

Sonic Crystal For Noise Reduction In Hard Disk Orhigh Performance Computing Cluster

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ABSTRACT

Present invention relates to HARD DISK NOISE SUPPRESSION THROUGH AN OPEN-AIR STRUCTURE USING SONIC CRYSTAL wherein the said structure comprises of elements such as a plurality of cylindrical scatterers (3) & a plurality of surrounding walls (6, 4, 2, 5); comprising an enclosure to reduce the 5 noise from the hard disk (1) or high-performance computing cluster enclosure. Moreover the said structure also provides for the possibility of heat transfer through air flow along with noise attenuation.

KEY APPLICATION AREAS

- 1.Hard disk drive (HDD) noise reduction.
- 2.High-performance computing (HPC) clusters.
- 3.Computer workstations and servers.
- 4.Acoustic noise control.
- 5.Sonic crystal-based noise barriers.
- 6.Thermal management with airflow.

POTENTIAL USES

- 1.Suppressing HDD operating noise.
- 2.Reducing noise in HPC clusters and data centers.
- 3.Quiet computer workstations and laboratories.
- 4.Noise attenuation while maintaining cooling airflow.
- 5.Open-air acoustic enclosures for electronic systems.
- 6.Industrial and commercial computing environments.