

The 50th Anniversary of the Committee on Acoustics of the Polish Academy of Sciences

Andrzej RAKOWSKI⁽¹⁾, Antoni ŚLIWIŃSKI⁽²⁾

⁽¹⁾ *Chair of Musical Acoustics, The Fryderyk Chopin University of Music*
Okólnik 2, 00-368 Warszawa, Poland

⁽²⁾ *Institute of Experimental Physics, The University of Gdańsk*
Wita Stwosza 57, 80-952 Gdańsk, Poland; e-mail: fizas@univ.gda.pl

(received May 23, 2014; accepted June 23, 2014)

The Committee on Acoustics of the Polish Academy of Sciences was founded in 1964 by the resolution of the General Assembly of the Polish Academy of Sciences, within its Division of Engineering Sciences (Division 4). The idea of creating the Committee was brought up by Professor Ignacy Malecki, a distinguished scientist, an academic teacher, and an internationally acclaimed authority on acoustics (RANACHOWSKI *et al.*, 2013).

The Committee comprises 25–30 members, elected for a term of four years. Most of them are professors possessing outstanding scientific accomplishments in various specializations of acoustics. The Board of the Committee is formed of the President, three Vice Presidents, and the Secretary. The Committee on Acoustics had six Presidents in its history:

Professors Ignacy Malecki (1964–1969),
Halina Ryffert (1969–1971),
Leszek Filipczyński (1972–1994),
Andrzej Rakowski (1995–2007),
Zbigniew Engel (2007–2011), and
Eugeniusz Kozaczka,

the current President elected in 2011 for a term of four years. In 2008, Professor Andrzej Rakowski was nominated to the post of the Honorary President of the Committee on Acoustics.

The 50th Anniversary of the Committee on Acoustics gives the opportunity to remind of its activities and notable events from its history. The Committee has been involved in acoustics understood as a broad interdisciplinary area of science and technology. One of the main areas of the Committee's interest is

physical acoustics dealing with elastic wave phenomena in their whole frequency range, including infrasounds, audible sounds, ultrasounds, and hypersounds. The diversity of elastic waves is a basis for scientific research in other specializations of acoustics such as architectural acoustics, building acoustics, environmental and urban acoustics, psychoacoustics, speech acoustics, biomedical acoustics, electroacoustics, musical acoustics, aeroacoustics, hydroacoustics, molecular and quantum acoustics, ultrasonics, structural acoustics, vibration and noise control. Several of those specializations are represented as the Committee's sections. The Committee comprises six sections: medical acoustics, molecular and quantum acoustics, environmental and architectural acoustics, hydroacoustics and ultrasonics, and vibroacoustics.

During the 50 years of its activity the Committee on Acoustics has undertaken a broad variety of activities aimed at the development of the scientific discipline of acoustics as well as at dissemination and application of the results of scientific research. The Committee has performed advisory and consultative functions for the government in various issues, of high importance to the social-economic and cultural development of the country, related to acoustics. It initiated scientific research programs, provided recommendations for the foundation of institutions dealing with acoustic environmental control, and prepared expert opinions for the government.

In 1966, on the Committee's initiative, a Polish quarterly journal *Archiwum Akustyki* was founded, as a joint publication of the Committee on Acoustics and the Polish Acoustical Society. The founder editor

of *Archiwum Akustyki* – Professor Stefan Czarnecki – served as its Editor-in-Chief until his death in 1982. Since 1976 the journal has also been published in an English-language version under the title of *Archives of Acoustics*. *Archives of Acoustics* has become a journal recognized at an international level. Its Polish version – *Archiwum Akustyki* – was discontinued in 1988. Since 1988 *Archives of Acoustics* has been published jointly by The Institute of Fundamental Technological Research of the Polish Academy of Sciences, The Committee on Acoustics of the Polish Academy of Sciences, and the Polish Acoustical Society. The journal's successive Editors-in-Chief were Professors:

Stefan Czarnecki (1966–1982),
 Ignacy Malecki (1982–1987),
 Eugeniusz Danicki (1988–1991),
 Józef Lewandowski (1992–1996),
 Leszek Filipczyński (1997–2003),
 Tadeusz Powalowski (2003–2008),
 Bożena Kostek (2008–2012),
 Andrzej Nowicki (2012–present).

In 1980s the Committee on Acoustics coordinated national research programs such as *Acoustics in Technology and Medicine (MR-24)* and the *Central Program of Fundamental Research (CPBP)*. After the foundation of the State Committee for Scientific Research (KBN) in 1991, the Committee on Acoustics initiated annual conferences presenting the outcomes of research projects supported by grants from the KBN. Proceedings of those conferences were published in three volumes in the years 1993–1999 (RANACHOWSKI, 1993, 1995, 1999).

