22ND OPENED SEMINAR ON ACOUSTICS

Świeradów Zdrój, September 8-13, 1975

The Seminar was held September 8-13, 1975 at Świeradów Zdrój. The promotor of the Seminar was the Wrocław Section of Polish Acoustics Society as well as the Institute of Telecommunication and Acoustics of Wrocław Technical University.

The Organizational Committee was composed of: Chairman Zb. Żyszkowski, Assistant Chairmen: St. Będkowski, W. Jankowski, W. Majewski, Secretary General E. Talarczyk as well as members: Cz. Basztura, T. Ciszewski, A. Gabor, M. Głowacki, R. Godyń, J. Gogolewski, T. Gudra, A. Hołówko, Zb. Jakubek, J. Jaroszyński, J. Kamiński, B. Kulesza, H. Kusek, H. Kustrzycka, K. Łowińska, W. Myślecki, St. Nuckowski, A. Podrez, J. Świerkowski, B. Tokarz, K. Warszawski, T. Wawrykowicz, Z. Wasowicz, J. Zalewski, J. Zarzycki.

The Seminar was attended by over 300 participants, including 18 persons from abroad. Those present were scientists from Great Britain, Czechoslovakia, Denmark, France, the German Democratic Republic, Sweden and Hungary.

Most of participants were PTA members, namely 179.

The participants were lodged in the buildings of Sanatorium Odra at Świeradów and rest-homes.

Four plenary lectures as well as 145 lectures and reports in sections were delivered. Individual sections comprised the following fields of acoustics:

Section A – Cybernetic acoustics, physiological acoustics, speech acoustics, musical acoustics, psychologic acoustics and electroacoustics.

Section B – Physical acoustics, architectural and room acoustics, noise and vibrations.

Section C – Quantum and molecular acoustics, hydroacoustics and ultrasounds.

The time of one lecture in section was 15 min., the discussion following the lecture – 10 min.; a report lasted 10 min., discussion – 5 min.

The lectures submitted to the Organizational Committee at fixed term were printed in Typographic Establishment of Wrocław Technical University in two volumes entitled «The Papers of 22nd Opened Seminar on Acoustics» numbering 650 pages. The lectures of Polish authors are published in Polish. All lectures are preceded with an English summary. According to the opinion of the participants the verification – used for the first time at the 22nd Seminar – of lectures to be delivered has stimulated the authors to a better elaboration of their papers and has contributed to raising the scientific level of the Seminar.

The «Papers» comprise a total of 114 lectures; thereof 13 were not delivered because there authors were absent at the Seminar. Apart from lectures published in the "Papers" eight reports and ten lectures submitted at a later date were delivered.

Lectures delivered by young scientific workers, members of Polish Acoustics Society (PTA), all at the age under 35 have been evaluated within the framework of Marek Kwiek competition. The competition involved 62 lectures.

Besides plenary and section deliberations there were held «round table» sessions on the subject:

1. The use of digital techniques in acoustic metrology.
2. Acoustooptics and holography.

This new form of deliberations in the history of Opened Seminars on Acoustics has aroused a vivid interest amongst their participants.

During the Seminar several organizational meetings were held, of which special mention deserves the Convention of Delegates of Polish Acoustics Society (PTA) at which, among others, the draft of a new statute of the Society has been discussed and new members of Main Board were elected. A special event to the Convention was the conferment upon prof. Wiktor Jankowski of the dignity of honorary member of PTA.

An event of special importance was the Session of Environmental Protection Section at which in addition to the members of Environmental Protection Section also the concerned representatives of industrial establishments of Lower Silesia participated. On the agenda were problems concerning the sources of industrial noise and the methods of noise control.

During the seminar the firm Brüel-Kjaer displayed its present activities in the field of electroacoustic measurement.

An attractive diversification of the laboriously spent days were the evening social get-togethers facilitating the establishment of scientific contacts amongst the members of the Seminar. Doubtless they contributed to the friendly climate prevailing at the Seminar and further integration of the milien of acousticians.

