

# ENGINES AND AUTOMOTIVE RESEARCH



Ray W. Herrick Laboratories  
School of Mechanical Engineering  
Purdue University  
177 S. Russell Street  
West Lafayette, IN 47907-2099  
Phone: (765) 494-2132  
Fax: (765) 494-0787  
[rhlab@ecn.purdue.edu](mailto:rhlab@ecn.purdue.edu)

## Engines and Automotive Research Area

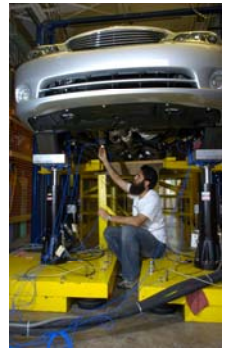
Automotive systems are undergoing revolutionary changes in the way they are designed, tested, manufactured, and operated. In modern day vehicles, there are over two thousand components supplied by different organizations so each change in one subsystem ripples through the industry to bring about changes in all other subsystems. Here are just a few of the significant developments that are transforming automotive systems:

- The escalating price of gasoline and concern about the environment are leading to the emergence of hybrid vehicles. Vehicles with hybrid electric and combustion engines are being purchased at an increasing rate. In order to optimize the efficiency of these vehicles, advanced powertrains must be developed to control the utilization of the power produced by the hybrid engines.
- Recent advances in engine fuel injection technology have led to a quieter combustion process, which heightens our awareness of all other sources of noise in the engine and powertrain such as gear rattle. As global automotive competitiveness increases, manufacturers must develop new noise control methodologies to satisfy customer demands for quieter vehicles.
- Consumers place a high value on new safety features that are being developed for passenger cars and trucks. The durability of tires is one of the primary factors affecting vehicle handling and safety. Only 1 out of 5 automobile owners check their tire pressure on a regular basis. New technologies for monitoring and predicting tire reliability are being developed to make vehicles safer.
- Global competitiveness is requiring automotive manufacturers and suppliers to think differently about every aspect of the vehicle development process. For example, trial and error methods for design are gradually being replaced with more focused testing in conjunction with model-based simulation techniques.
- The commercial sector is developing new technologies for managing their automotive fleets. For example, the trucking industry is increasingly concerned with downtime because profits are lost when trucking companies cannot make deliveries on time. By monitoring the vehicle as it operates, defects in the wheel, driveline, and in other areas can be detected to avoid costly downtime.
- The military sector is also advancing the state of the art in automotive technology in order to support ground forces as they combat new threats to national security. The Department of Defense presently spends approximately 15% on maintenance and those costs are rising. These high costs are preventing the military from procuring new equipment. In order to reduce maintenance costs and safeguard personnel, methods for monitoring and predicting the future reliability of ground vehicles are being implemented to enable condition-based maintenance.

Unique, experimental facilities at Herrick Laboratories include: TPTA (Tire Pavement Testing Apparatus); engine dynamometers; tire roller; 2 post shaker, etc.

### Faculty of Engines and Automotive Research Group:

Dr. Galen King, Dr. Greg Shaver, Dr. Peter Meckl, Dr. Charles Krousgrill,  
Dr. Patricia Davies, Dr. Anil Bajaj



