



Preface

Noise and vibrations are both integral elements of our life. According to the 6th European Working Conditions Survey¹, carried out by Eurofound in 2015, 28% of employees in the 28 (at the time, currently 27) European Union Member States had been exposed at work to noise so loud that they needed to raise their voices to be heard among each other. According to the same data source, 20% of workers in the 28 European Union Member States in 2015 had been exposed at work to vibrations from hand tools, machinery and other sources.

In Poland, on the other hand, according to Statistics Poland data, as many as 265.7 thousand persons were exposed to hazards arising from work environment in 2021 and noise was the most hazardous risk factor arising from work environment among them, affecting 182.2 thousand persons. The impact of vibrations affected 8.9 thousand persons. The most exposures were recorded in manufacturing. Industrial noise and vibration occur primarily during production processes in industrial halls, but they are also audible and felt in office spaces, the natural environment and the living environment.

Due to the prevalence of noise and vibrations (they occur to varying degrees both in the living environment and in the human work environment), it is necessary to strive not only to limit their impact on human beings, but also to ensure adequate vibroacoustic comfort. For decades, techniques and methods have been developed to reduce noise emissions and minimize its impact on humans. These long-known and widely used techniques and methods have already been discussed many times in books and papers. However, the constant progress in the field of technology makes it possible to gradually develop and introduce into practice new techniques and methods in the scope of noise and vibration measurement, assessment and control.

This monograph contains a selection of papers, presented at the Noise Control 2022 Conference². The event in question is the most important international conference on noise control, organized in Poland triennially. The 19th International Noise Control Noise Conference NOISE CONTROL 2022 took place in the Bishops' Castle in Lidzbark Warmiński between 26 and 29 June 2022. The Conference was organized by the Central Institute for Labour Protection – National Research Institute and the Committee on Acoustics of the Polish Academy of Sciences.

¹ Eurofound. Sixth European Working Conditions Survey – Overview report (2017 update). Luxembourg: Publications Office of the European Union; 2017.

² The 19th International Conference Noise Control 2022 was organised within the scope of the fifth stage of the National Programme "Improvement of safety and working conditions" partly supported in 2020-2022 – within the scope of state services – by the Ministry of Family and Social Policy. The Central Institute for Labour Protection – National Research Institute is the Programme's main coordinator.

This monograph allows the reader to get acquainted with the subject of the selected and yet the latest techniques and methods in the field of noise and vibration reduction and the improvement of vibroacoustic comfort. The techniques, solutions and results presented in this monograph, due to their interdisciplinary nature, may be interesting and useful to representatives of disciplines and scientific fields other than acoustics. I hope this monograph will be interesting and helpful in studies and work.

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