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# 3D printed damper on the head gimbal assembly of a hard disk drive

**A process to 3D print a damping material on the head gimbal assembly of a hard disk drive to reduce vibrations.**

**IP Status:** US Patent Issued; Patent No. 11,854,583

## Applications

- Deposition of damping materials on the head gimbal assembly of hard disk drives
- Reducing vibrations in head gimbal assemblies

## Technology Overview

Researchers at the University of Minnesota have developed a process to 3D print damping materials on the head gimbal assembly (HGA) of hard disk drives. The 3D process allows for multi-material printing and precise control over the positioning and thicknesses of these materials. By depositing a material with specific mechanical properties at the desired locations on the HGA, critical frequencies can be dampened. This provides a novel and versatile solution for the design and manufacturing of HGAs with improved dynamic response.

## Phase of Development

**TRL: 4-5**
A prototype has successfully printed viscoelastic materials on head gimbal assemblies and demonstrated the enhanced performance of this solution.

## Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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## Researchers

- Michael McAlpine Kuhrmeyer Family Chair Professor, Department of Mechanical Engineering

**Technology ID**
2019-267

**Category**
Engineering & Physical Sciences/Instrumentation, Sensors & Controls
Engineering & Physical Sciences/Materials
Engineering & Physical Sciences/Processes

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