



Project Proposal for Ph.D.

Project Details

Project Title

An exploration of different control strategies for robust suspension design.

Project Summary

(Minimum 500 and maximum 2000 characters)

The project will investigate the application of control engineering to automotive suspensions. The primary role of a suspension is to isolate the occupants from ground disturbances. They satisfy conflicting requirements of ride and handling. For smoother ride, a softer suspension is preferred while for better handling a harder suspension setting is required. The suspension model will be subject to different ground excitations using an electrodynamic shaker and the response will be recorded using accelerometers. This project will investigate these conflicting requirements to optimize the suspension setting to obtain a desired vehicle response. Based on the mutual interest of the candidate and the faculty members various paradigms will be explored.

Ph.D. Supervisors

Role	Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Prof. Husain Kanchwala	CART	husaink@iitd.ac.in
Supervisor 2	Prof. Sahil Bansal	Civil	sahil@iitd.ac.in

Project requirements (Student qualifications, experience required, etc)

- Bachelors or Masters in Mechanical/Automobile/Civil Engineering with CGPA 7.0 or above and GATE qualified (for bachelors, CFTI exempted as per institute norms).
- Hands on knowledge of MATLAB/Simulink.
- Basic knowledge of Dynamics, suspensions (dampers) is desirable.

Source of fellowship/funding

(CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)

Institute assistantship

Role of Faculty Members involved:

HK will assist in the mathematical modeling of the suspension system followed by experimental testing.

SB will assist in the control system modeling, modal analysis and in problem formulation.