## ENGINES AND AUTOMOTIVE THESES

<u>NAME</u>	<u>YEAR</u>	<u>DEGREE</u>	<u>PROFESSOR(S)</u>	<u>TITLE</u>
Abram, Kwin R. HL 94-11	1994	MSME	Bernhard, R.J.	Indirect Measurement of Internal Engine Forces
Ackers, Spencer C. HL 2007-4	2007	MSME	Adams, D.E.	A Method for Crack Detection in a Wheel End Spindle Using Broadband Modal Excitation
Adi, Gayatri HL 2012-1	2012	Ph.D.	Shaver, G.	Closed Loop Control for Biodiesel Blends in Mixing-Controlled Combustion
Albright., Michael F. HL 88-33	1988	MSME	Bolton, J.S.	Identification & Measurement of Forces Which Produce Noise in the Internal Combustion Engine
Allaei, Daryoush HL 86-32	1986	Ph.D.	Soedel, W.	Vibration Analysis of Shells of Revolution Deviating from Axisymmetry with Application to Tires
Anders, Jonathan W. HL 2003-9	2003	MSME	Franchek, M./ Meckl, P.	An Instrumental Variable Approach to Non-linear Model-based Adaptive Control of Engine Speed
Balasubramanian, Shambhavi HL2016-1	2016	MSME	Meckl, P.	Fuel Type Estimation Using Fuel System Parameters
Barbee, Angela	1998	MSME	Krousgrill, C.	Non-thesis. Analysis of Automotive Mirror Shake
Baugh, Thomas J. HL 80-37	1980	MSME	Soedel, W.	Noise Reduction of a Two-Cycle Engine by Exhaust Shaping
Becker, Richard L. HL 96-4	1996	MSME	Starkey, J.M.	The Effects of Free-Play on Torsional Drive-line Dynamics
Bednar, John M. HL 75-20	1975	MSME	Hawks, K.H.	Analysis and Computer Simulation of the Passenger Heating and Air Conditioning Requirements for an Electric Car
Belt, Bryan Whitney HL 2012-7	2012	MSME	Shaver, G.	High Voltage Energy Storage System Design for a Parallel-Through-The-Road Plug-In Hybrid Electric Vehicle
Bergmann, Uwe HL 78-20	1978	MSME	Sullivan, J.W.	Investigation of a Sound Power Measurement Concept for Heavy Trucks
Bhalerao, Pranav	2012	MSME	Meckl, P.	Analysis and Compensation of Fuel Quantity Variation in Multipulse Fuel Injection

Bhat, Chaitanya HL 2010-3	2010	MSME	Meckl, P.	Influence of Electronic Injection Parameters on Combustion-Induced Noise in a Small Diesel Engine
Bilal, Nasir	2011	Ph.D.	Adams, D.	Design Optimization of the Suction Manifold of a Reciprocating Compressor Using Uncertainty and Sensitivity Analysis
Bouchillon, M. Scott HL 89-10	1989	MSME	Shoureshi, R.	Optimal Tuning for Adaptive Hydraulic Engine Mounts
Brown, Delores E. HL 90-15	1990	MSME	Sherman, P.	Noise Source Identification of a Multi-Cylinder Reciprocating Automotive Air Conditioning Compressor
Buehlmann, Eugen T. HL 77-41	1977	Ph.D.	Crocker, M.J.	The Measurement of the Mach Number and the Speed of Sound in an Engine Exhaust System by an Acoustical Method
Butner, Charles	2011	MSME	Adams, D.E.	Investigation of the Effect of Bolt Preload on the Dynamic Response of a Bolted Interface
Bunce, Michael P. HL 2009-5	2009	MSME	Shaver, G.	Optimization of Soy-Biodiesel Combustion in a Modern Diesel Engine
Caris, John C. HL 90-16	1990	MSME	Starkey, J.M.	An Improved Method for Optimal Design of Vehicle Body Mounts
Cao, Jiajun HL2015-2	2015	MSME	Meckl, P.	Analysis and Simulation of Nonlinearities in Noise Attenuation Model for a Diesel Engine
Cao, Rui HL2014-9	2014	MSME	Bolton, J.S.	Investigation of a Fully Coupled Spinning Tire-Wheel Model
Chandrachud, Neha HL 2009-4	2009	MSECE	Meckl, P.	Classification of the Health of Diesel Engines Using Sparse Linear Discriminant Analysis
Chung, Jing-Yau HL 74-11	1974	Ph.D.	Crocker, M.J.	Measurement and Analysis of Diesel Engine Noise
Cunningham, Patrick J. HL 2000-23	2000	MSME	Franchek, M.A.	Automated Speed Controller Synthesis for Internal Combustion Engines
Cunningham, Patrick J. HL 2006-17P	2006	Ph.D.	Meckl, P.	Monitoring Diesel Particulate Filters
Danforth, III, Robert J. HL 96-14	1996	MSME	Mongeau, L.	Sound Transmission Through Road Vehicle Primary Bulb Seal Assemblies
DeEskinazi, Jozef HL 76-6	1976	Ph.D.	Soedel, W./ Yang, H.T.	A Finite Element Model for the Stress Analysis of Pneumatic Tires in Contact with a Flat Surface

