

Polish acoustics based on bibliometric analysis for 2017–2021

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Abstract

The publications on acoustic conditions at workplaces have been indexed for many years in various databases. The most well known are Web of Science Core Collection (WoS CC) and Scopus – both indexing publications from all over the world. This article presents bibliometric data encompassing years 2017-2021 in regard of every type of indexed documents (e.g. article, conference). The data search was conducted in October 2022. The oldest indexed document, affiliated by Polish authors on acoustic comes from 1987 and 1977, respectively in WoS CC and in Scopus. Same dates apply when it comes to acoustic conditions at workplaces (acoustic AND workplace). In addition, search results were prepared in SciVal, in regard of the same period of time (2017-2021). This tool uses data indexed in Scopus.

Keywords: acoustic, noise, workplace, bibliometric analysis, Web of Science CC, Scopus, SciVal, Poland

1. Introduction

According to the bibliological research done in Web of Science Core Collection (WoS CC) and Scopus databases, the oldest document ever indexed in Scopus for acoustic's search comes from 1852 [Leared A. and it's on the mechanism of the acoustic phenomena of the circulation of the blood, with an exposition of a new element in the causation of the first sound of the heart (The Dublin Quarterly Journal of Medical Science. 1852;13(2):338-362. doi:10.1007/BF02943893)]. The total number of all results for query (Title-Abs-Key_Scopus): acoustic is 652.619 publications, with Poland as an affiliation present in 8.490 cases. The oldest of those is dated 1957 (Miodoński J. Columellization and mobilization of the ossicles of the middle ear. Acta Oto-Laryngologica.1957;47(1):64-72. doi:10.3109/00016485709130316), and has been cited once in 2022. The oldest publication indexed in WoS CC [1] for acoustic's search is from 1900 and it's an abstract of a report on the acoustic principles affecting the conduction of sound by the bones of the head, by: Gray AA, Volume 1900, Page 1012-1014, Part 1, Published JAN-JUN 1900. The total number of all results for query (Topic_WoS CC): acoustic is 344.303 publications, and 5086 of them is affiliated to Poland. The oldest text in that pool comes from 1970 and provides an analysis of Nasal vowels in contemporary standard Polish acoustic-phonetics (Jassem W, Volume 24, Issue 4, Page 401-404. doi: 10.1016/0024-3841(70)90093-8).

For the purposes of this chapter, an analysis related to publications affiliated by Polish authors regarding the issues of acoustics also related to the work environment was prepared.

2. Research method

Two bibliographic and abstract databases were used to conduct the searches: Scopus [2] (Elsevier) and Web of Science (Clarivate Analytics).

Scopus is an interdisciplinary bibliographic and abstracting database for the mathematical and natural sciences, technology, medicine and the humanities. It indexes more than 25.000 journal titles, including about 19.000 peer-reviewed journals (out of which about 4.000 are open access), as well as book series, conference reports, etc. It contains more than 81 million bibliographic records, data from more than 7.000 publishers. The main coverage in Scopus pertains primarily to times past 1970, with some pre-1970 records going back as far as 1788.

The Scopus' indexes contain more than 1.5 billion citations. In addition, the database contains more than 17 million profiles of scientists, 80.000 profiles of institutions, including CIOP-PIB (Affiliation ID: 60031598). The database provides information on publications with abstracts, appendix bibliography. The SciVal tool – used to analyse data contained in the Scopus database – is correlated with the Scopus database. This tool allows users to perform comparisons and analysis within institutions, countries, authors, among others. Scopus is updated on the daily basis.

In connection to the article's main title, searches were performed in various variations including the use of such search fields, as: Article title, Abstract, Keywords: e.g. Acoustic And Affiliation country: Poland And Published years: 2017-2021.

Web of Science CC – database is provided on the Web of Science platform (until December 2013 it was offered as Web of Knowledge). The publication records stored therein contain basic bibliographic information, article abstracts, and citation information. In addition, it is possible to reach journal information in the Journal Citation Reports (JCR) database from each of the abovementioned records. The information resource in WoS is an ever-increasing number of records, currently surpassing 170 million (and more than 1.9 billion citations). This tool enables bibliometric analysis based on data indexed in the Web of Science Core Collection (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Emerging Sources Citation Index databases) and Journal Citation Reports. Number of indexed scientific journals is lesser in comparison to Scopus, however, it's upgraded daily even so. In connection to the article's main title, searches were performed

in various variations including the use of such search fields, as: Topic: e.g. Acoustic, Adress (Affiliation country): Poland And Published years: 2017-2021.

3. Acoustic in Scopus 2017-2021

For query: acoustic (Article title – Abstract – Keywords) AND Poland (Affiliation country) AND 2017-2021 (Published years) there are 2295 results. Within them different types of indexed documents can be identified. The articles predominated the search results (1491), trailed by 693 conference papers, 53 reviews, 45 book chapters and 13 others. Table 1 presents information for each year separately: number of publications, number of citations, the most cited publications from that year, and who cited them (country).

Table 1. Results for query in Scopus: Acoustic (Article title – Abstract – Keywords) AND Poland (Affiliation country), published in 2017-2021, for each year separately: the most frequently cited publication and no. of citations, who cited that publication (country and no. of citations from county) the most often (No. of citations, date of search: 15.10.2022)

Year	No. of publications	No. of citations	Most cited for the year no. of citations*	Who cited mostly_country_ No. of citations
2021	466	1463	Kuntoğlu M, Aslan A, Pimenov DY, et al. A review of indirect tool condition monitoring systems and decision-making methods in turning: Critical analysis and trends. <i>Sensors (Switzerland)</i> . 2021 ;21(1):1-33. doi:10.3390/s21010108 cited 79	<ul style="list-style-type: none"> • Turkey = 19 • China = 18 • Poland = 16
2020	470	6016	Aghanim N, Akrami Y, Ashdown M, et al. Planck 2018 results: VI. Cosmological parameters. <i>Astronomy and Astrophysics</i> . 2020 ;641. doi:10.1051/0004-6361/201833910 cited 2742	<ul style="list-style-type: none"> • United States = 872 • China = 421 • United Kingdom = 402
2019	494	2996	Głowacz A. Fault diagnosis of single-phase induction motor based on acoustic signals. <i>Mechanical Systems and Signal Processing</i> . 2019 ;117:65-80. doi:10.1016/j.ymssp.2018.07.044 cited 210	<ul style="list-style-type: none"> • China = 116 • India = 29 • United States = 16
2018	447	3806	Gągól M, Przyjazny A, Boczkaj G. Wastewater treatment by means of advanced oxidation processes based on cavitation – A review. <i>Chemical Engineering Journal</i> . 2018 ;338:599-627. doi:10.1016/j.cej.2018.01.049 cited 418	<ul style="list-style-type: none"> • China = 186 • India = 69 • Poland = 42
2017	388	3347	Kirby MA, Pelivanov I, Song S, et al. Optical coherence elastography in ophthalmology. <i>Journal of Biomedical Optics</i> . 2017 ;22(12). doi:10.1117/1.JBO.22.12.121720 cited 104	<ul style="list-style-type: none"> • United States = 66 • China = 21 • Poland = 11

The most cited publication (2742 times) for the analysed period (2017-2021) is: Aghanim N, Akrami Y, Ashdown M, et al. Planck 2018 results: VI. Cosmological parameters. *Astronomy and Astrophysics*. 2020;641. doi:10.1051/0004-6361/201833910. The search results provide information about affiliations of authors so the user is able to discover which institution/s they represent. Figure 1 presents Top_10 institutions and number of publications per institution.

