UNIVERSITY OF TECHNOLOGY SYDNEY

UTS: ENGINEERING
Centre for Electrical Machines and Power Electronics (CEMPE)

AUTOMOTIVE SYSTEMS

Research focuses on maximising fuel efficiency and NVH performance of vehciel powertrains and the safety of on-raod vehicles through innovative solutions in power transimission and suspension.

CURRENT PROJECTS

- Dynamics and control of dual clutch transmission;
- Optimal power management of hybrid car powertrains;
- Investigation into vehicle dynamic stability under specific test manoeuvres;
- Theory and experimental validation of hydraulically interconnected suspensions – case study on Kinectic™ suspensions;
- Active suspensions using interconnected fluid circuits with minimum power consumption.

CEMPE MECHANICAL TEAM

- Leader: Dr. N. Zhang, Associate Professor in Mechanical Engineering
- Team members:
  - Dr. J. Jeyakumaran, Senior Lecturer, Powertrain design and testing
  - Dr. H. Du, Senior Research Assoiate, System dynamics and control
  - Dr. W. Gao, Senior Research Associate, Random vibration and reliability analysis
  - Dr. J. C. Ji, Senior Research Associate, Nonlinear system dynamics

CONTACT DETAILS

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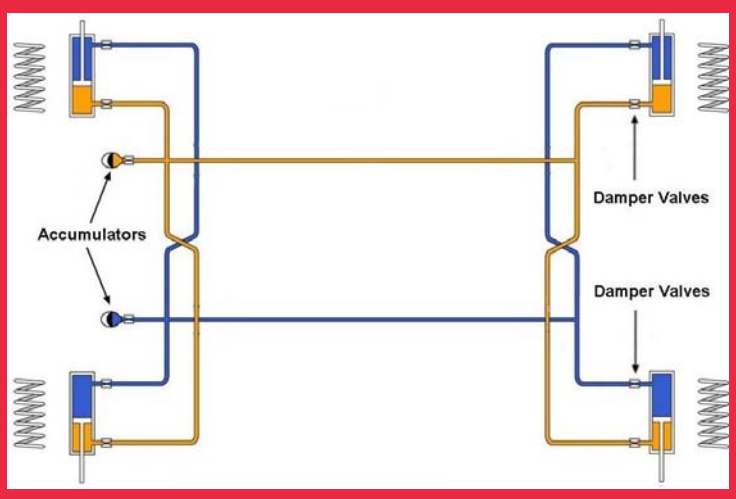
UTS Powertrain Test Facility

Modelling of combined multi-rigid body and multi-flexible body systems, vehicle stability analysis, rollover simulations and accident avoidance



Modelling, analysis and experimental validation of vehicles fitted with active suspensions.

Inventing novel active suspensions (concept design and prototyping)