Plenary lectures

1. L. Filipczyński, *Ultrasonar methods of medical diagnostics.*
2. W. Jankowski, Z. Ziemski, *Resistance of hearing organ in experimenting with animals.*
3. L. Pimonow, *A new system of automatic recognition of objects, especially of speech words.*
4. B. Rogala, *The probabilistic characteristics of the signals transmittes in electroacoustical systems.*

Lectures in sections

Section A

1. B. Adamczyk, W. Kuniszyk-Jóźwiak, E. Smółka, P. Pałczyński, *Echo-reverberation correlation by influence on the velocity of speaking.*
2. Cz. Basztura, W. Majewski, *Influence of frequency ranges on speaker identification by means of statistical analysis of zero-crossing rates.*
3. S. P. Brachmański, A. Masny, Z. .Wąsowicz, *Investigation of reverberation time for typical living rooms.*
4. A. E. Brown, *An assessment of differences between players of the horn.*
5. G. Budzyński, A. Kulowski, *Bowed string oscillation analysis.*
6. K. Dekan, *Investigations of brass instruments.*
7. A. Dobrucki, C. Szmal, *The results of objective loudspeaker estimation which takes into consideration some properties of hearing.*

8. M. M. Dobrzański, K. Lenczewska, *Quantum effects in the mechanism of hearing.*
9. M. Drobner, W. Głowacka, *Perception of simultaneity and no-simultaneity of sound.*
10. M. Drobner, I. Romek, *Influence of fundamental note intensity on quality of sound.*
11. R. Dyba, B. Żółtogórski, *Spectral analysis Doppler effect in loudspeakers.*
12. T. Fidecki, *Contactless, unbiased magnetic recording of harmonic signals.*
13. A. Gabor, J. Zarzycki, *Electroacoustical systems nonlinearity and memory analysis using Volterra series.*
14. M. Głowacki, B. Rogala, J. Szymbor, *Acoustical signals and noise in electroacoustical systems.*
15. H. Harajda, *Acoustic research done during the IV International Henryk Wieniawski Competition.*
16. W. Hamer, *The effect of audiomonitoring room upon the location of image sources.*
17. H. Harajda, J. Kluczek, I. Narucka, *Chickens' reaction to acoustic stimuli.*
18. S. Hlibowicki, J. Renowski, *The influence of the outer and middle ear frequency response on the width of the critical bands.*
19. D. Holz, *Investigations on a possible substitution of resonance wood by synthetic materials.*
20. W. Jassem, *Classification of Polish voiceless fricatives.*
21. J. Kacprowski, W. Mikiel, A. Szewczyk, *Acoustical modelling in the physio-pathology of the human vocal system.*
22. T. Kopczewski, T. Fidecki, *Fast recirculating memory as a delay line for low frequency signals.*
23. W. Kraak, G. Fuder, L. Kracht, *Individual variabilities and differences in noise-induced hearing stress.*
24. H. Kubzdela, K. Mytkowski, *The preparation of technical conditions for computerizing the analysis of the speech signal.*
25. B. W. Kulesza, B. Rogala, J. Sobolewski, *Studies of shortterm correlation functions of musical signals.*
26. H. Kusek, *Attempt of determination of speech understanding degree during mental concentration preceding physical effort.*
27. H. Kusek, *Speech understanding during physical effort of static characteristics.*
28. W. Majewski, Cz. Basztura, *Speaker identification based on statistical distributions of F_0 determined by means of zero-crossing rates.*
29. W. Makowski, *Audio motoring room of Musical Acoustic Chair of State College of Music.*
30. W. Mikiel, J. Drzewiecki, J. Jakubowicz, I. Kupczyk, K. Kupczyk, *A logarithmic analog/digital converter.*
31. W. Mikiel R. Gubrynowicz, W. Hagmajer, *A logarithmic A/D conversion of peak value of speech signal and a method of time representation of measurement data.*
32. K. Mlicka, S. Prus, *The formation of loudness sensation for partially masking sounds.*
33. W. Myślecki, J. Zalewski, A. Gos, *Investigation the influence of glottal excitation pulse shape on the quality of polish synthetic vowels.*
34. S. Nuckowski, B. Rogala, J. Szymbor, *Experimental investigations on transfer properties of nonlinear systems with memory.*
35. S. Nuckowski, B. Rogala, M. Walaszek, *Nonlinear distortion measurements using wide-band signal.*
36. S. Nuckowski, B. Rogala, R. Zmonarski, *Acoustic signal distortions in loudspeaker systems.*
37. A. Podrez, J. Renowski, K. Rudno-Rudziński, *Analysis and design of loudspeaker — open back enclosure system.*
38. S. Prus, *The diffluence effect in decision processes.*
39. A. Rakowski, *Acoustic dissonance of a beating tone pair.*