After the introduction of economic reforms in Poland in 1990s, the Committee on Acoustics has no longer been involved in the planning and evaluation of research programs, but has still been responsible for the scientific level and general development trends of acoustics in the country. This duty is reflected in the activity of the Committee members who prepare expert opinions and recommendations for various organizations and participate in discussions at conferences and symposia organized under the auspices of the Committee.

A particularly important mission of the Committee on Acoustics is concerned with the problem of noise control in Poland. The Committee pronounces recommendations and opinions concerning legal regulations related to noise control and noise hazard prevention in the country.

On the Committee's initiative, a group of experts elaborated a comprehensive report titled *Noise and Vibration Hazards in Poland* (ENGEL *et al.*, 1984). On the basis of data collected in the report the State Board of Environmental Protection pronounced a resolution which states that “noise and vibration hazards

are so high in Poland as to be recognized a common hazard”. In 2005 the Committee on Acoustics published another report titled *Environmental noise protection in Poland in the light of European regulations* (SADOWSKI, ENGEL, 2005). Both reports have become important reference sources for institutions involved in environmental noise and vibration control in Poland. During the talks with the State Board of Environment Protection the Committee on Acoustics, represented by Professor Andrzej Rakowski, then the President of the Committee, Professor Zbigniew Engel and Professor Jerzy Sadowski, used both reports as strong arguments for legislative actions concerned with noise abatement. Those arguments, presented subsequently to the Environment Protection Committee of the Sejm, the lower house of Polish Parliament, resulted in enactment of the *Environment Protection Law* with a separate chapter devoted to the noise control and the noise hazard prevention. It should be noted that The Committee on Acoustics has effectively cooperated in the field of noise control with the Central Institute for Labour Protection – National Research Institute (CIOP-PIB).

The Committee on Acoustics was an organizer or a co-organizer of numerous conferences and congresses. Some of them are listed below.

- International Conference *Measurement of Reverberation Phenomena in Halls*, Warszawa, 1967, organized jointly with the International Commission for Acoustics, ICA,
- *Second Congress of the Federation of the Acoustical Societies of Europe* (FASE), Warszawa, 1978,
- Eighth *Inter-Noise* Congress, Warszawa, 1979, organized jointly with the International Institute of Noise Control Engineering, I-INCE,
- International Conference *Musical Psychoacoustics*, Jabłonna, 1982,
- International Conferences *Noise Control*, organized continuously since 1964; the 16th *Noise Control* conference was held in Ryn in 2013,
- International conference *Prospects in Modern Acoustics; Education, and Developments*, Gdańsk, 1987, (Symposium of the International Commission for Acoustics, ICA),
- *Sixteenth International Congress on Sound and Vibration*, Kraków 2009, organized jointly with the Polish Acoustical Society, the Silesian University of Technology, the AGH University of Science and Technology, under the auspices of the International Institute of Acoustics and Vibration, IIAV.

Since 1954, the Committee on Acoustics has organized, jointly with the Polish Acoustical Society, annual *Open Seminars on Acoustics (OSA)*. The 60th *OSA* was held in Rzeszów, in 2013.

The following symposia, conferences and congresses were organized under the auspices of the Committee on Acoustics, most of them jointly with the Polish Acoustical Society:

- Symposia *Colloque Ultrasonore Franco-Polonaise*; the first one took place in Paris, in 1978 and the following were organized alternately in Jabłonna and in Paris, in 1982, 1984, 1987 and 1989,
- Annual *Winter School of Molecular and Quantum Acoustics* organized since 1972 in Beskidy Mountains by the Silesian University of Technology. In 2009 the conference's name was changed to *Winter School of Wave and Quantum Acoustics*. In 2014 the 43rd conference was held,
- Annual *Schools on Noise and Vibration Hazard Control* organized since 1973 by the Silesian University of Technology,
- International *Spring Schools on Acousto-Optics and Applications* organized by the University of Gdańsk, as tri-annual meetings, since 1980. The 12th School, organized in cooperation with the Vilnius University in 2014, was held for the first time abroad, in Druskininkai (Lithuania),
- *Symposia on Hydroacoustics (SHA)* organized since 1984, jointly by the Gdańsk University of Technology and the Polish Naval Academy, Gdynia. The annual SHA symposia have opened a wide international cooperation in the field of hydroacoustics. The 14th *SHA*, held in 1997, was organized jointly with the Federation of Acoustical Societies of Europe, FASE, as the *13th FASE Symposium*. The 16th *SHA*, in 1999, was a joint meeting with the *Second International Symposium of EAA* (European Acoustics Association). The 18th *SHA*, in 2001, was a joint meeting with the *3rd Symposium of ICA/EAA*. The 19th *SHA* in 2002 was organized jointly with the *4th International Symposium on Hydroacoustics* and the *6th European Conference of Underwater Acoustics, ECUA*. In 2014, the 31st *SHA* took place in Świnoujście,
- *International Symposia on Sound Engineering and Tonmeistering, ISSET*, organized by the Polish Section of the Audio Engineering Society. The 15th ISSET was held in Kraków, in 2013,
- *Symposium on Subjective and Objective Evaluation of Sound* organized in 1990, in Czerniejewo, by the Institute of Acoustics of the Adam Mickiewicz University,
- International conference *Fechner Day'97 – 13th Annual Meeting of the International Society for Psychophysics*, Poznań, 1997,
- Conferences on *Energy Methods in Vibroacoustics* (since 1994) and *Structural Acoustics* (since 1996), *Structures-Waves-Biomedical Engineering-Human Health* (since 1998), organized by the AGH University of Mining and Metallurgy (now AGH University of Science and Technology), in Kraków,
- *International Congress on Ultrasonics* organized by the Institute of Experimental Physics, University of Gdańsk in 2011,
- In September 2014 the 7th *Forum Acusticum EAA Congress* will be held in Kraków. The Congress is organized by the Polish Acoustical Society, on behalf of the European Acoustics Association, in cooperation with the Committee on Acoustics of the Polish Academy of Sciences, and AGH University of Science and Technology.

The Committee on Acoustics acts as a National Committee of the Polish Academy of Sciences for cooperation with the International Commission for Acoustics (ICA) and with the International Institute of Noise Control Engineering (I-INCE). The role of ICA for acousticians associated in national organizations was discussed in a review article by DAIGLE *et al.* (2007). Both the Committee on Acoustics of the Polish Academy of Sciences and the Polish Acoustical Society are members of the ICA. The following members of the Committee on Acoustics were members of the ICA Board: Professors Leszek Filipczyński (1975–1981), Antoni Śliwiński (1981–1987, 1996–2007), Eugeniusz Kozaczka (2007–2013), and Grażyna Grelowska (current term of 2013–2016). Professor Ignacy Malecki served as a Chairman of the ICA Board in the years 1966–1972.

The cooperation of the Committee on Acoustics with the International Institute of Noise Control Engineering has lasted from the foundation of the Institute in 1974. Professor Zbigniew Engel served as the President of I-INCE for many years.

The members of the Committee on Acoustics take part in various kind of international activities and cooperation in acoustics. They hold memberships in scientific and technical organizations, participate in international expert groups and in scientific journal editorial boards. A more detailed overview of the Committee's activity during the past years may be found in ŚLIWIŃSKI *et al.* (2010).

During a half of a century of its existence the Committee on Acoustics has been very actively involved in a broad range of scientific, technological, and organizational problems. Its extensive activity in various fields has greatly contributed to the development of acoustics and cooperation between its various specializations, and has built bridges between acoustics and other disciplines of science. The current President of I-INCE is professor Czesław Cempel.

References

1. DAIGLE G., SCHMID CH., NELSON PH. (2007), *The International Commission for Acoustics*, Acoustics Today, **3**, 3, 25–29.
2. ENGEL Z., SADOWSKI J. (1985), *Noise and vibrations hazard in Poland (a report summary)* [in Polish], Arch. Akustyki, 20, 89–106.
3. ENGEL Z., SADOWSKI J. [Eds.] (2005), *Environment noise protection in Poland in the light of European regulations* [in Polish], Committee on Acoustics Polish Academy of Sciences – CIOP-PIB, Warszawa.
4. RANACHOWSKI J. [Ed.] (1993, 1995, 1999), *Acoustics in technology, medicine and culture* [in Polish], Committee on Acoustics Polish Academy of Sciences – Institute of Fundamental Technological Research Polish Academy of Sciences, Warszawa.
5. RANACHOWSKI P., REJMUND F., ETIENNE J. (2013), *A look at the life and activity of a prominent Polish acoustician on the 20th century Professor Ignacy Malecki (1912–2004) on the occasion of the centenary anniversary of his birth*, Arch. Acoust., **38**, 1, 3–12.
6. ŚLIWIŃSKI A., ENGEL Z., ZAWIESKA W. (2010), *Polish Acoustics, the yesterday and the present day* [in Polish: *Akustyka polska wczoraj i dziś*], Committee on Acoustics Polish Academy of Sciences – Central Institute for Labour Protection – National Research Institute, Warszawa.