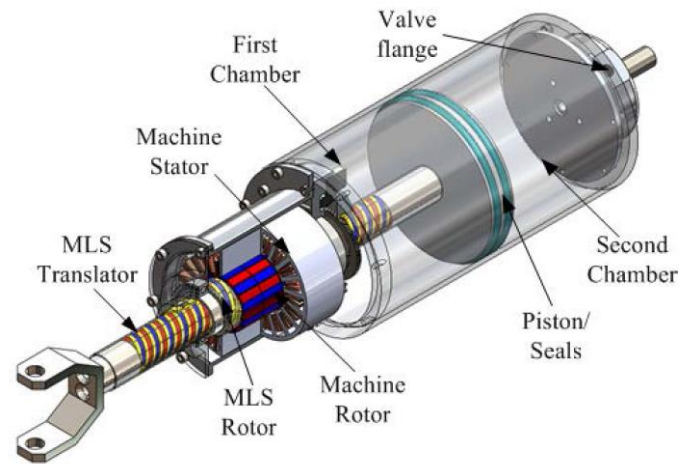
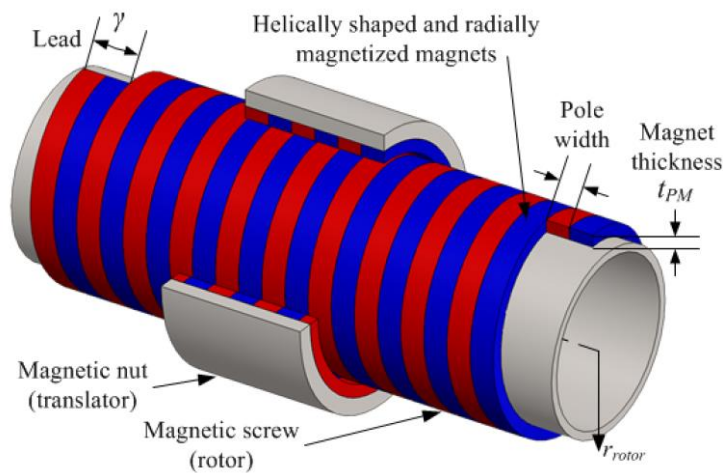


Actuator system with dual chambers

- Magnetic Lead Screw (MLS) actuator with integrated spring/pump



Value Proposition

The MLS is a linear to rotary magnetic gear, a high force/low linear speed movement is converted to a low torque/high rotational speed movement. The high force density is comparable with hydraulics, and a factor of 10-20 higher than linear machines. Due to the lack of contact between the force transferring parts it is possible to obtain high efficiencies with a minimum of wear. Because of the magnetic spring in the MLS it has an built in overload protections which prevents damage if overloaded. The technology allows for compact and cheap integration of pressure chambers for spring or fluid pump functions.

Business Opportunity

The technology holds a great potential for applications with linear motion (hydraulics, electro mechanical and pneumatics), because of the high force density and bandwidth. Through a collaborative project with Aalborg University, it is possible to develop tailored MLS actuators for specific applications, design tools and significant knowhow has been established.

Technology Summary

Technology is original developed for Wave Energy Converters. Lately the MLS technology has been used in active suspension systems for vehicles, where the patented idea originates from. The chambers which naturally is a part of the MLS can be used as a compact air spring in vehicles, replacing the standard coil spring. With use of valves it is possible to lower or raise the vehicle. The chambers can be used as air or fluid pumps in various amounts of applications for instance in medical or rehab applications.

Current State of Development

AAU has matured the technology for more than 10 work-years, five prototypes has been build and tested for active suspension and wave energy converters as part of research project and with external partners. The basic technology of the MLS is proven, the patented technology has been proven in different prototypes but the right application for a commercial break through is still to be found

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