40. H. Rzeczkowska-Sienkiewicz, A. Herman, *Investigation on stability of «High-Energy» magnetic oxides and tapes.*
41. Z. Sołtys, *Programmed device for automatic phonic-signals switching.*
42. J. Sundberg, *Vibrato and vowel identification.*
43. D. Szybista, *Recognition of Polish idiophonemes in continuous speech.*
44. Z. G. Wąsowicz, Z. Sołtys, *The tests for listening loudspeakers evaluation.*
45. J. Zalewski, W. Myślecki, *Investigation the influence of glottal excitation frequency and amplitude changes on the quality of synthetic isolated vowels.*
46. J. Zarzycki, A. Gabor, *Random signals power spectrum deformations due to the electroacoustical system memory and nonlinearity.*
47. Z. Ziemski, H. Kusek, W. Jankowski, H. Rodziewicz, *Understanding of speech at heavy industry working environment.*

Section B

1. B. Albiński, *Investigation results concerning sound level precision meters PDJ-202 in cooperation with octave filters.*
2. D. Augustyńska, *Experiments on the effect of an airflow on the characteristics of absorptive muflers for ventilating systems.*
3. W. Bartelmus, A. Studziński, *The coherence of vibration, acoustic signals in diagnostic of gearbox.*
4. W. Beblo, W. Mrukwa, W. Kochan, J. Desselberger, *Measurement of vibroisolation properties of polyuretan elastomers made in Poland.*
5. St. Będkowski, St. Duda, Zb. Jakubek, M. Staffa, *Prefabricated sound-protecting cabins for industry.*
6. B. Bogusz, H. Idczak, A. Jaroch, *Measurement of room absorption by steady-state method.*
7. V. Chalupova, *The changes of the spectral composition of noise in the course of working cycle of a motor.*
8. W. Cholewa, *The cepstrum analysis – spectrum of acoustic or vibration signal spectrum in the diagnosis of machines.*
9. S. Czarnecki, M. Czechowicz, *Suppressors for exhaust high-pressure installations.*
10. M. Czarny, E. Amarowicz, *Application of Laval nozzle for noise stifling of pulsatory exhaust jets.*
11. M. Czarny, W. Samborski, *The surces of noise in ore dressing plants and some methods of noise reduction.*
12. M. Czarny, L. Szumilas, *Vibration dampers for manual air-operated tools.*
13. Z. Dukiewicz, W. Ziółkowski, A. Śliwiński, *Cross correlation between air and structural sound signals of a bar.*
14. R. Dyba, *Spectrum distortions of acoustical signals produced by a plane wave source.*
15. G. Engler, *Calculation of noise passenger cars and conclusions for construction.*
16. G. Engler, *Nomograms for calculation of noise emitted by motor vehicles.*
17. S. Jaworski, *Methods of the investigation of the efficiency of personal protections against vibrations transmitted through the legs.*
18. J. Kamiński, *The acoustic method of analysing the one working cycle of the motorcycle engine.*
19. N. Kosińska, A. Śliwiński, *Testing of dilatation slots effect of saw blades on decrease of rotation noise level.*
20. T. Kwiek-Walasiak, A. Walasiak, *Tentative determination of usefulness of narrow-band spectral analysis, correlation analysis and power-spectrum analysis methods to estimation of main noise and vibrations sources and transmission ways of them in complicated mechanical system.*

21. T. KWIEK-WALASIAK, A. WALASIAK, A. FREULICH, *The application of a correlation and power spectrum analyses to a settlement of the main sources of the noise and vibrations in the cabin of the lorry Star 200.*
22. T. KWIEK-WALASIAK, A. WALASIAK, B. WIERZCHOWSKI, K. JĘDRZEJCZYK, *The noise and vibrations sources analysis in the cabin of the prototypical lorry Star 200.*
23. R. MAKAREWICZ, *Highway routes in terms of L_{eq} decrease in a given point.*
24. R. MAKAREWICZ, *Determinatioon of sonic boom focus lines.*
25. J. MARCZYK, *Methodology of the investigations of efficient protections against vibrations acting upon the hands.*
26. J. MOTYLEWSKI, D. NITECKI, *Measurement of noise emitted by machines under industrial conditions.*
27. A. MUSZYŃSKI, H. CHODKIEWICZ, *Shock absorbers in transient state.*
28. Z. NICZYPORUK, A. LIPOWCZAN, *The investigation of microphone transmission function for incoherent turbulence interaction on surface of membrane.*
29. B. PLEBAŃSKI, E. IGNASZEWSKI, A. SZKLAREK, *Measurements and evaluation of vibrations which occur on the rail vehicle driver's work stand.*
30. M. RABIEGA, B. RUDNO-RUDZIŃSKA, J. SZYMBOR, *Utilization of the tone-burst method to the investigation the acoustical properties of small resonant filters in the impedance tube.*
31. L. RUTKOWSKI, *Acoustic control and prediction of the technical state of machine.*
32. H. RYFFERT, R. MAKAREWICZ, E. KRASIŃSKA, *Generalized formula for the level of noise penetrating into the room.*
33. M. SANKIEWICZ, A. WITKOWSKI, *Acoustical adaptation of auditory hall into recording studio.*
34. M. TAJCHERT, *A digital method of geometrical analysis of acoustical field within an enclosure.*
35. A. WITKOWSKI, *Optical-acoustical modelling of the room acoustics.*
36. M. ZWIERNIK, R. WYRZYKOWSKI, *Sound velocity in superheated steam in conditions of intermolecular action according to Stockmayer's potential.*
37. B. ŻÓŁTOGÓRSKI, *Finite amplitude effects in plane sound waves.*