Deignan, Paul B. HL99-9	1999	MSME	Meckl, P.	Virtual Sensing: The Development of a Methodology for Internal Combustion Engine Torque Estimation
Deignan, Paul B. HL 2006-19	2006	Ph.D.	Meckl, P./King, G.	Information-Theoretic System Identification
Deng, Rong HL 2004-10	2004	Ph.D.	Davies, P./Bajaj, A.	Modeling and Characterization of Flexible Polyurethane Foam
Deol, Raj K.	1990	MSME	Shoureshi, R.	Non-thesis. Research Study of Experimental Investigation of Actuators for Self-Tuning Hydraulic Engine Mounts
Deshmukh, Yash HL 2010-4	2010	MSME	Davies, P./Bajaj, A.	Measurement of Foam Properties and Modeling of Layered Foam Systems
Deshpande, Ameya	2016	MSME	Meckl, P.	Non-thesis: Exhaust Temperature Management
Ding, Chuan	2014	Ph.D.	Shaver, G.	Thermal Efficiency and Emission Analysis of Advanced Thermodynamic Strategies in a Multi-cylinder Diesel Engine Utilizing Valve-train Flexibility
DiPetta, Tiffany	2011	MSME	Adams, D.E.	Development and Verification of a Diagnostic Cleat for Detecting Faults in Military Wheeled Vehicles
D'Souza, Jason M. HL 97-15	1997	MSME	Starkey, J.M.	A Full-Vehicle Force-Based Steady-State Cornering Model
Durchholz, Anthony J.	1988	MSME	Starkey, J.M.	Non-thesis. Research Study on Dynamic Substructuring: An Automotive Application
Ellis, Ronald M.	1972	MSME	Crocker, M.J./Tree, D.R./Czarnecki, S.	Non-thesis. Research Study of Muffler Components
Fain, David	2014	MSME	Shaver, G.	Operating Range Characterization and Expansion of Premixed Charge Compression-Ignited Combustion in a Multi-Cylinder Diesel Engine with Variable Valve Actuation, Variable Fuel Reactivity & Revised Turbomachinery
Ferren, W. Brent HL 91-24	1991	MSME	Bernhard, R.J.	An Investigation of the Active Control of Structure-borne Road Noise in Automobile Cabins
Fogarty, Adam	2014	MSME	Meckl, P.	High Voltage Rear Electric Drivetrain Design for a Parallel-Through-the-Road Plug-in Hybrid Electric Vehicle
Freeman, Timothy HL 2004-7	2004	MSME	Adams, D.E.	Reduction of Vehicle Chassis Vibrations Using the Powertrain System as a Multi-Degree-of-Freedom Dynamic Absorber

Gallant, Donald P. HL 2005-7	2005	MSME	Davies, P.	An Experimental Study of the Perceptual Attributes of Tonal Sounds and Annoyance with Application to Automotive Component Noise
Garg, Akash	2013	MSME	Shaver, G.	Exhaust Thermal Management Using Intake Valve Closing Timing Modulation
Gerhold, Carl H. HL 75-5	1974	Ph.D.	Tree, D.R.	Use of Shelters to Protect a Vehicle Pass-By Noise Measurement Facility
Geveci, Mert HL 2005-8	2005	Ph.D.	Bernhard, R.J.	Robust Cylinder Health Monitoring for Internal Combustion Engines
Gill, Daniel E. HL 75-24	1975	MSME	Soedel, W.	The Determination of the Mechanical Properties of Automobile Tires
Gilmer, Deidre M. HL98-14P	1998	MSME	Bernhard, R.J.	Signature Recovery Techniques With Applications to Engine Valve Trains
Glass, John W.	1997	MSME	Franchek, M.	NARMAX Modeling and Robust Feedback Control of Internal Combustion Engines
Graf, Peter L. HL 87-45	1987	Ph.D.	Shoureshi, R.	Semi-Active and Active Control of Frame Vibration in Automotive Vehicles
Gul, Kamran HL 2009-11	2009	Ph.D.	Adams, D.E.	Modeling and Analysis of Engine Cold-Test Cells for Optimizing Driveline Design for Structural Reliability and Engine Assembly Defect Diagnostics
Gupta, Rohinish HL 2016-04	2016	MSME	Meckl, P.	Modelling and Control of a Parallel Through-the-Road Plug-In Hybrid Vehicle
Hagenmeyer, Lorenz	2000	MSME	Bajaj, A	Non-thesis. Occupied Car Seats Dynamics
Halbe, Mayura	2015	MSME	Shaver, G.	Analysis and Algorithm Development for Diesel Engine Systems Utilizing Variable Valve Actuation to Enable Premixed Charge Compression Ignition and Cylinder
Hall, Carrie HL 2012-13	2012	Ph.D.	Shaver, G.	Fuel-Flexible Combustion Control of Modern Compression-Ignition and Spark-Ignition Engines
Hamilton, G. Kent	1996	MSME	Franchek, M.	Robust Controller Design for Internal Combustion Engines
Haroon, Muhammad N. HL 2003-17	2003	MSME	Adams, D.E.	Nonlinear System Identification of a Tire-Vehicle Suspension System Using Response Transmissibility
Haroon, Muhammad N.	2007	Ph.D.	Adams, D.E.	A Methodology for Mechanical Diagnostics and Prognostics to Assess Durability of Ground Vehicle Suspension Systems

