

# Dutch PhD student develops device to combat noise

December 1 2009

---

Johan Wesselink of the University of Twente, The Netherlands, has developed a device to actively combat noise nuisance. This invention curtails sound waves and vibrations by producing anti-noise. The researcher is confident that his device will be used in the transport and industrial sectors within a matter of years.

He defended his thesis on 26 November 2009 at the Faculty of Electrical Engineering, Mathematics and Computer Science.

The increase in air, road and rail traffic is leading to a build-up of noise nuisance. The consequences of such nuisance cannot be underestimated: in addition to possible hearing damage, people can end up suffering from lack of sleep, inability to concentrate, nervous conditions and high blood pressure. Johan Wesselink of the University of Twente has developed a device to combat noise nuisance.

The device uses microphones to capture sound and can curtail [sound waves](#) by producing anti-noise through loudspeakers. This is achieved by means of a rapid-response algorithm, implemented efficiently using specially developed hardware.

Johan Wesselink's device combats noise actively. The passive approach to combating noise has been with us for a while. It involves building noise barriers or fitting soundproofing materials, often resulting in an increase in the bulk and weight of the object being soundproofed. Johan hopes that his device will one day replace all those thick layers of

insulation. One effect will be to decrease the weight of motor vehicles, thereby reducing their fuel consumption.

TNO Research Institute is currently investigating the practical applicability of Johan's system. It is now being tested on navy frigates, canal barges, extractor fans, heavy goods vehicles and optical precision equipment. The system can also be used to reduce the noise made by MRI scanners.

Provided by University of Twente ([news](#) : [web](#))

Citation: Dutch PhD student develops device to combat noise (2009, December 1) retrieved 19 April 2024 from <https://phys.org/news/2009-12-dutch-phd-student-device-combat.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.