convincing proof that the anomalously low attenuation of seismic waves on the moon is a consequence of the complete absence of volatiles in the lunar crust. In previous years he has contributed to the understanding of ultrasonic wave interactions with conduction electrons in superconductors and to the study of magnetostatic modes in ferrites. He has about 85 publications, has made over a hundred presentations, and is a member of IEEE, Sigma Xi, the American Physical Society and the American Geophysical Union.

FUTURE SYMPOSIA



PUBLICATIONS

REYNOLD S. KAGIWADA

Reynold S. Kagiwada is a native Californian, having been born and raised in Los Angeles. He attended the University of California at Los Angeles, where he received the B.S., M.S., and Ph.D. degrees in physics. An experimentalist, he wrote his thesis under the guidance of Professor Rudnick in the area of ultrasonics in solids at low temperature. He taught on the physics faculties of the University of California at Los Angeles and the University of Southern California.

Reynold joined TRW Defense and Space Systems Group in Redondo Beach, California, in 1972. He established a research group on surface acoustic wave (SAW) devices. This group gradually grew to include work on shallow bulk acoustic waves, acousto-optic modulators, semiconductor growth and characterization, mm waves, and Josephson junctions. He is presently the Manager of the Solid State Technology Department of Systems Group Research Staff.

Reynold met his wife, Harriet, while attending UCLA. They have two children, Julia and Conan, who are in grade school. Present hobbies include music, fishing, tennis and gardening.

- 1980 Boston - Park Plaza  
November 5-7  
R.C. Williamson  
MIT Lincoln Laboratories
- 1981 Chicago - Continental Plaza  
September 16-18  
L.W. Kessler  
Sonoscan Inc.
- 1982 San Diego - Town and Country  
October 27-29  
J. de Klerk and B.R. McAvoy  
Westinghouse Research Laboratories
- 1983 Atlanta or Orlando  
M. Levy
- 1984 Dallas - Ft. Worth  
L.T. Claiborne
- 1985 San Francisco
- 1986 Washington D.C.

\* \* \* \* \*

THE 1980 SYMPOSIUM

The 1980 IEEE International Ultrasonics Symposium will be held at the Park Plaza Hotel in Boston, Massachusetts on Wednesday, Thursday and Friday, November 5, 6, and 7. The last three days in the week were chosen so that the attendees would feel free to linger over the weekend to enjoy the sights, sounds and scenes that make Boston an exciting place to visit. As an additional feature, the headquarters hotel has been chosen to be near the center of Boston close to the Commons and Quincy Market area.

Technically, July 3rd has been established as the deadline date for submission of abstracts.

Dick Williamson of Lincoln Laboratories will be the General Chairman and Herman van de Vaart, of Sperry Research will be the Technical Chairman. They will be assisted by Alan Budreau, Local Arrangements, Larry Lynnworth, Publications, Tom Parker, Finance and Lee Solie, Publicity.

This will be the third time the Ultrasonics Symposium has been held in Boston. It is also the 100th Anniversary of piezoelectricity. Come join your fellow piezoelectricians in Boston for the celebration.

1979 INTERNATIONAL ULTRASONICS SYMPOSIUM

INVITED PAPERS

C.S. Desilets and J.D. Fraser	"Design of Quarter-Wave Matched Transducers and Transducer Arrays"
R.C. Williamson, V.S. Dolat, R.R. Rhodes and D.M. Boroson	"A Satellite-Borne SAW Chirp-Transform System for Uplink Demodulation of FSK Communication Signals"
M.F. Lewis	"Temperature Compensation Techniques for SAW Devices"
W.J. Tanski	"GHz SAW Resonators"
S. Fukuda, T. Shiosaki and A. Kawabata	"Acoustooptic Interactions in Piezoelectric Semiconductor: Tellurium"
B. Hunsinger	"SAW Filter Applications in Consumer Electronics"
I.C. Chang, P. Katzka, J. Jacob and S. Estrin	"Programmable Acousto-Optic Filter"
K.H. Yen, K.F. Lau and R.S. Kagiwada	"Recent Advances in Shallow Bulk Acoustic Wave Devices"
H. Sussner	"The Piezoelectric Polymer PVF <sub>2</sub> and its Applications"
B.T. Khuri-Yakub	"Nondestructive Evaluation of Structural Ceramic Components"
K.F. Renk	"A Survey on the Optical Detection of Terahertz-Phonons"
G.S. Kino	"Zinc Oxide on Silicon Acousto-Electric Devices"
G.A. Williams	"Fifth Sound in Superfluid Helium"
M. Yamanishi, K. Tsubouchi and N. Mikoshiba	"Resonant Brillouin Scattering in Population-Inverted Semiconductors"
A.F. Brown	"Recent Developments in Ultrasonic Spectroscopy"
T. Wang	"Acoustic Levitation and Manipulation for Space Applications"
T. Bristol	"Peebles 1979 - Case Studies in Advanced Signal Processing"
S.A. Laskey and R.O. Schilke	"The Acoustics of Brass Instruments"