Section C

1. M. ALEKSIEJUK, *Acoustic waves velocity near structural phase transition in $KMnF_3$.*
2. J. BERTRAND, E. DRESCHER, J. RANACHOWSKI, *Ultrasonar of the evaluation of the degree of wear of molybdenum electrodes.*
3. J. BEDNAREK, T. CISZEWSKI, J. GOLANOWSKI, T. GUDRA, E. TALARCZYK, *An ultrasonic method of measuring the stress in rocks.*
4. J. BEDNAREK, T. CISZEWSKI, J. GOLANOWSKI, T. GUDRA, E. TALARCZYK, *An ultrasonic method of alarming the discontinuity of stream in belt conveyors.*
5. W. BECZEK, R. GOMUŁA, P. WITORT, *Ultrasonograph USG-10.*
6. J. BERDOWSKI, J. SZUBER, *Investigations of the properties of DADA — crystals by the method of light dispersion on acoustic phonons.*
7. W. BOCH, *Acoustical studies of solvatation in $ZnCl_2$ in methanol solutions.*
8. W. BOCH, *Ultrasonic absorption properties of $ZnCl_2$ in methanol solutions.*
9. M. BRZOZOWSKA, *The comparison of accoustic field scattering on the sinusoidal and saw-form surface.*
10. E. DANICKI, *Velocity dispersion in piezoelectric wavequides.*
11. M. M. DOBRZAŃSKI, *Low temperature acoustoelectrodynamic effect.*
12. A. DRZYMAŁA, M. CIEŚLAK, *Definition of phase transition in liquid crystals with the aid of acoustic methods.*
13. E. EGGERT, J. SCHREIER, *A method for simultaneous measurement of ultrasonic attenuation and velocity in solid polymers.*

