The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

Pressurized Magnetorheological Fluid Damper

CUHK Ref. No.:

05/ENG/197

Inventor:

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Patent Status:

- US Patent Pending
- PCT Application Filed

Non-confidential abstract:

The present invention is about a magnetorheological (MR) fluid damper that provides controllable damping force between two structures such as automobile or railway vehicle suspension systems, buildings, etc. Magnetorheological fluid devices that employ the MR fluids as the working medium to create the controllable viscous damping forces are quite promising for vibration reduction applications. Comparing with the conventional semi-active devices such as variable orifice dampers, MR fluid dampers have the advantages such that they are fast responding, having no moving parts that make them simple and reliable.

The adaptability of MR devices also provides promising flexibility for novel vibration applications. Variety of MR devices have been proposed for different applications, such as MR rotary devices for exercise equipment, clutches and brakes; linear MR devices for the suspension systems in automobiles or railway vehicles, kneejoint prostheses, seismic mitigation for large structures, engine mounts, etc.

Advantages:

The present invention is comprised of a damper body, a piston assembly and a directional valve. It provides a cost-effective fabrication method while sufficient damping force is generated. It is also directed a simple assembly process for the said MR damper that can be modified from a conventional damper. It is also directed a method to minimize the cavitation inside the said MR damper by pressuring the fluid chamber via the use of a directional valve.

Applications:

Suspension systems for Automobile and Railway Vehicle, etc.

For further queries, please contact:

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