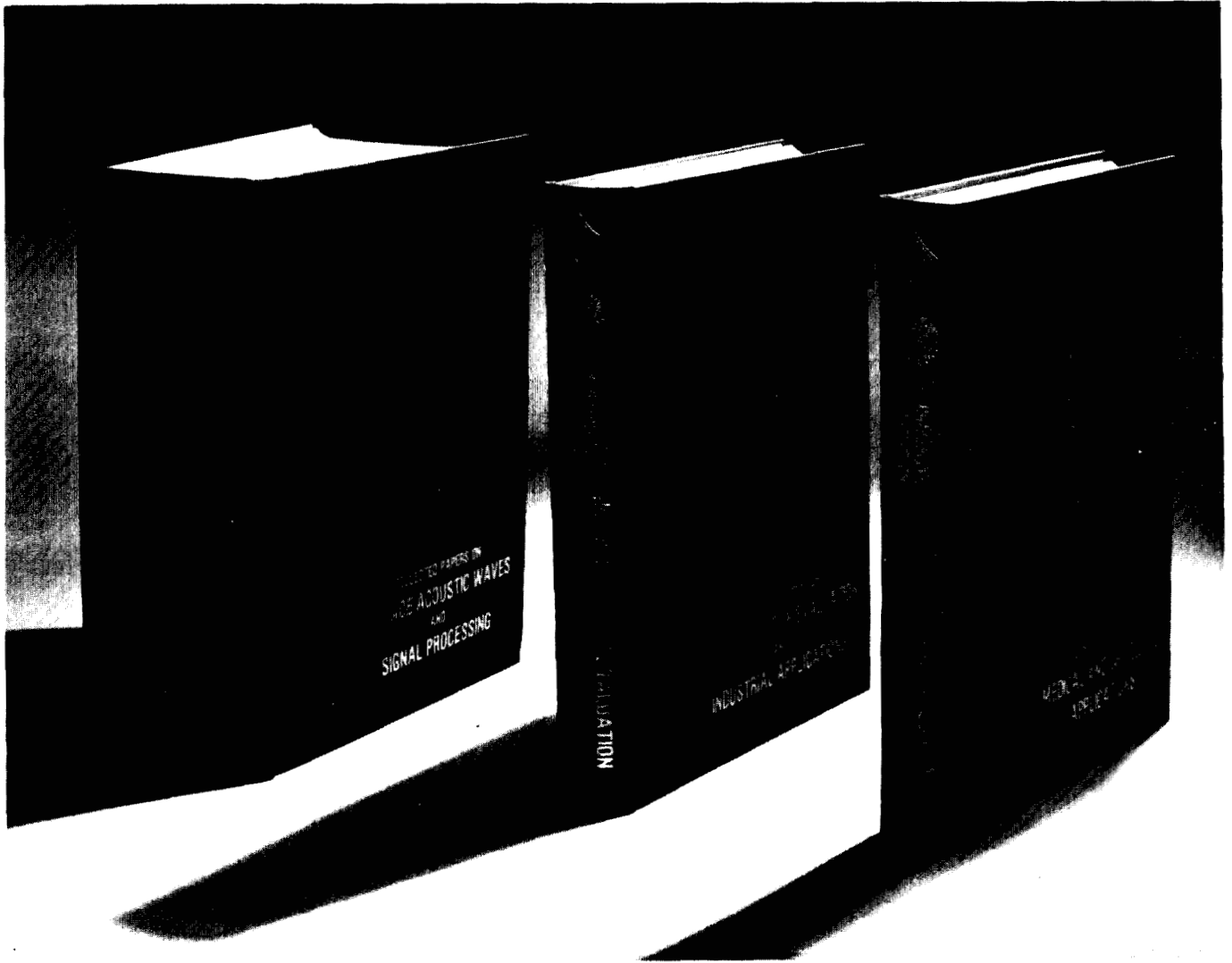
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SOCIAL ACTIVITIES

- (1) Cocktail Hour, Thursday Eve, Monteleone Hotel featuring complimentary Buffet Appetizers.
- (2) Guest program  
Get-acquainted Luncheon with Dr. Larry Kessler, Sonoscan Inc., as guest speaker on "What do husbands do at these silly meetings, anyway?!"

- (3) Cultural and Entertainment Possibilities
  - \* Horsedrawn carriage tour of French Quarter
  - \* Ride on the Mississippi on a Paddle-Wheeler
  - \* Tour of Garden District
  - \* Tour of plantations
  - \* Fashion show at the Pontchartrain Hotel





\* \* \* \* \*

Our farsighted conference coordinator, B.R. McAvoy, is already at work on the Ultrasonics Symposium for the year 2000. He plans to use PHONE-VISION. Participants will gather at selected sites around the world to view and be viewed on large screens through a satellite communications link. Booths will be provided for conversations between individual participants. Please contact Bruce by 1990 if you wish to host a group in your city or country.

CHAPTER NEWS

WASHINGTON/NORTHERN VIRGINIA/BALTIMORE CHAPTER

Election of officers for the upcoming year is being conducted by mail. Nominations for chapter officers are: Denis Webb, Naval Research Laboratory, Chairman; Ken Davis, Naval Research Laboratory, Vice-Chairman; Chris Vale, Westinghouse, Secretary/Treasurer. The technical program for the year is also being formulated. Members are requested to relay program suggestions, particularly in the areas of SAW signal processing, medical ultrasonics and NDE, to Denis Webb, Tel: (202) 767-2862.

TECHNICAL ACTIVITIES COMMITTEE

The Technical Activities Committee has filled the vacant chairman positions of two of its subcommittees. T.R. Meeker, Bell Labs, Allentown, PA, has accepted the chairmanship of the Piezoelectric Crystals Subcommittee. This subcommittee recently finished IEEE Standard 176-1978 on piezoelectricity and is now gathering ideas on related standards and definitions activities.

Fred W. Kremka, Wake Forest University, Winston-Salem, North Carolina, has assumed chairmanship of the Subcommittee on Ultrasonics in Medicine. This subcommittee is actively engaged in a project on Ultrasonic Field Parameter Expository Standards. Anyone wishing to contribute ideas and opinions should contact Fred.

The chairmanship of the subcommittee on Delay Lines and Acousto-optical Devices is still vacant. Any suggestions on filling this position should be directed to Errol P. EerNisse, Quartex, Inc., 1020 W. Atherton Drive, Building C-202, Salt Lake City, Utah 84107.

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