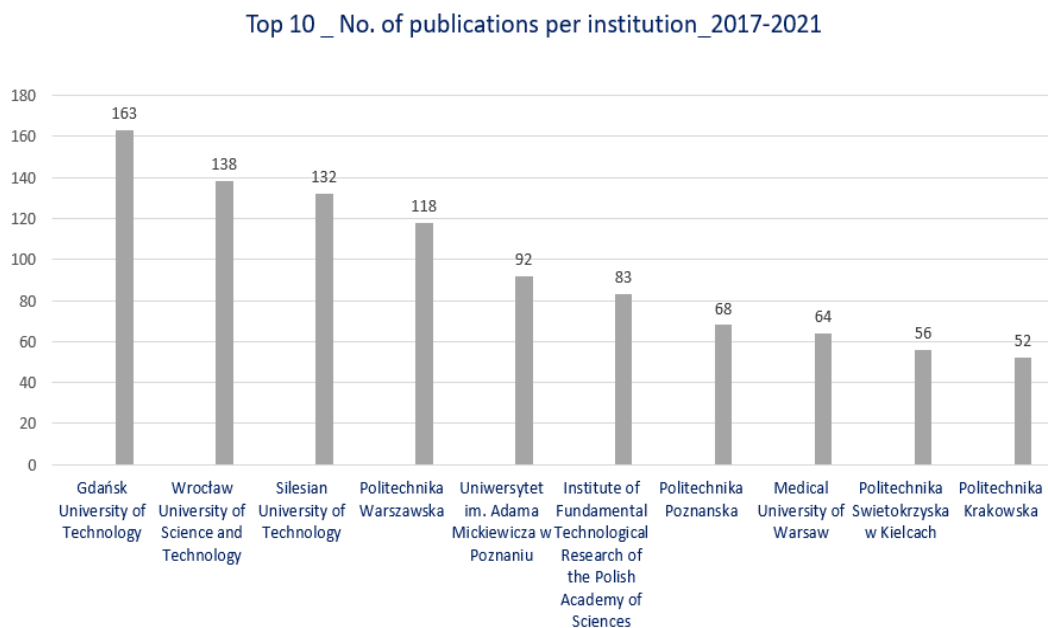


Figure 1. Top 10 Institutions_afiiliations, number of publications per institution for 2017-2021, results for query in Scopus: TITLE-ABS-KEY (acoustic) AND Affiliation country (Poland)

3.1. Acoustic AND workplace

Work environment is one of the aspects of research and analysis when it comes to publications indexed in Scopus database. In this instance another query was used: Acoustic AND workplace (Article title, Abstract, Keywords) for all country affiliations.

The results for that query is 271 publications (mostly articles: 140 112 conference papers, 10 reviews, 6 book chapters and others) came back as a result. The most cited publication: Le, TN, Straatman LV, Lea J, et al. Current insights in noise-induced hearing loss: A literature review of the underlying mechanism, pathophysiology, asymmetry, and management options. *Journal of Otolaryngology – Head & Neck Surgery*. 2017;46(1). doi:10.1186/s40463-017-0219-x – was cited 179 times (result for 15.10.2022).

Within the results obtained, data on institutions (Top-10), authors (Top-10) and scientific journals (Top-10) are presented. The chart below (Figure 2) presents Top 10 institutions with numbers of publications per affiliation.

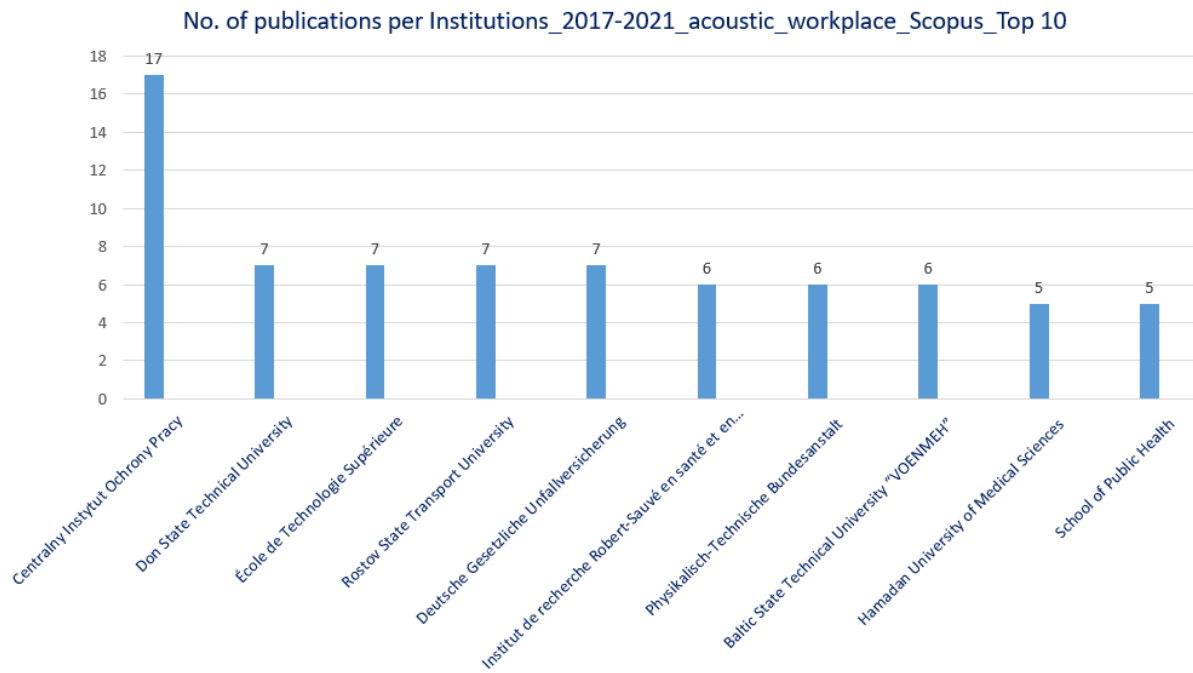


Figure 2. Institutions_afilations, number of publications per institution for 2017-21, results for query in Scopus: TITLE-ABS-KEY (acoustic AND workplace), for All Affiliation country

Another information, based on results in Scopus, concerns authors and number of publications per author (Figure 3).

