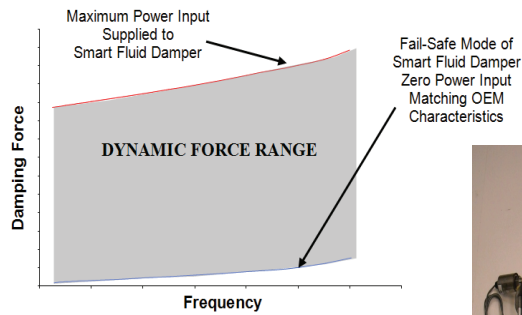


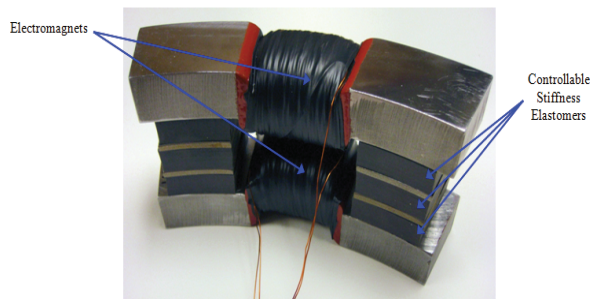
## Shock and Vibration Control

### ◆ Smart Fluid Dampers

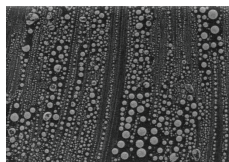


Automobiles  
Heavy Wheeled Vehicles  
Tracked Vehicles  
Bridges  
Buildings  
Helicopter Rotor Blades  
Aircraft Landing Systems

### ◆ Controllable Elastomeric Mounts



Automotive Engines  
Ship Engines  
Sensitive Equipment  
Missile Launch Systems  
Bridges  
Buildings



## Controllable Liquid Spring Dampers

### ◆ Liquid Spring and Damper System

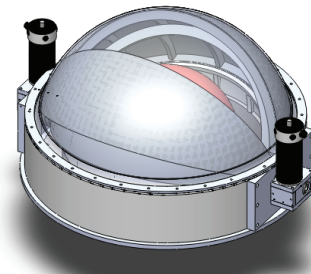
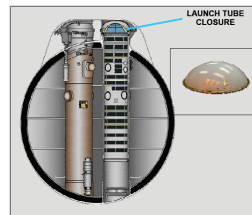


Reduced volume and weight compared to a traditional coil spring-damper system.

ATVs  
UTVs  
Off-Road Vehicles

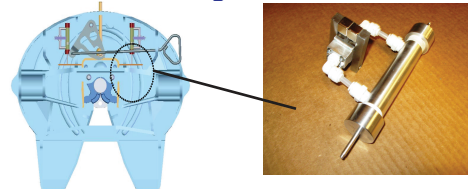
## Electromechanical Systems

### ◆ Closure Systems for Missile Launch Applications



Reusable  
Low-cost  
Eliminates pyrotechnics

### ◆ Smart Fluid Locking Device



Powerless locking  
Automatic locking-unlocking

ADVANCED MATERIALS AND DEVICES, INC



**Shock and Vibration  
Isolation Solutions**

## AMAD, Inc.

Advanced Materials and Devices, Inc. (AMAD) is located in Reno, Nevada. AMAD started its operation in 2002, and its growth and sustainability are based on successful R&D and commercialization efforts.

AMAD's mission is to commercialize novel solutions in the areas of materials, processes, devices, and systems that contribute to the innovation of high-performance electro-mechanical, structural, and energy systems.

## Core Technology

### ◆ MR Materials and Systems

AMAD develops magnetorheological (MR) materials and integrated controllable systems. The functionality of these materials is based on their controllable response to an external magnetic field in milliseconds.

MR technology enables engineers to design a wide range of devices and systems with tunability and adaptability for different engineering applications. MR systems can reduce part count, complexity, size and weight, and improve performance.

### ◆ Electromechanical Systems

AMAD combines the sciences of electrical engineering and mechanical engineering to design and develop advanced electromechanical systems for civilian and military applications.

### ◆ Liquid Spring Damping Systems

A fail-safe, lightweight, controllable liquid spring-magnetorheological gel damper system can be used in extreme environments and a broad range of vehicle driving conditions.

Using state-of-the-art compressible fluid and magnetorheological gel, this system can be utilized as a replacement for coil-over dampers, eliminating the need for mechanical springs and accumulators.

## Services

### ◆ Prototype Development and Fabrication

Prototype Design  
Finite Element Analysis  
    Structural  
    Electromagnetic  
    Thermal  
Computational Fluid Dynamics (CFD)  
Computer Aided Prototype Fabrication

### ◆ Dynamic Testing

MTS 852.110 Damper Test System:  
25 kips force rating  
10 in. dynamic displacement

### ◆ Shock and Vibration Testing

LDS V850-440-T Shaker:  
5,000 lbf sine force peak  
3,000 Hz frequency range  
94 gn sine acceleration peak  
2 in peak to peak displacement

### ◆ Tensile/Compression Testing

MTS Insight Test System:  
67 kips max. force  
45 in. max. travel  
0.001 to 20 in/min testing speed

### ◆ Rheology Testing

Anton Paar MCR 301 Rheometer:  
10<sup>-7</sup> to 3,000 1/min speed range  
Temperature control system  
Magnetorheology cell for flux densities up to 1 T

### ◆ Environmental Testing

Pressure Chamber: up to 150 psi  
Environmental Chamber: -200 to 800 degrees F  
Underwater Testing Facility: up to 25 psi

## Advanced Materials and Devices, Inc.

4750 Longley Lane #104  
Reno, Nevada 89502, USA

Phone: (775) 826-8868  
Fax: (775) 826-8864  
E-mail: [info@amadinc.com](mailto:info@amadinc.com)

[www.amadinc.com](http://www.amadinc.com)