

Name	Smart vibrations isolators Test Rig
Acronym	Smart Vis Lab
Responsible	Renato Brancati
Group	Renato Brancati – Giandomenico Di Massa – Stefano pagano
Location	building 4 - Floor -1
Links	
s/w	matlab
h/w	Shaker, Dspace, laser sensors, accelerometers, power amplifier, power supply, equipment for making magnetorheological rubber samples.
Aims	
<p>Magnetorheological elastomers (MREs) are compounds with suspended magnetizable particles (size 3-10 μm) in a non-magnetic matrix. Their mechanical and rheological properties can be reversibly changed by means of a suitable magnetic field, allowing the realization of pads with adjustable stiffness. In this way, a semi-active vibration isolation system can be realized.</p> <p>The laboratory's equipment allows us to make the MRE pads starting from the mixture components. Characterization tests use coils powered by precision current generators, while stiffness control experiments use coils driven by a high-power amplifier to vary the magnetic field around the pads. The test bench is constituted by a mechanical shaker and by displacement, acceleration and force sensors. Finally, a real-time dSPACE platform is used to implement and validate the development of innovative control algorithms.</p>	