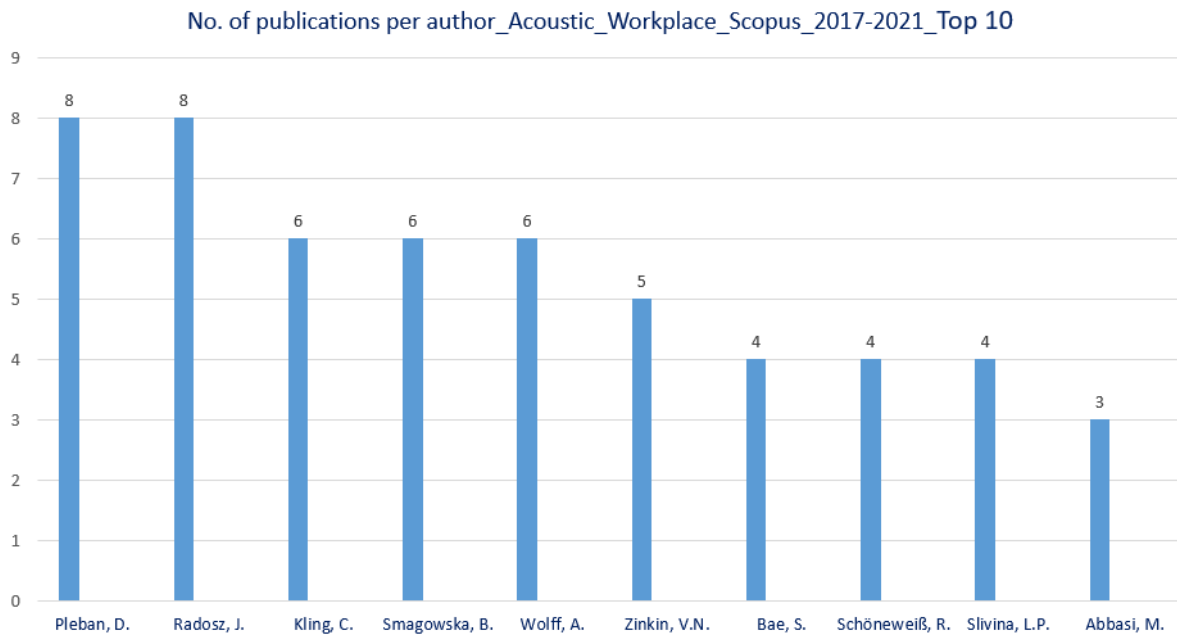


Figure 3. Authors and number of publications per author, results for query in Scopus: TITLE-ABS-KEY (acoustic AND workplace), for All Affiliation country, publication years 2017-2021

Another information, based on results in Scopus, concerns scientific journals and number of publications per journal (Figure 4).

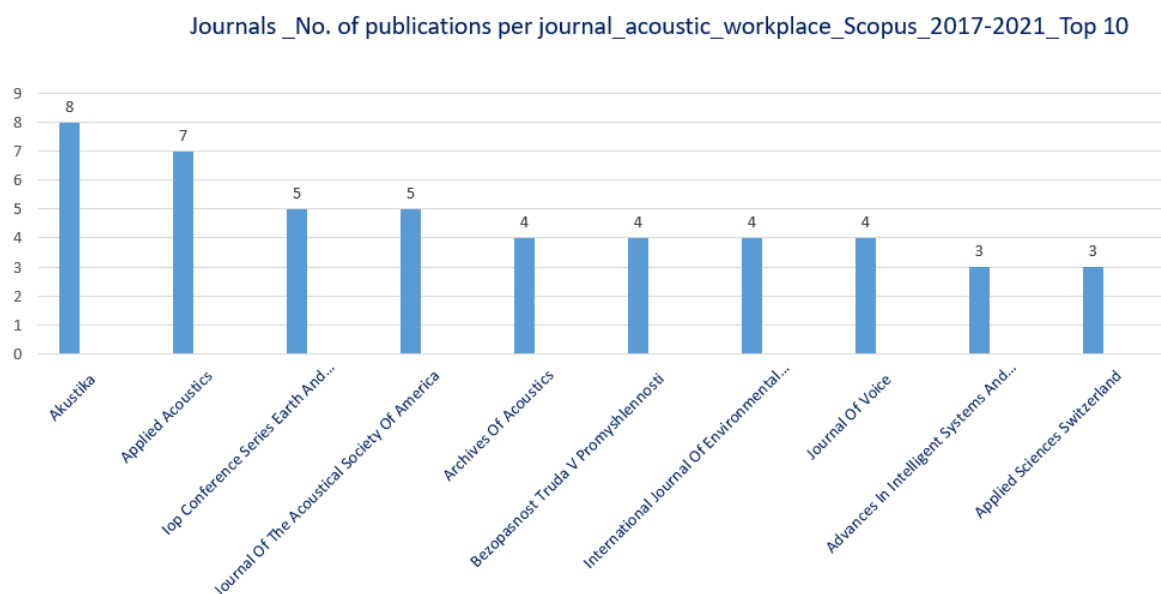


Figure 4. The scientific journals and number of publications per journal, results for query in Scopus: TITLE-ABS-KEY (acoustic AND workplace), for All Affiliation country, publication years 2017-2021

With retaining the all the previous queries in Scopus, one additional query was added: “affiliation of authors: Poland”. With this in place a search was repeated and resulted in information on 30 publications indexed. The 15 of them was cited, and got 85 citations.

The most cited publication has got 31 citations: Chen C, Yilmaz S, Pisello AL, et al. The impacts of building characteristics, social psychological and cultural factors on indoor environment quality productivity belief. *Building and Environment*. 2020;185. doi:10.1016/j.buildenv.2020.107189.

Table 2 presents 15 cited documents – Scopus is updated every day, so the actual number of citations can be different each another search (result for: 15.10.2022).

Table 2. Results for query in Scopus: Acoustic AND Workplace (Article title – Abstract – Keywords), published 2017-2021, the most frequently cited publications (Top_15), Open Access or not (Open Access = 1, No OA = 0)

No.	Publication indexed in Scopus_Acoustic AND Workplace_2017-2021_Poland	No. of citations	Open Access = 1 No OA = 0
1.	The impacts of building characteristics, social psychological and cultural factors on indoor environment quality productivity belief In: Chen C-F, Yilmaz S, Pisello AL, et al. <i>Building and Environment</i> . 2020;185:107189.	31	1
2.	Active structural acoustic control of an active casing placed in a corner In: Chraponska A, Wrona S, Rzepecki J, et al. <i>Applied Sciences (Switzerland)</i> . 2019;9(6):1059.	12	1

No.	Publication indexed in Scopus <u>Acoustic AND Workplace</u> <u>2017-2021</u> Poland	No. of citations	Open Access = 1 No OA = 0
3.	Selection of earmuffs and other personal protective equipment used in combination In: Kozłowski E, Młynski R. International Journal of Environmental Research and Public Health. 2019;16(9):1477.	7	1
4.	The Hearing Threshold of Employees Exposed to Noise Generated by the Low-Frequency Ultrasonic Welding Devices In: Dudarewicz A, Zaborowski K, Rutkowska-Kaczmarek P, et al. Archives of Acoustics. 2017;42(2):199-205.	6	1
5.	Acoustic conditions in open plan office – application of technical measures in a typical room [Warunki akustyczne w pomieszczeniach biurowych open space – zastosowanie środków technicznych w typowym pomieszczeniu] In: Mikulski W. Medycyna Pracy. 2018;69(2):153-165.	5	1
6.	Exposure to infrasonic noise in agriculture [Open Access] In: Bilski B. Annals of Agricultural and Environmental Medicine. 2017;24(1):86-89.	5	1
7.	Occupational risk assessment related to ultrasonic noise In: Pleban D, Smagowska B, Radosz J. INTER-NOISE 2018 – 47th International Congress and Exposition on Noise Control Engineering: Impact of Noise Control Engineering; 2018.	4	0
8.	Reducing the harmful effects of noise on the human environment. Sound insulation of industrial skeleton enclosures in the 10-40 kHz frequency range In: Mikulski W. Journal of Environmental Health Science and Engineering. 2020;18(2):1451-1463.	3	1
9.	Determination of ultrasonic noise exposure in the workplaces In: Pleban D, Radosz J, Smagowska B. 25th International Congress on Sound and Vibration 2018, ICSV 2018: Hiroshima Calling 4; 2018. pp. 2474-2480.	3	0
10.	Home sources of low frequency noise [Domowe źródła hałasu niskoczęstotliwościowego] In: Zagubień A, Wolniewicz K. Rocznik Ochrona Srodowiska. 2017;19:682-693.	3	0
11.	Workplaces in wind farms and in their vicinity – Recommendations for wind turbine noise reduction In: Pleban D, Radosz J, Smagowska B. 24th International Congress on Sound and Vibration, ICSV 2017; 2017.	2	1
12.	An assessment of acoustic properties of a large-capacity open-plan office room according to a 3-level rating scale – a case study [Ocena w skali trzystopniowej właściwości akustycznych biurowego pomieszczenia open space o dużej kubaturze – opis przypadku] In: Mikulski W. Medycyna pracy. 2021;72(4):375-390.	1	1

