(DEEMED TO BE UNIVERSITY)

Department of Mechanical Engineering

Centre for System dynamics and Condition monitoring

The lab includes state of art systems for Damper testing and Suspension testing, which are presently in use to conduct studies to identify the variation of damping force to be generated by dampers with variation in displacement, as a part DST TSDP project. The lab is setup with funding from DST and KLEF. This laboratory is accessible to all the research scholars and staff members of the University and almost all the equipment is used for outsourcing samples. Since inception, this lab has produced around 20 publications in various reputed Scopus/ SCI indexed journals and actively involved in providing consultancy.

List of equipment

S. No.	Equipment	Cost (inclusive of taxes) in Rs.	Supplier*
1.	**Nano Plug and Play** Fatigue Testing Equipment (Includes UTM and Creep test facilities)	47,72,000.00	Biss (ITW,USA)
2.	Universal Hardness Testing Machine	2,74,825.00	Measure India- Hyderabad
3.	NI C-DAQ (NI 9178 - 8 slot, NI 9234, NI9232, NI 9263)	7,62,000	National Instruments
4.	Single station Servo Hydraulic Test system	2,60,57,910	Biss (ITW,USA)
5.	Suspension Test rig		Biss (ITW,USA)
6.	IR camera	13,65,000	FLIR, Sweden T420
7.	Vibration Pick Up	450000	SPM

Nano Plug and Play

Features

- Single footprint system
- 25 kN load capacity
- ± 25 mm stroke measurement; 0.1 µm resolution
- Operating frequency up to 65 Hz (up to 100 Hz optional)
- Virtually noiseless
- High precision servo-control
- Rated for indefinite operation

Applications

- Tension/Compression/3-point bend
- Ductile and brittle fracture
- Fatigue crack propagation
- Threshold stress intensity
- Low/High-cycle fatigue (LCF/HCF)
- Elastomer properties

Single station Servo Hydraulic Test system (Damper Test Rig)

Features:

- ✓ Force rating: 15kN dynamic capacity
- ✓ Actuator stroke: 200 mm
- ✓ Peak velocity: 1.5 m/s
- ✓ Hydraulic power pack : 65 LPM
- ✓ Safety interlocks : Light curtain, pressure sensor
- ✓ Grips : Self-aligning top hydraulic grip and bottom pneumatic grip
- ❖ Self-aligning automatically operated pneumatic grips and fixtures to hold the test parts
- ❖ Fully automated testing

Suspension / Quarter Poster Test Rig:

Features:

✓ Simulation of road-load data including displacement, strain, velocity, acceleration, load etc

✓ Acceleration upto 5g

✓ Velocity upto 2m/s.

Applications:

✓ Ride comfort and road handling tests,

✓ PSD of road profiles etc.