NXT17-011 - A Monolithic, Broadband Vibration Isolation Structures for Industrial Applications

Abstract

Fundamental research is always on the edge of what is technically possible. Driven by the search for insight into the basic principles of nature, inventions are developed which are also of use outside of the research field. While investigating the quantum properties of vibrations, a team of researchers around Prof. Markus Aspelmeyer developed a new kind of vibration isolation. Based on concepts stemming from quantum science, classical limitations are circumvented, enabling the employment of the isolation under harsh conditions. In the future, this invention could be used to make sensitive instruments more compact and stable, as well as increase their precision. At the same time, it will be possible to protect the instruments from vibrations in high vacuum or at temperatures close to absolute zero.

Keywords:
Vibration Isolation, Acoustic Isolation, Phononic Bandgap

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Status: Completed (01.12.2017 – 30.11.2018)
GrantID: 10.47379/NXT17011

Further links to the persons involved and to the project can be found under
https://www.wwtf.at/funding/programmes/ei/NXT17-011/