No.	Publication indexed in Scopus_Acoustic AND Workplace _2017-2021_Poland	No. of citations	Open Access = 1 No OA = 0
13.	Noise in the mining work environment – Causes, effects and threats In: Mocek P. IOP Conference Series: Earth and Environmental Science. 2020;609(1):012075.	1	1
14.	IoT-based system for monitoring and limiting exposure to noise, vibration and other harmful factors in the working environment In: Morzynski L. INTER-NOISE 2019 MADRID – 48th International Congress and Exhibition on Noise Control Engineering; 2019.	1	0
15.	Measurement of Earmuffs Attenuation at High Audible Frequencies In: Kozłowski E, Młyński R. Archives of Acoustics. 2017;42(2):249-254.	1	1

The contents of Table 2 show that the most of the cited documents are Open Access. This information is an argument for publishing in Open Access model for higher citation rates, but also for an easier access (sic!) to the full text of article.

Another information obtained in the results – presents authors of publications and the number of articles attributed to them (Figure 5):

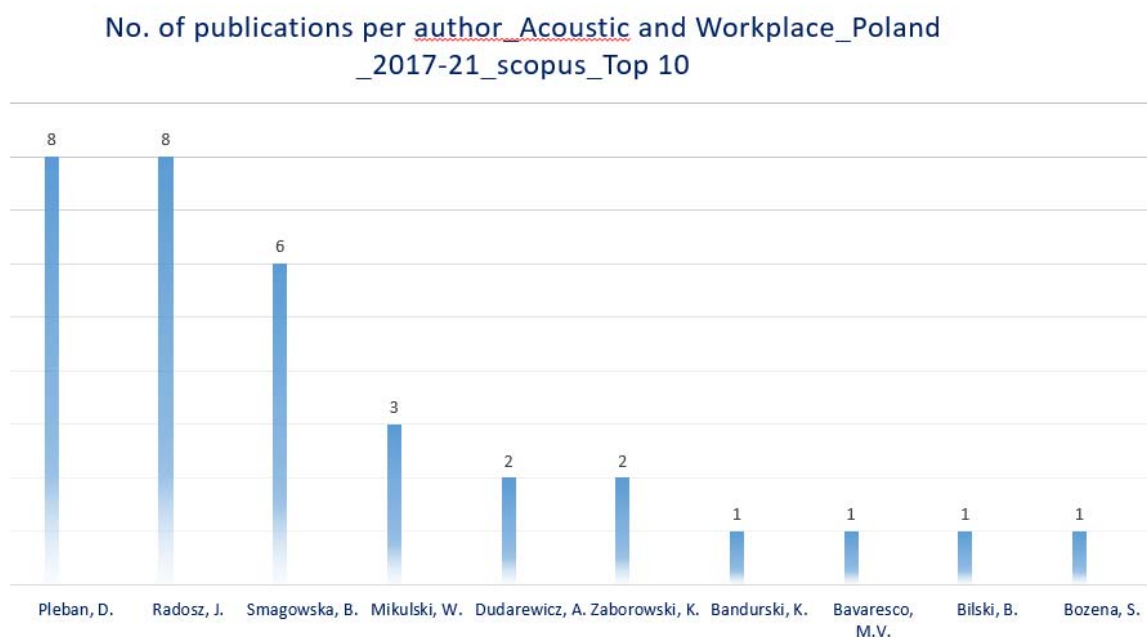


Figure 5. Top_ authors, number of publications per author for 2017-21, results for query in Scopus: TITLE-ABS-KEY (acoustic AND workplace) AND Affiliation country (Poland)

As in the case of authors – the results received information on institutions (Affiliation) and the number of documents assigned to them, as shown in the figure below (Figure 6).

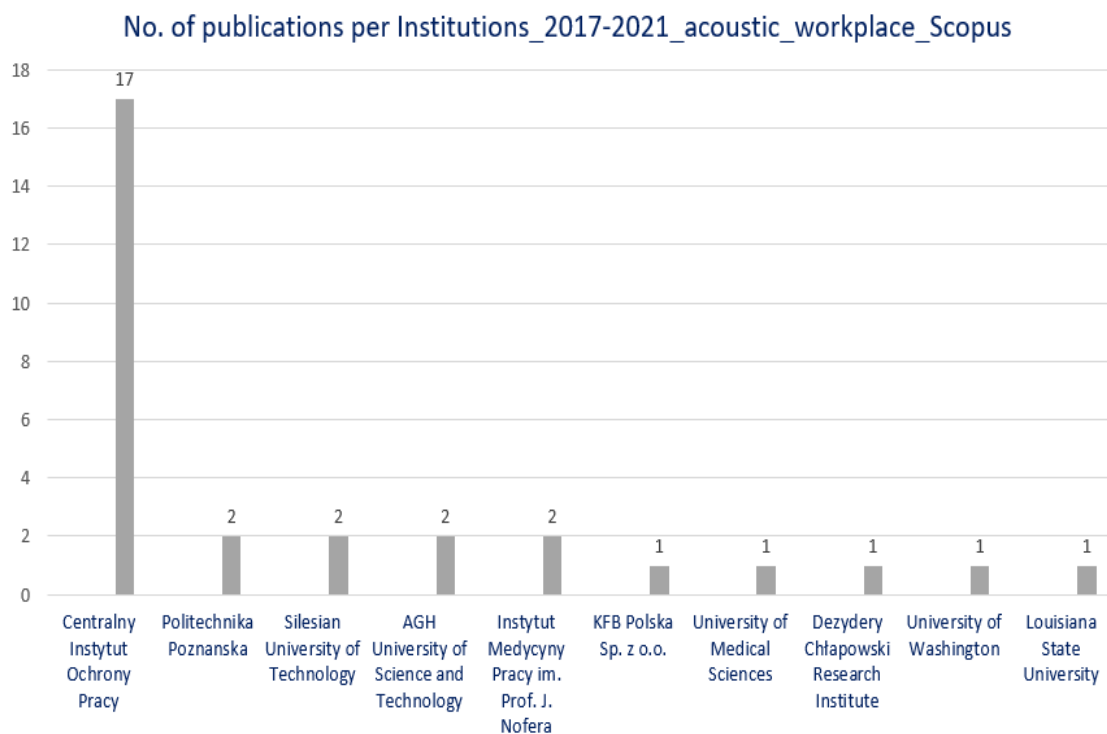


Figure 6. All institutions_affiliations, number of publications per institution for 2017-2021, results for query in Scopus: TITLE-ABS-KEY (acoustic AND workplace) AND Affiliation country (Poland)

4. Acoustic in Web of Science_2017-2021

The way of conducting search for documents in the WoS CC database mirrored one used previously in regard of Scopus. The same questions were used.

For query: Acoustic (Topic) And Poland (Adress) 1.598 results were obtained. The lower number of documents in results is due to fewer indexed scientific journals, books and other documents. The articles dominated among the indexed documents are articles (1258), followed by 310 proceeding papers, 48 review articles, 7 book chapters and 5 editorial materials. Just like in the Scopus search, also in here publications on every aspects of acoustic can be found.