Hasselbring, D. Blake HL 99-6P	1999	MSME	Starkey, J.	A Substructuring Technique to Predict Axle Vibration Due to Housing and Drive Train Component Interaction
Hastings, Aaron HL 2004-15	2004	Ph.D.	Davies, P.	Sound Quality of Diesel Engines
Hayes, Paul A. HL 77-40	1977	MSME	Hamilton, J.F.	Experimental and Analytical Investigation of Diesel Engine Piston Impact and Noise
Hayward, Michael HL 2013-4	2013	MSME	Davies, P./Bolton, J.S.	Identification and Modification of Dominant Noise Sources in Diesel Engines
Hirahara, Takuho	1980	MSME	Hamilton, J.F.	Non-thesis. Research Study on the Operating Crank Shaft Deflection of a Compressor
Hiremath, Jagdish HL2015-1	2015	MSME	Meckl, P.	Development of UREA-SCR Dosing Control Strategies for a Diesel Electric Hybrid Car
Hollingsworth, Larry D. HL 93-18	1993	MSME	Bernhard, R.J.	Performance Prediction of Active Mount Vibration Control Using Finite Element Methods
Hornbostel, Hermann F. HL 77-18	1977	MSME	Sullivan, J.W.	Sound Power Determination of a Truck in a Semi-Anechoic Room
Hunckler, Charles J. HL 79-8	1979	Ph.D.	Soedel, W.	The Dynamic Behavior of an Automobile Tire
Ippili, Rajani HL 2003-5	2003	MSE	Davies, P./Bajaj, A	System Identification of Quasi-Static Foam Behavior and Its Application in the Prediction of Static Equilibrium Position of a Car Seat Occupant
Jadhav, Bilwa	2014	MSME	Shaver, G.	Integration and Implementation of High-Voltage Energy Storage Sub System for a Parallel-Through-The-Road Plug-In Hybrid Electric Vehicle
James, Scott HL 2007-11	2007	MSME	Meckl, P.	Diesel Engine Diagnostics Using Singular Spectrum Analysis
Jaques, Janette HL 2006-13	2006	MSME	Adams, D.E.	Headrest Rattle: Nonlinear Model Identification and Analysis
Jaques-Meyer, Janette	2011	Ph.D.	Adams, D.E.	Using Impact Modulation to Identify Loose Bolts in a Satellite Structure
Jatana, Gurneesh	2014	Ph.D.	Lucht, R./Shaver, G.	High-Speed Diode-Laser-Absorption Measurements of Gas Dynamics for Diesel Engines
Jiang, Hao	2008	Ph.D.	Adams, D.E.	Material Damage Modeling and Detection in a Thin Metallic Sheet and Sandwich Panel using Passive Acoustic Transmission