14. E. Eggert, J. Schreier, *Investigation of mechanical relaxation in polymers by attenuation of ultrasound.*
15. J. Etienne, L. Filipczyński, A. Firek, J. Groniowski, H. Klawe, J. Kretowicz, *Doppler method with two probes operation mode for placenta location and ultrasonic intensity measurements in vivo.*
16. L. Filipczyński, G. Łypacewicz, J. Sałkowski, T. Waszczuk, *Ultrasonograph UO-4 for eye examination and intensity determination in focused beam by means of electrodynamic method.*
17. J. Finak, Z. Kleszczewski, M. Wojewoda, *Measurements of the acoustooptic properties of the 1 GHz piezoelectric transducers.*
18. J. Finak, Z. Kleszczewski, M. Wojewoda, *Acoustic and acoustooptic properties investigations of crystals by means of light diffraction on acoustic waves method.*
19. J. Górczyński, *Industrial applications of ultrasonics in Poland.*
20. Z. Jagodziński, *Parameters and service characteristic of side sonar.*
21. Z. Kaczkowski, *Alcofers — new piezomagnetic alloys.*
22. Z. Kaczkowski, E. Milewska, S. Różański, *Alfer transducers for the range 55 kHz.*
23. W. Kasprzyk, *The determination of aerosol coagulation time in the acoustic field using Oseen's theory of the flow around a sphere.*
24. Z. Klusek, *Static properties of subaqueous noise in Balticsea.*
25. W. Kołtoński, A. Jaroszewska, *Echo-sounder for the salt mines.*
26. E. Kozaczka, F. Markiewicz, T. Nowak, L. Szluiński, *Propagation of normal mode in shallow water.*
27. M. Kozioł, *Wide-band quartz transducers and their application investigations of highly attenuating liquids.*
28. R. Kubak, M. Nevertal, J. Rozman, G. Dvorsky, *Digital processing of the Doppler velocity meter signal in hemodynamics measurements.*
29. R. Leć, *The interaction of a circularly polarized light and an acoustic waves in a optically active isotropic crystals.*
30. B. Leśniak, *Investigations on an air jet generator by means of the Toepler method.*
31. Cz. Lewa, B. Linde, St. Łętowski, *Piezoelectric properties of polymers as well as attempts of their utilization for electroacoustic conversion.*
32. J. Lewandowski, *The propagation of acoustic waves in viscous suspensions.*
33. M. Łabowski, P. Miecznik, *Intensity ratio of the central line and Mandelshtam-Brillouin line in mixtures.*
34. J. Mamczarek, W. Graczyk, *Determination of the acoustic load impedance of high power piezoceramic transducer in dummy load arrays.*
35. A. Markiewicz, *The influence of the quarter wavelength layer on the transient behavior of the piezoelectric transducer.*
36. J. Morawiec, *Investigation temperature dependence of ultrasonic waves propagation and some solids in $BaTiO_3$ ceramics.*
37. W. Nasalski, *Theory of multiple-liquid acousto-optical transducer in ultrasonar holography.*
38. B. Niemczewski, *Results of measuring cavitation intensity in function of temperature for principal chlorine solvents suitable for use in ultrasonic cleaning.*
39. A. Nowicki, K. Borodziński, T. Powałowski, *In vitro and in vivo blood flow velocity profiles measurements.*
40. J. Olszewski, *Scattering of plane longitudinal waves of different frequencies by a rotary ellipsoid particle.*
41. A. Opilski, *The influence of the surface states upon the propagation of the ultrasound surface waves.*
42. A. Opilski, O. Delekta, D. Dudek, *The influence of admixtures on a propagation of longitudinal ultrasound wave in TGS single crystals doped by Cu^{2+} ions.*

43. B. Peńsko, Z. Toczyski, *The capacitance method of distance measurement and its application in displacement meter up to 40 kHz.*
44. P. Peronneau, J. P. Bournat, W. Sandman, M. Xhaard, *Pulsed Doppler ultrasonic blood flowmetry: Application to the study of tubings and stenotic vessels.*
45. R. Płowiec, *Ultrasonic determination of limiting shear rigidity of some syntetic oils.*
46. E. Soczkiewicz, *Freevolume in solutions of liquids measured by means of acoustical method.*
47. S. Szyma, *An acoustic method of determining the characteristics of the dispersive composition of polymer solutions.*
48. A. Śliwiński, J. Sułocki, P. Czyż, L. Lipiński, *The ultrasonic method and apparatus for measure of concentraction of liquid mixtures.*
49. J. Tabin, *The ultrasonic focusing mirror.*
50. E. Talarczyk, *Sandwich transducer for air-borne pulse ultrasound.*
51. Sz. B. Tőkés, *Digital analysis and filtering of holographic reconstruction.*
52. T. Walecki, *Method of mathematical computation of ΔE — effect in ferrites.*
53. E. M. Walerian, *Explanation of the assymetry of Bordoni peaks.*
54. M. Walewski, P. Rajchert, *Digital measurement of temperature by means of quartz resonator.*
55. L. Werblan, L. Skubiszek, *Attenuation of ultrasonar waves in aqueous mixtures of tetra — hydrofuran and propylene carbonate.*
56. K. Więckiewicz, E. Maciejko, A. Wojnar, *The influence of some construction parameters on properties of ultrasonic piezoelectric transducers.*
57. B. Wiślicki, W. Szachnowski, *Structural analysis of jet fuels hydrocarbon fractions*
58. M. Witkowska, *Problem of elastic constants of liquid crystals.*
59. B. Zapiór, A. Grzegorczyk, A. Juszkiewicz, *Ultrasonic velocity and adiabatic compressibility in molten salt mixtures of $CdCl_2(Na, K)Cl$.*
60. B. Zapiór, A. Łomnicka, *The influence of ultrasonic field on the catalytic activity of the MnO_2, CuO and Ag_2O oxides.*
61. J. K. Zieniuk, *Improved system for ultrasonar holography.*

Zbigniew Żyszkowski (*Wrocław*)