The most cited publication for 2017-2021 (the same publication in WoS CC) is: Aghanim, N, Akrami Y, Ashdown M, et al. Planck 2018 results: VI. Cosmological parameters. *Astronomy and Astrophysics*. 2020;641. doi:10.1051/0004-6361/201833910 – and was cited 2926 times. This score is higher than in Scopus.

Table 3 presents general information about result in WoS CC, for query: Acoustic AND Poland AND 2017-2021 (result for: 15.10.2022).

Table 3. Results for query Wos CC: Acoustic (Topics) AND AND Poland (Adress), published in 2017-2021, for each year separately: most cited frequently cited publication and no. of citations, who cited that publication (country and no. of citations from county) the most often (No. of citations, date of search: 15.10.2022)

Year	No. of publications	No. of citations	Most cited for the year _no.of citations*	Who cited mostly_country_ No. of citations
2021	348	1.332	Ventilation Diagnosis of Angle Grinder Using Thermal Imaging Glowacz, A Apr 2021 21 (8) _cited 84	<ul style="list-style-type: none"> • China = 343 • Poland = 312 • United States = 103
2020	352	5.398	Planck 2018 results: VI. Cosmological parameters Aghanim, N; Akrami, Y; (...); Zonca, A Sep 11 2020 641 _cited 2926	<ul style="list-style-type: none"> • United States = 1.448 • China = 924 • Germany = 716
2019	315	2.344	Fault diagnosis of single-phase induction motor based on acoustic signals Glowacz, A Feb 15 2019 117, pp.65-80 _cited 184	<ul style="list-style-type: none"> • China = 572 • Poland = 543 • United States = 297
2018	323	2.746	Wastewater treatment by means of advanced oxidation processes based on cavitation – A review Gagol, M; Przyjazny, A and Boczkaj, G Apr 15 2018 338, pp.599-627 _cited 384	<ul style="list-style-type: none"> • China = 833 • Poland = 705 • United States = 295
2017	260	2.806	Diagnosis of the three-phase induction motor using thermal imaging Glowacz, A and Glowacz, Z Mar 2017 81, pp.7-16 _cited 146	<ul style="list-style-type: none"> • Poland = 705 • China = 517 • United States = 368

In search results the information about affiliation of authors, which institutions represent mostly, can be accessed. Figure 7 presents Top_10 institutions and number of publications, regarding each of them.

Select All	Field:	Record Count	% of 1598
<input checked="" type="checkbox"/>	Affiliations		
<input checked="" type="checkbox"/>	POLISH ACADEMY OF SCIENCES	193	12.078%
<input checked="" type="checkbox"/>	AGH UNIVERSITY OF SCIENCE TECHNOLOGY	179	11.202%
<input checked="" type="checkbox"/>	FAHRENHEIT UNIVERSITIES	122	7.635%
<input checked="" type="checkbox"/>	GDANSK UNIVERSITY OF TECHNOLOGY	105	6.571%
<input checked="" type="checkbox"/>	WROCLAW UNIVERSITY OF SCIENCE TECHNOLOGY	96	6.008%
<input checked="" type="checkbox"/>	SILESIA UNIVERSITY OF TECHNOLOGY	89	5.569%
<input checked="" type="checkbox"/>	WARSAW UNIVERSITY OF TECHNOLOGY	73	4.568%
<input checked="" type="checkbox"/>	ADAM MICKIEWICZ UNIVERSITY	66	4.130%
<input checked="" type="checkbox"/>	INSTITUTE OF FUNDAMENTAL TECHNOLOGICAL RESEARCH OF THE POLISH ACADEMY OF SCIENCES	62	3.880%
<input checked="" type="checkbox"/>	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	48	3.004%

Figure 7. Top 10 Institutions _affiliations, number of publications per institution for 2017-21, results for query in WoS CC: TITLE-ABS-KEY (acoustic) AND Affiliation country (Poland)

4.1. Acoustic AND workplace

According to the aspect of the working environment and acoustics were made search in WoS CC. For that was used query: Acoustic AND Workplace (Topic [Article title, Abstract, Keywords]), publication years 2017-2021, for all affiliations (all countries) – that brought 112 results.

The illustration below (Figure 8) presents affiliations (country) Top_10 – with number of publications assigned to the particular affiliation.

Select All	Field:	Record Count	% of 112
<input checked="" type="checkbox"/>	Countries/Regions		
<input checked="" type="checkbox"/>	USA	25	22.321%
<input checked="" type="checkbox"/>	RUSSIA	16	14.286%
<input checked="" type="checkbox"/>	CANADA	12	10.714%
<input checked="" type="checkbox"/>	ITALY	11	9.821%
<input checked="" type="checkbox"/>	GERMANY	9	8.036%
<input checked="" type="checkbox"/>	POLAND	9	8.036%
<input checked="" type="checkbox"/>	AUSTRALIA	8	7.143%
<input checked="" type="checkbox"/>	IRAN	6	5.357%
<input checked="" type="checkbox"/>	ENGLAND	4	3.571%
<input checked="" type="checkbox"/>	FINLAND	4	3.571%

Figure 8. All institutions _affiliations, number of publications per institution for 2017-2021, results for query in WoS CC: TITLE-ABS-KEY (acoustic AND workplace), (data of search: 15.10.2022)

The very same query brings yet another information and it shows what journals authors mostly chose to publish. The illustration below (Figure 9) presents Top 10 scientific journals with the numbers of articles published in each and every one of them.

Select All	Field:	Record Count	% of 112
<input checked="" type="checkbox"/>	Publication Titles		
<input checked="" type="checkbox"/>	AKUSTIKA	8	7.143%
<input checked="" type="checkbox"/>	APPLIED ACOUSTICS	6	5.357%
<input checked="" type="checkbox"/>	BUILDING AND ENVIRONMENT	4	3.571%
<input checked="" type="checkbox"/>	ADVANCES IN INTELLIGENT SYSTEMS AND COMPUTING	3	2.679%
<input checked="" type="checkbox"/>	APPLIED SCIENCES BASEL	3	2.679%
<input checked="" type="checkbox"/>	JOURNAL OF CORPORATE REAL ESTATE	3	2.679%
<input checked="" type="checkbox"/>	JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA	3	2.679%
<input checked="" type="checkbox"/>	BUILDING RESEARCH AND INFORMATION	2	1.786%
<input checked="" type="checkbox"/>	BUILDINGS	2	1.786%
<input checked="" type="checkbox"/>	CURRENT POLLUTION REPORTS	2	1.786%

Figure 9. The scientific journal with number of publications per journal, in results for query in WoS CC: TITLE-ABS-KEY (acoustic AND workplace), publication years 2017-2021, (data of search: 15.10.2022)

4.2. Acoustic AND workplace_Poland

Another query in WoS CC with another search field was: (Adress [Affiliation country]) Poland. When combined with previous parts in read as: Acoustic AND Workplace (Topic [Article title, Abstract, Keywords]), publication years 2017-2021, Adress (Affiliation): Poland.

Total number publications in WoS CC – as a results for query: Acoustic AND Workplace (TITLE-ABS-KEY), years of publication 2017-2021, Adress [affiliation country]: Poland – is 9, 7 of them was cited 44 times.

Most cited publication: Chen CF, Yilmaz S, Pisello AL, et al. The impacts of building characteristics, social psychological and cultural factors on indoor environment quality productivity belief. *Building and Environment*. 2020;185. doi:10.1016/j.buildenv.2020.107189 – has got 31 citations.