Johnson, Timothy HL 2006-21P	2006	Ph.D.	Adams, D.E.	Diagnostics of Bead Area Damage in Rolling Tire Durability Tests
Jones, Steven R. HL 73-17	1973	MSME	Crocker, M.J.	The Design of Acoustic Enclosures for Diesel-Powered Commercial Vehicles
Joshi, Alok HL 2007-13	2007	Ph.D.	Meckl, P./King, G./Jennings, K.	Strategies for Data-Based Diesel Engine Fault Diagnostics
Joshi, Gauri HL 2010-2	2010	MSME	Davies, P.	Planar Whole-Body Vibratory Response of a Nonlinear Multi-Body Model of a Seat-Occupant System with Polyurethane Foam
Kakade, Ravindra HL 2011-3	2011	MSME	Meckl, P.	Fault Detection Using Spectral Methods: Wavelets and Correlation Techniques
Kim, Uiji HL 2006-9	2006	Ph.D.	Mongeluz, L./Krousgrill, C.	Friction-Induced Vibrations and Squeal of Glass-Run Window Sealing Systems
Kim, Yong Joe HL 2003-15	2003	Ph.D.	Bolton, J.S.	Visualization of Tire Vibration and Sound Radiation and Modeling of Tire Vibration with an Emphasis on Wave Propagation
Kocher, Lyle HL 2012-6	2012	Ph.D.	Shaver, G.	Physically-Based Modeling, Estimation and Control of the Gas Exchange and Combustion Processes for Diesel Engines Utilizing Variable Intake Valve Actuation
Koeberlein, Ed HL 2011-8	2011	MSME	Shaver, G.	Physics-Based Modeling and Estimation of Exhaust Manifold Filling Dynamics on a Diesel Engine Equipped with Flexible Intake Valve Actuation
Kim, Yoon-Ki	2000	Ph.D.	Soedel, W.	Forced Response of Tires with Mass Nonuniformities Using Ring Models
Kohrman, Glenn J. HL 87-41	1987	MSME	Bernhard, R.J.	An Investigation of a Sound Power Measurement Fixture for Internal Combustion Engines
Kulkarni, Anup HL 2008-6	2008	MSME	Shaver, G.	Investigation of High Efficiency, Ultra-Low Emission, Advanced Mode Diesel Combustion in a Validated, Flexible and Computationally Efficient Whole Engine Model
Kulkarni, Mukta HL 2016-06	2016	MSME	Meckl, P.	Determining Fuel Type From Estimates of Bulk Modulus using Rail Pressure Measurements
Lai, Peter Chang-Ching HL 96-8	1996	Ph.D.	Soedel, W.	A General Procedure for the Analysis of Gas Pulsations in Thin Compressor or Engine Manifolds and Thin Shell Type Mufflers



Laville, Fredric HL 77-35	1977	Ph.D.	Soedel, W.	Muffler Design by Scaling Using Engine Characteristics
Le, Dat	2014	Ph.D.	Shaver, G.	Physically-based Modeling, Estimation, and Control of Piezoelectric Fuel Injection during Rate Shaping Operation
Lee, James J. HL 83-32	1983	Ph.D.	Soedel, W.	Computer Simulation of Pulsations in a Gas Fired Pulse Combustion Device and Predictions of Their Exhaust Noise for Single and Dual Combustion Chamber Designs
Lu, Xueting (Sylvia)	2016	MSME	Shaver, G.	Improving Fuel Economy During High Load Diesel Engine System Operation Through Valve Train Flexibility
Magee, Mark	2014	MSME	Shaver, G.	Exhaust Thermal Management Using Cylinder Deactivation and Late Intake Valve Closing
McGary, Michael HL 80-2	1980	MSME	Crocker, M.J.	Noise Source Identification of Diesel Engines Using Surface Intensity Measurements
McGee, Gavin HL 2002-12P	2002	MSME	Adams, D.E.	Characterization of Nonlinearity in a Tire-Vehicle Suspension System
Memering, Douglas HL99-21	1999	MSME	Meckl, P.	The Application of Adaptive Control Algorithms to the Low Idle Governor of a Heavy Duty Engine
Mercer, Nicholas S. HL 97-3	1997	MSME	Starkey, J.M.	Analysis of the Characteristics and Response of an Engine Equipped with Nonlinear Engine Mounts Subjected to Variable Applied Loads
Meyer, Alan	2011	MSME	Adams, D.	Damage Identification for Healthy Monitoring of Ground Vehicle Through Active Probing of Vehicle Response
Meyer, Rick	2012	Ph.D.	Meckl, P.	Modeling and Control of a Fuel Cell-Battery Hybrid Vehicle
Mitra, Eeshan HL 2017-01	2017	MSME	Krousgrill, C.	Effects of Time-Varying Mesh Stiffness and It's Modifications on Planetary Gear Dynamics
Modiyani, Rajani HL 2010-1	2010	MSME	Shaver, G.	Effect of Intake Valve Closure Timing on Effective Compression Ratio and Gas Exchange Process of a Modern Diesel Engine

