

Chronicle

42nd Winter School on Vibroacoustical HazardsSuppressions Szczyrk, Poland, March 3–7, 2014

Dear Ladies and Gentlemen,

Traditionally, the 42nd Winter School on Vibroacoustical Hazards Suppressions national conference is organized by Upper Silesian Division of the Polish Acoustical Society. The conference again is organized in Szczyrk.

As at previous year, the conference has two co-organizers, i.e. Institute of Physics – Science-Didactic Center at the Silesian University of Technology and the Committee of Acoustics of the Polish Academy of Sciences.

The conference is a forum for all environmental vibroacoustic fields. Particularly it concerns traffic noise, industry noise, vibroacoustics of machines, room acoustics, building acoustics, noise protection and similar problems. Works which are presented during the School are theoretical, experimental, measuring, technical, applied and normative.

The School lectures and other conference materials will be published in the “Materials of the XLII Winter School on Vibroacoustical Hazards Suppressions” (in Polish) edited by dr. Roman Bukowski. This publication will be intended for participants of the School and for many libraries in Poland.

Other information about the 42nd WS on VHS you can find on our website

<http://ogpta.pols.pl/szzzw>

On behalf of Organizers
Roman Bukowski
Chairman of the Conference

Abstracts

Sound attenuation of earmuffs used in combination with spectacles

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The purpose of this study was to determine whether the sound attenuation afforded by earmuffs is compromised, if the earmuffs are worn in combination with spectacles.

Measurements were performed for three different earmuffs simultaneously used with corrective spectacles, safety spectacles (equipped with narrow and wide temples) and safety goggles. It was found that wearing safety spectacles around the head can significantly interfere with the hearing protection provided by earmuffs. In the case of safety spectacles equipped with wide temples the reduction of sound attenuation of earmuffs was up to 30 dB. Corrective spectacles caused reduction of sound attenuation mainly in the high frequency ranged about 10 dB. The effect of the goggles was similar to corrective spectacles.

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Active device casings

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Noise generated by devices or machines can be a significant issue for its users. Prolonged exposure to a high-level noise, as in some industrial environments, can lead to hearing damage. In turn, domestic appliances can also be a source of noise, causing annoyance and significantly obstructing work or leisure. It is a known practice to apply passive sound insulation barriers, but their use is often impossible due to increase in size and weight of the device or machine, and its potential overheating. Alternatively, an active method can be applied that does not interfere with device structure and operation.

The aim of this paper is to present an active method of device and machinery noise reduction. It uses structural actuators to control vibration of the device casing, leading to a high acoustic isolation of the device from the environment. Such solution provides global noise reduction instead of local zones of quiet.

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Barriers to progress

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Nowadays the noise barriers are multifunctional.

They are not an interim solution, but rather the beginning of a new generation of sustainable and multifunctional

elements in the environmental protection sector, providing much more than just acoustic insulation.

Modern noise barriers are increasingly becoming high-tech function walls, and noise, solar energy, and landscape engineering are trends that are increasingly being focused upon.

Green noise barriers incorporate planting, acoustic protection, air filtering, and evaporative cooling, and discourages graffiti and vandalism.

Noise barriers that are transparent yet absorbent, can increase acoustic performance, conform to sustainability agendas, set new trends, and grow the market generally.

Designs such as the Point Fixing Support integrate acoustic protection and steel construction elements.

New technologies, such as photovoltaics, are already successfully integrated into acoustic protection modules today, as can be seen in the VOLTA system by R. Kohlhauer GmbH.

Companies such as Kohlhauer are intensively involved in the application of innovative, integrated approaches on a global basis, and are investing in new technologies and services. Future opportunities are best solved by a system based culture.

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