Another Question was about affiliations of authors. The answer is presented on a chart from WoS CC (Figure 10).

Select All	Field:	Record Count	% of 9
<input checked="" type="checkbox"/>	Affiliations		
<input checked="" type="checkbox"/>	CENTRAL INSTITUTE FOR LABOUR PROTECTION NATIONAL RESEARCH INSTITUTE	2	22.222%
<input checked="" type="checkbox"/>	POZNAN UNIVERSITY OF TECHNOLOGY	2	22.222%
<input checked="" type="checkbox"/>	BYDGOSZCZ UNIVERSITY OF SCIENCE TECHNOLOGY	1	11.111%
<input checked="" type="checkbox"/>	KOSZALIN UNIVERSITY OF TECHNOLOGY	1	11.111%
<input checked="" type="checkbox"/>	LAWRENCE BERKELEY NATIONAL LABORATORY	1	11.111%
<input checked="" type="checkbox"/>	LOUISIANA STATE UNIVERSITY	1	11.111%
<input checked="" type="checkbox"/>	LOUISIANA STATE UNIVERSITY SYSTEM	1	11.111%
<input checked="" type="checkbox"/>	NATIONAL TAIWAN UNIVERSITY	1	11.111%
<input checked="" type="checkbox"/>	POZNAN UNIVERSITY OF MEDICAL SCIENCES	1	11.111%
<input checked="" type="checkbox"/>	SILESIA UNIVERSITY OF TECHNOLOGY	1	11.111%

Figure 10. All institutions_afilations, number of publications per institution for 2017-2021, results for query in WoS CC: TITLE-ABS-KEY (acoustic AND workplace) AND Affiliation country (Poland)

As a result for the same query, Table 4 presents 6 cited documents – WoS CC is updated every day, so the actual number of citations can be different in each another search (result for: 15.10.2022).

Table 4. Results for query in WoS CC: Acoustic AND Workplace (Topic) and Poland (Adress), published 2017-2021, the most frequently cited publications (Top_6), Open Access or not (Open Access = 1, No OA = 0) (No. of citations, date of search: 15.10.2022)

No.	Publication indexed in WoS CC _Acoustic AND Workplace_2017-21_Poland	No. of citations	Open Access = 1 No OA = 0
1.	The impacts of building characteristics, social psychological and cultural factors on indoor environment quality productivity belief In: Chen CF, Yilmaz S, Pisello AL, et al. Building and Environment. 2020;185. doi:10.1016/j.buildenv.2020.107189	31	1
2.	Active structural acoustic control of an active casing placed in a corner In: Chraponska A, Wrona S, Rzepecki J, et al. Applied Sciences (Switzerland). 2019;9(6):1059.	7	1
3.	Exposure to infrasonic noise in agriculture In: Bilski B. Annals of Agricultural and Environmental Medicine. 2017;24(1):86-89.	4	1
4.	Home sources of low frequency noise [Domowe źródła hałasu niskoczęstotliwościowego] In: Zagubień A, Wolniewicz K. Rocznik Ochrona Srodowiska. 2017;19:682-693.	3	0
5.	Measurement of Earmuffs Attenuation at High Audible Frequencies In: Kozłowski E, Młyński R. Archives of Acoustics. 2017;42(2):249-254.	2	1
6.	An assessment of acoustic properties of a large-capacity open-plan office room according to a 3-level rating scale – a case study [Ocena w skali trzystopniowej właściwości akustycznych biurowego pomieszczenia open space o dużej kubaturze – opis przypadku] In: Mikulski W. Medycyna pracy. 2021;72(4): 375-390.	1	1

Affiliation of Poland means that even one author of publication has Polish institutional address. Another information obtained in the results (9 records) presents the journals (Publication Titles in WoS CC) in which the articles (with numbers, articles per journal) were published (Figure 11):

Select All	Field:	Record Count	% of 9
<input checked="" type="checkbox"/>	Publication Titles		
<input checked="" type="checkbox"/>	APPLIED SCIENCES BASEL	2	22.222%
<input checked="" type="checkbox"/>	ANNALS OF AGRICULTURAL AND ENVIRONMENTAL MEDICINE	1	11.111%
<input checked="" type="checkbox"/>	ARCHIVES OF ACOUSTICS	1	11.111%
<input checked="" type="checkbox"/>	BUILDING AND ENVIRONMENT	1	11.111%
<input checked="" type="checkbox"/>	E MENTOR	1	11.111%
<input checked="" type="checkbox"/>	MEDYCINA PRACY	1	11.111%
<input checked="" type="checkbox"/>	OCCUPATIONAL SAFETY AND HYGIENE VI	1	11.111%
<input checked="" type="checkbox"/>	ROCZNIK OCHRONA SRODOWISKA	1	11.111%

Figure 11. All journals – in results for query in WoS CC: TITLE-ABS-KEY (acoustic AND workplace) AND Affiliation country (Poland), publication years 2017-2021

The Web of Science database offers a greater number of information available through the results received – including, among others: Authors, Publication Years, Document Types, Web of Science Categories, Affiliations, Publishers, Funding Agencies, Grant Numbers, Open Access, Editorial Notices, Editors, Group Authors, Research Areas, Countries/Regions, Languages, Conference Titles, Book Series Titles, Web of Science Index.

5. Another tool Scopus_SciVal: Acoustic_Poland

Another tool for searching and analysing publication data collected in Scopus is SciVal (Elsevier). SciVal tool provides access to information on achievements and work done for more than 7.500 institutions in 220 countries around the world, that have been indexed in the Scopus. SciVal enables multi-element analysis and visualization – including the scientific activities of the author, universities and research institutions. The tool allows users to create reports on the achievements of scientific institutions, comparative analysis with other units, countries, evaluation of potential collaborators and partners in the country and the world, as well as analysis of trends in the world of science.

During the data collection regarding the main theme of this article, categories named “research areas” as well as “Acoustics and Ultrasonics (Physical Sciences)” were chosen [3]. Having done that, the query was formulated: research areas: Acoustics and Ultrasonics, country Poland, years 2017-2021.

General – Overall research performance – answer was: 908 publications (23.5 % of them are OA) (Figure 12).

Overall research performance

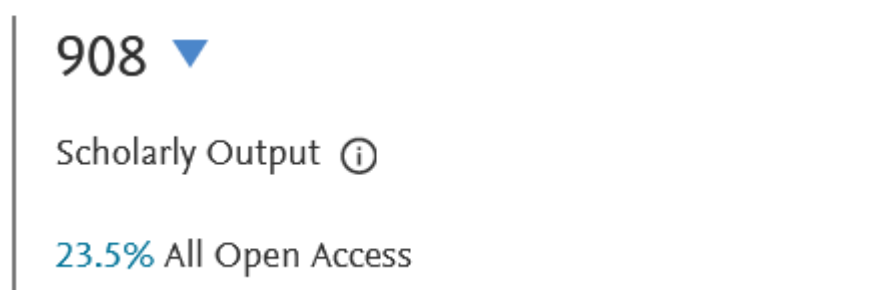


Figure 12. Part of view from SciVal – results for query: research areas: Acoustics and Ultrasonics, country: Poland, years: 2017-2021 (date of search: 15.10.2022)

Collaboration – in SciVal it indicates how many publications have international, national, or institutional co-authorship, and how many have a single authorship. That results show (Figure 13) and

confirm that international cooperation contributes to greater visibility and higher number of citations than national, or institutional.