Mohrfeld, Jaclynn	2006	MSME	Franchek, M.A.	Systematic Feedforward Transient Fueling Identification for Internal Combustion Engines
More, Ranjit HL 2011-6P	2011	MSME	Meckl, P.	Diagnostics of Advanced Diesel Fuel Injectors
Morse, Phillip R. HL 95-19	1995	MSME	Starkey, J.M.	Development and Verification of a Force-Based Roll Center Model for Vehicle Suspensions
Mynderse, James	2004	MSME	Chiu, G	Design and Control of a Steering Wheel Vibration Simulator for Human Perception Testing
Nayyar, Soumya	2016	MSME	.Shaver, G.	Implementation and Analysis of Reverse Breathing, Rebreathing and Cylinder Deactivation for Aftertreatment Thermal
Osibun, Andrew W. HL 2003-25	2003	Ph.D.	Chiu, G.T.-C./ Franchek, M.A.	Performance Enhancement of Internal Combustion Engines Using Crank-Angle Domain Control
Padmanabhan, Hemanth	2001	MSME	Franchek, M.	Non-thesis. Engine Diagnostics
Panuganti, Chaitanya	2016	MSME	Shaver, G.	Control-Oriented Modeling, Validation, and Analysis of a Natural Gas Engine Architecture
Park, Junhung HL 2002-1	2002	Ph.D.	Mongeau, L.	Effects of Mechanical Properties of Sealing Systems on Aerodynamic Noise Generation Inside Vehicles
Park, Jeong-il HL 2004-16P	2004	Ph.D.	Adams, D.E.	Mathematical Modeling and Simulation of a Multi-Cylinder Automotive Compressor
Pietrzak, Bradley	2014	MSME	Shaver, G.	Algorithm Development and Analysis for Advanced Engine Technologies Including Piezoelectric Fuel Injection and Variable Valve Actuation
Potter, Patrick HL97-24	1997	MSME	Starkey, J.	The Effects of Suspension Turning on the Limit Handling Behavior of High Performance Vehicles
Prasad, Marehalli G. HL 80-27	1980	Ph.D.	Crocker, M.J.	Acoustical Modeling of Automotive Exhaust Systems
Puri, Tarun HL 2004-20	2004	MSME	Davies, P.	Integration of Polyurethane Foam and Seat-Occupant Models to Predict the Settling Point of a Seat Occupant
Railkar, Nishigandha	2013	MSME	Shaver, G.	Investigation of Operating Range Capability of Gasoline Fueled Compression Ignition

