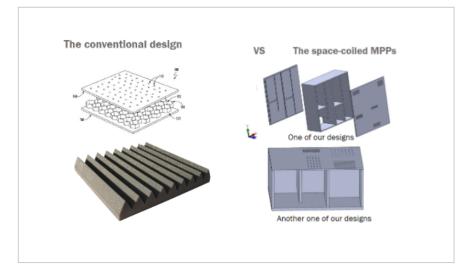
# Sound Absorbing Panels

## ID# 2021-5278





The difference between conventional designs and the space-coiled MPPs design

# **Technology Summary**

Penn State researchers developed a sound-absorbing panel that can achieve broader frequency ranges of high acoustic absorption. The panel has a specific thickness thinner than the structures of conventional porous sound absorption materials and micro-perforated panels (MPP). A unit cell within the panel collectively absorbs noise with a certain range of frequency. Different unit cells are combined to create a supercell that provides a plurality of resonant modes for broadband sound absorption.

## Application & Market Utility

A sound absorber with broadband and high absorption at a deep-subwavelength scale is applicable to many fields, such as room acoustics, automobiles, and aerospace engineering. Currently, to achieve a deep-subwavelength scale, a thin decorated membrane is used as well as a modified geometry of the conventional porous sound absorption material and microperforated panel. Those strategies have relatively narrow absorption bandwidth which hinders practical applications. This design, which consists of a combined supercell structure, can achieve broader frequency ranges from 20 Hz to 6 kHz.

# **Next Steps**

The inventors are pursuing a possible licensing opportunity.

## **TECHNOLOGY READINESS LEVEL**

4

## Seeking

Investment | Licensing |

#### **Keywords**

- Sound absorbing panel
- Space-coiled cavities
- Broadband
- Deep-subwavelength scale
- Metamaterial

## Researchers

Yun lina

Professor

**Website** 

Jun Ji

Graduate Student
Originating College

College of Engineering

## Office of Technology Management Contact

Joseph Rokita jjr152@psu.edu 814-863-6336



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