Collaboration

[Metric guidance](#) [+ Add to Report](#)

Scholarly Output in Poland, by amount of international, national and institutional collaboration

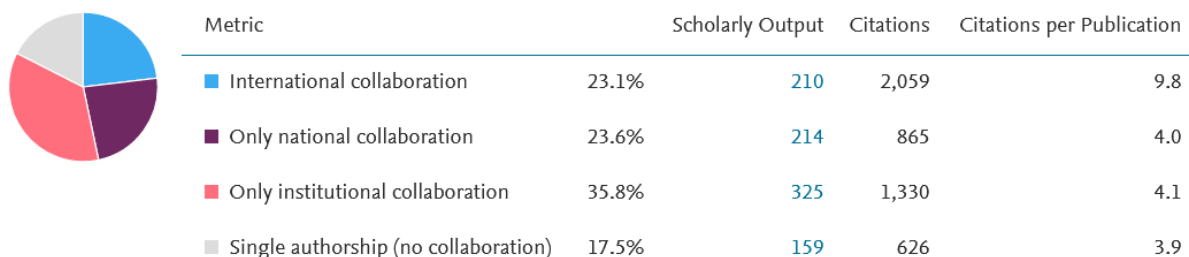


Figure 13. Part of view from SciVal – results for query: research areas: Acoustics and Ultrasonics, country: Poland, years: 2017-2021 (date of search: 15.10.2022)

Institutions – the most active Institutions in Research Area, by number of publications. Table 5 presents the top of 10 (98 of the 270) Institutions in Poland that have publications in: Acoustics and Ultrasonics, for 2017-2021. Scholarly output presents the number of publications per institution.

Table 5. Results in SciVal for query, research areas: “Acoustics and Ultrasonics”, country: Poland, years: 2017-2021, institutions (Top-10), scholarly output of the institution, no. of citations publications affiliated by institution and no. of authors (No. of citations, date of search: 15.10.2022)

No.	Institution ID In Scopus (SciVal)	Institution	Scholarly Output	Citations	Authors
1	327062	Polish Academy of Sciences	188	1040	205
2	327002	AGH University of Science and Technology	152	838	126
3	703315	Institute of Fundamental Technological Research of the Polish Academy of Sciences	113	412	74
4	327008	Gdańsk University of Technology	88	585	65
5	327040	Wrocław University of Science and Technology	68	281	69
6	327023	Silesian University of Technology	51	263	72
7	327001	Adam Mickiewicz University in Poznań	46	175	55
8	327038	Warsaw University of Technology	46	155	58
9	717784	Central Institute for Labour Protection	42	72	18
10	327006	Cracow University of Technology	30	317	25

Citation Count – total citation impact, that show how many citations have this entity’s publications received. The total number of citations received by publications in Poland is 4.880 (detailed information can be found in the Table 6 and in the chart in Figure 14.

Table 6. Results in SciVal for query, research areas: “Acoustics and Ultrasonics”, country: Poland, years: 2017-2021, no. of citations for each year

Year	No. of citations
2021	362
2020	425
2019	1270
2018	1363
2017	1460
all	4 880

Citation Count ⓘ

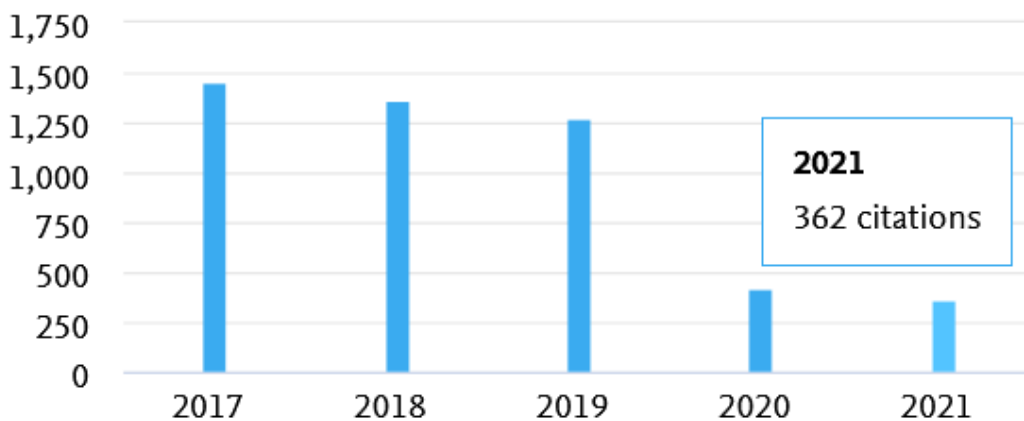


Figure 14. Part of view from SciVal – results for query: research areas: Acoustics and Ultrasonics, country: Poland, years: 2017-2021 (date of search: 15.10.2022)

Views Count – indicates the total usage impact of an entity: how many views have this entity’s publications received? That number in SciVal is generated on the basis of the usage data in Scopus. That metric is the sum of abstract views and clicks on links leading to full-texts of articles on the publisher’s website. They tot up all period numbers of Scopus views, which – in regard of the abovementioned query, is 18.357 (Figure 15), for each year: 2021 = 1.998, 2020 = 2518, 2019 = 4505, 2018 = 4675, 2017 = 4661.

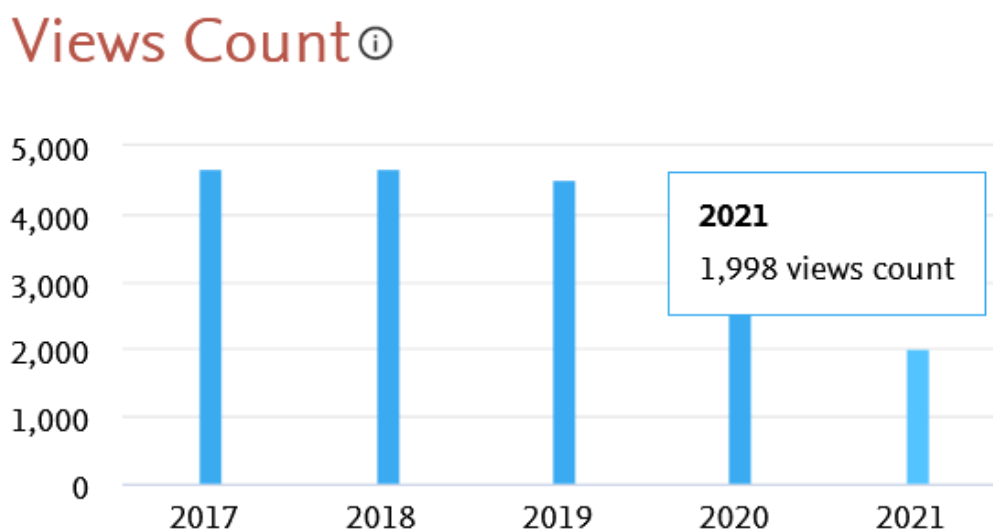


Figure 15. Part of view from SciVal – results for query: research areas: Acoustics and Ultrasonics, country: Poland, years: 2017-2021 (date of search: 15.10.2022)

Authors – this tab shows Scholarly Output in SciVal, which in turn provides data on: how many publications has a specific author indexed in Scopus; Citations tell users how many citations has that author got as well as his or her h-index value (Table 7).