Ro, Hee Seung HL 89-36	1989	Ph.D.	Soedel, W.	Modeling and Interpretation of Fatigue Failure Initiation in Rubber Related to Pneumatic Tires
Roberts, Leighton	2014	MSME	Shaver, G.	Analysis of the Impact of Early Exhaust Valve Opening and Cylinder Deactivation on Aftertreatment Thermal Management and Efficiency for Compression Ignition Engines
Robinson, Daniel	2007	MSME	Bernhard, R.J.	Effect of Low Frequency Sound on Resonant Sound Insulation and Rattle Systems
Roecker, Ryan	2001	MSME	Franchek, M.	Non-thesis. Engine Diagnostics
Ross, David F. HL 76-28	1976	Ph.D.	Crocker, M.J.	An Experimental Investigation of the Normal Specific Acoustic Impedance of an Internal Combustion Engine
Ruikar, Neha HL 2012-10	2012	MSME	Shaver, G.	FPGA Model Based Within-a-Cycle Estimation of Rate Shaping for a Piezoelectric Fuel Injector
Ryan, James R. HL 77-36	1977	MSME	Sullivan, J.W.	Design and Development of an Indoor Simulation of the SAE J366b Measurement of Exterior Truck Noise
Sasidharan, Premjee HL 2008-1	2008	MSME	Meckl, P.	Development of an Electronic Fuel Injection System for a Small Electric Power Unit
Satkoski, Chris A. HL 2010-12	2010	MSME	Shaver, G.	Modeling, Estimation, and Control of a Piezoelectric Actuated Fuel Injector
Schultz, Ryan E. HL 2010-10P	2010	MSME	Meckl, P.	Light-Off Temperature Shift as a Detection Method of Catalyzed Diesel Particulate Filter Nonmethane Hydrocarbon Oxidation Efficiency Degradation
Seybert, Andrew F. HL 76-3	1975	Ph.D.	Crocker, M.J.	Estimation of Frequency Response in Acoustical Systems with Particular Application to Diesel Engine Noise
Shah, Chintan HL 2008-9	2008	MSME	Meckl, P.	Particulate Matter Load Estimation in Diesel Particulate Filters
Shah, Minesh A.	1998	Ph.D.	Franchek, M.	Steady State Adaptive Fueling Control of Internal Combustion Engines
Shen, Jin HL 2012-11	2012	MSME	Shaver, G.	Within-A-Cycle Flow Rate Estimation for Piezoelectric Fuel Injection
Shirsikar, Sai HI 2013-5	2013	MSME	Meckl, P.	Estimation of Fueling Variation in Multipulse Injection

Singh, Rajiv HL 2000-18	2000	MSME	Davies, P./ Bajaj, A.	Dynamic Modeling of Polyurethane Foam and Development of System Identification Methodologies
Smith, Lane R.	1998	MSME	Franchek, M.A.	Nonlinear Modeling and Robust Control of a Single Cylinder I.C. Engine for Hybrid Vehicle Applications
Snyder, David B.	2009	MS	Shaver, G.	Non-Thesis: Model-Based Biodiesel Blend Estimation in Diesel Engines
Snyder, David B. HL 2010-5	2010	Ph.D.	Shaver, G.	Soy-based Biodiesel Blend Estimation and Accommodation in a Modern Diesel Engine
Sobecki, Brandon HL 2014-7	2014	MSME	Davies, P./ Bolton, J.S.	Development of Sound Quality Metrics for Gear Rattle in Diesel Engines
Sohaney, Richard C. HL 80-10	1980	MSME	Sullivan, J.W.	Analytical and Experimental Model to Predict Valve Train Vibrations in Internal Combustion Engines
Stricker, Karla HL 2012-3	2012	Ph.D.	Shaver, G.	Turbocharger Map Reduction and Estimation of Effective Compression Ratio in a Modern Diesel Engine Utilizing Flexible Intake Valve Actuation
Stroh, David J. HL2000-11	2000	MSME	Franchek, M.	Transient and Steady-State Adaptive Fueling Control of Internal Combustion Engines
Stutts, Daniel S. HL 90-31	1990	Ph.D.	Soedel, W.	A Study of Horizontal and Vertical Forces Generated by Rolling Tires
Sundararaman, Shankar HL 2007-6	2007	Ph.D.	Adams, D.E.	Numerical and Experimental Investigations of Practical Issues in the Use of Wave Propagation for Damage Identification
Surella, Matthew M. HL 93-9	1993	MSME	Krousgrill, C.M.	The Effects of Clearance Gaps on Torsional Drivetrain Dynamics
Surve, Pranati HL 2008-5	2008	MSECE	Meckl, P.	Diesel Particulate Filter Diagnostics Using Correlation and Spectral Analysis
Sutjiono, Raymond HL 2013-3	2013	MSME	Meckl, P.	Real-Time On-Board Indirect Light-Off Temperature Estimation as a Detection Technique of Diesel Oxidation Catalyst Effectiveness Level
Tayal, Prateek	2014	MSME	MEckl, P.	Light Off Temperature Based Approach to Determine Diesel Oxidation Catalyst Effectiveness Level and the Corresponding Outlet NO and NO <sub>2</sub> Characteristics

Taylor, Alex	2016	MSME	Shaver, G.	Modelling and Control of a Parallel Through-the-Road Plug-In Hybrid Vehicle
Thompson, James A. HL 94-1	1994	MSME	Starkey, J.M.	The Development of an Experimental Test Stand to Measure the Stiffness Characteristics and Dynamic Response of a Driveline System
Thornton, William	2004	MSME	Bernhard, R.	Non Thesis: Tire/Pavement Interaction Noise
Towers, David A. HL 73-24	1973	MSME	Tree, D.R.	The Reduction of Diesel Engine Noise of Commercial Vehicles by Acoustic Enclosure
Tung, Vincent T.C. HL 81-17	1981	MSME	Crocker, M.J.	Combustion Noise of a Diesel Engine
Ufford, Donald A. HL 89-38	1989	MSE	Bernhard, R.J.	Development of a Digital Signal Processing Technique to Determine the Number of Incoherent Sources in a System with Application to an Automotive Powertrain
Vagha, Aniket HL 2013-8	2013	MSME	Meckl, P./King, G.	Strategy for Health Monitoring and Fault Detection in Heavy Duty Diesel Engines
Van Alstine, Dan	2013	Ph.D.	Shaver, G.	Control-Oriented Modeling and Operating Range Expansion of Premixed Charge Compression-Ignited Combustion in a Multi-Cylinder Diesel Engine with Flexible Valve Actuation and Variable Fuel Reactivity
Vora, Ashish	2016	Ph.D.	Shaver, G.	Modeling the Impact of Battery Degradation within Lifecycle Cost Based Design Optimization of Heavy-Duty Hybrid Electric Vehicles
Wang, Bryan	2012	MSME	Adams, D.	Kinematic Center of Gravity Estimation Method of Ground Vehicle Based on Dynamic Measurements
Wang, Yuntian (Lucius)	2015	MSME	Shaver, G.	Increasing the High Load Limit of Effective Premixed Charge Compression Ignition Via Intake Valve Closure Modulation and Late Injection
Warman, Ben	2012	MSME	Meckl, P.	Data Analysis of Diesel Engine Faults
Weisert, Wilson G.	1969	MSME	Soedel, W.	Non-thesis. Research Study of Engine and Load Stand Development

White, Seth W. HL98-22	1998	MSME	Davies, P./ Bajaj, A.	Dynamic Modeling and Measurement of Occupied Car Seats and Seating Foam
Widdle, Jr., Richard D. HL 2005-9	2005	Ph.D.	Davies, P	Measurement and Modeling of the Mechanical Properties of Polyurethane Foam
Wiederhold, Jason H. HL 92-10	1992	MSME	Bernhard, R.J.	Indirect Measurement of Forces Exciting Engine-Like Structures
Witwer, Randall K. HL 78-39	1978	MS	Sullivan, J.W.	An Investigation of a Simulated Drive-By Noise Measurement Concept for Heavy Vehicles
Wolfert, J. Jeff HL 89-33	1989	MSME	Shoureshi, R.	Real Time Structural Parameter Identification with Applications for the Optimal Tuning of Adaptive Hydraulic Engine Mounts
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Yang, Chulho HL 2004-11	2004	Ph.D.	Adams, D.E.	Experimental Embedded Sensitivity Functions for Use in Mechanical System Identification
Yang, Jinpu	2014	MSME	Meckl, P.	Non-thesis: Noise Study in Diesel Engines
Yim, Denny M. HL 95-12	1995	MSME	Bolton, J.S.	Influence of Surface Variables on Motor Vehicle Passby Noise Measurements
Young, Cheng J. HL 73-18	1973	Ph.D.	Crocker, M.J.	Acoustic Analysis of Mufflers for Engine Exhaust Systems
Yum, Kiho	2005	Ph.D.	Bolton, J.S.	Control of Structural-Acoustic Radiation From Tires by Structural Modification
Zhou, Keqin	2014	MSME	Meckl, P.	NO and NO <sub>2</sub> Modeling for Diesel Oxidation Catalyst at Different Thermal Aging Levels

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