Table 7. Authors_Top 10 – results for query in SciVal – research areas: Acoustics and Ultrasonics, country: Poland, years: 2017-2021 (date of search: 15.10.2022)

Name	Scholarly Output	Citations	Citations per Publication	H-index
Nowicki, Andrzej	24	72	3	24
Kostek, Bozena	23	48	2.1	16
Pawelczyk, Marek	20	107	5.4	17
Lewandowski, Marcin	17	35	2.1	13
Radosz, Jan	17	50	2.9	7
Wrona, Stanisław	17	81	4.8	11
Pleban, Dariusz	17	36	2.1	6
Kamisiński, Tadeusz	16	19	1.2	10
Pilch, Adam	16	30	1.9	10
Secomski, Wojciech	15	44	2.9	12

6. Another resources for acoustic

Apart from Scopus and Web of Science, there are several other bibliographic databases that can be used to search for publications in the field of acoustics.

One of them is **BazTech** database – established in 1998 and has indexed up to this day 550 thousand+ articles published in 752 journals (72% of them are full-text). BazTech has been launched as a bibliographic and abstract database, however as it has been registering more and more full-text articles from Polish scientific technical journals, it is opined it's been getting closer and closer in shape and form to a full-text citation database [4].

A basic search in Baztech with a query: acoustic [akustyka] gives 1180 results on October 7, 2022 (Figure 16):

The screenshot shows the BazTech database interface. At the top, there is a blue header with the logo and the text 'BAZA DANYCH O ZAWARTOŚCI POLSKICH CZASOPISM TECHNICZNYCH'. Below the header, there is a search bar and navigation options. The main content area displays search results for the query 'akustyka'. It shows 'Results found: 1180' and 'Search criteria: in any field: akustyka'. The results are sorted by 'date descending'. The first result is 'Akustyka przeszkleń architektonicznych - podstawy zasad przenoszenia dźwięku i właściwości folii akustycznych' by Ju Hengyi, published in 'Świat Szkła' in 2022. The second result is 'Wentylacja bez hałasu' by Dyszlewska Krystyna and Nurek Piotr, published in 'Rynek Instalacyjny' in 2022. On the right side, there is a 'Refine search results' section with a 'Journals' list showing counts for various journals like 'Materiały Budowlane' (99) and 'Izolacje' (96). There is also an 'Authors' section showing 'Dulak L.' with 40 results.

Figure 16. Partly view from BazTech database, result for query: akustyka, 1180 records (date of search: 7.10.2022)

Another database, international this time, is **IEEE Xplore**. That digital library – is a research database which provides access to journal articles, conference proceedings, technical standards, and related materials on computer science. The database contains material published by the Institute of Electrical and Electronics Engineers (IEEE) and other partner publishers. IEEE Xplore provides access to more than 5 million documents. The database is subscribed for a fee and provides access to the full-text of IEEE content published since 1988 with select content published since 1884 from: IEEE journals, transactions, and magazines, including early access documents, IEEE conferences, IET conferences, IEEE published standards, IEEE Standards Dictionary Online, IEEE Virtual Journals. The content in IEEE Xplore is more than:

- 260 journals,
- 4 million conference papers,
- 12.000 technical standards,
- 6.000 books.

Approximately each month 25.000 new documents are added to IEEE Xplore [5].

Below (Figure 17) is an example of the results obtained in the base for the question: acoustic, unlimited for affiliations, publication types and years of publication. Query in All fields (e.g.: author, title, journal, abstract) – brought 103.034 results.

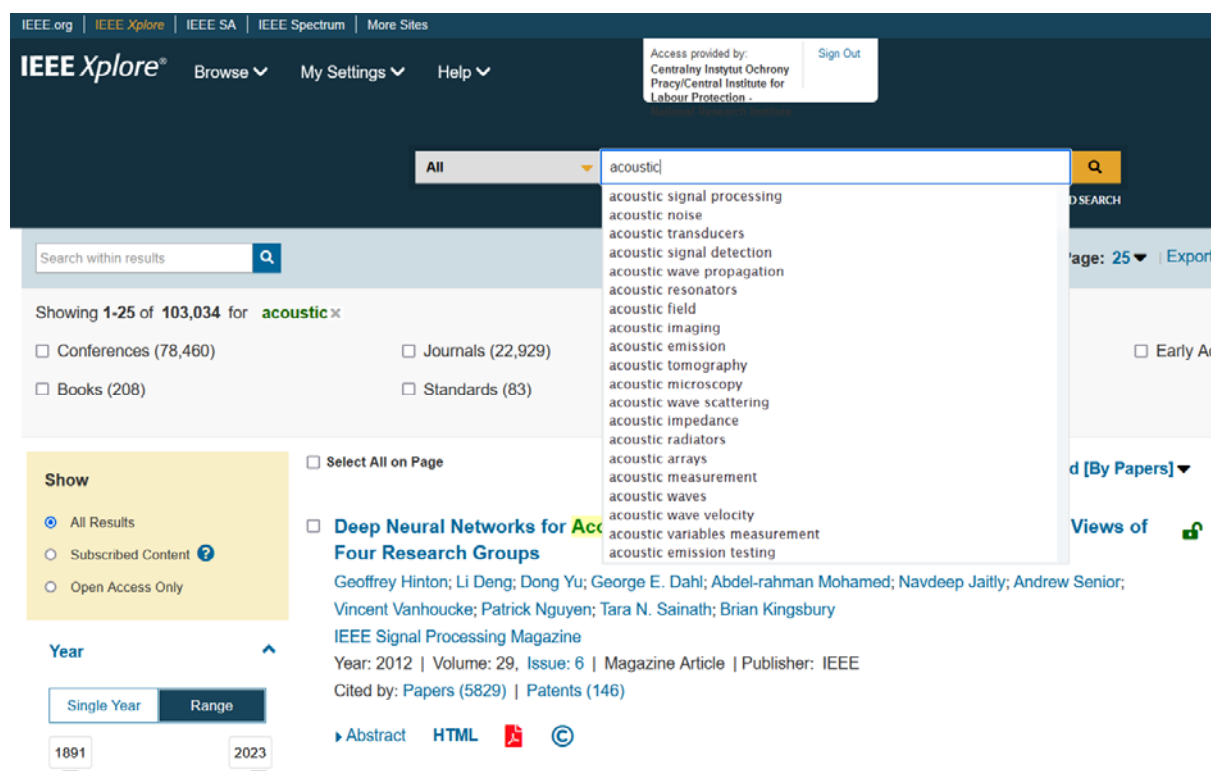


Figure 17. Partly print screen from IEEE Xplore, results for query: acoustic (date of search: 17.10.2022). As the first most cited by: Papers (5829), by Patents (146)

7. Conclusions

Topics in acoustics as well as acoustics and the working environment are represented in the WoS CC and Scopus databases, which index the publication output of researchers. The results presented do not illustrate the entire of work, but only that indexed in that databases. The keywords selected for searches may also not illustrate the entire body of work on acoustics. Conducted searches show the presence of Polish researchers in the international community. As a point of interest, it is worth mentioning that both WoS CC and Scopus provide some results also for the search term Accustic, but

for the purposes of this study, the term Acoustics was the leading one. Some general conclusions below:

- publications in the field of acoustics were included in the results of searches in Scopus and Web of Science for years 2017-2021,
- articles published by Polish authors are cited and noticed by scientists from other countries, as evidenced by which countries they are cited from (e.g. United States, China),
- the results – for Acoustic AND Workplace (Scopus) – obtained confirm that the most of cited documents are Open Access (Table 1),
- research results published in 2017 tend to have more citations than in 2021 – confirming the general rule, the need for time to get noticed and cited,
- the predominant type of document indexed in the databases – are articles (for all types of searches).

8. Acknowledgements

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