

Greg Shaver's Research Team & Projects

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Interests: Modeling, design & control of advanced combustion and powertrain strategies that allow the efficient and clean use of conventional fuels, coal-derived fuels and biofuels. Variable valve actuation. Piezo-electric fuel injection.

Graduate Students:

- Dave Snyder (3rd yr, DPhD) – fuel-flexible combustion control: experimentation, bio-content estimation
- Gayatri Adi (3rd yr, MSME/PhD, Cummins Fellow) – fuel-flexible combustion control: modeling, experiments
- Mike Bunce (2nd yr, MSME) - fuel-flexible combustion control: experiments, exhaust analysis, graduation: 8/2009
- Karla Stricker (2nd yr, DPhD) – VVA/PCCI control: new testbed build
- Rajani Modiyani (2nd yr, MSME, Cummins Fellow) – VVA/PCCI control: new testbed build, graduation: 8/2009
- Carrie Hall (1st yr, DPhD) – fuel-flexible combustion control: experiments
- Dan Van Alstine (1st yr, DPhD) – VVA/PCCI control: VVA system setup/control
- Chris Satkoski (1st yr, MSME) – Modeling and control of peizo fuel injectors
- Lyle Kocher (1st yr, DPhD) - VVA/PCCI control: VVA system setup/control
- Ed Koeberlein (to join group as grad. student in Fall '09, MSME)



Dave

Gayatri

Mike

Karla

Rajani

Carrie

Dan

Chris

Lyle

Current Undergraduate Students:

- Paul Meckl – mentor: Karla
- Bernabe Davila – mentor: Carrie

Current Projects:

- Modeling and Control of Multi-cylinder VVA/PCCI Engines, Sponsor: Cummins
- Diesel Engine Development to Accommodate a Wide Variety of Fuel Blends, Cummins
- Physics-based Modeling of Alt. Fuels Combustion in Diesel Engines, Sponsor: Office of Naval Research
- Modeling and Control of Multi-cylinder HCCI Engines, Sponsor: NSF GOALI Program
- Piezoelectric Fuel Injection System: Measurement, Modeling, Control and Virtual Sensing, Sponsor: Cummins Fuel Systems, Status: Ongoing, with: P. Meckl (ME)

Pending Projects:

- Low-temp. combustion control for multicylinder heavy-duty diesel engines incorporating variable valve act., piezo-electric fuel injection, and advanced turbo-machinery, Sponsor: DOE NETL, 6/09-5/12
- Performance Prediction and Control for Efficient and Quiet Series Hydraulic Hybrid Vehicles, Sponsor: EPA, 6/09-5/12
- Project Plug-IN, Sponsor: Area 3 of the DOE Transportation Electrification grant program, 10/09-9/12

Greg Shaver Bio:

Greg Shaver is an assistant professor of Mechanical Engineering at Purdue University. He is also a graduate of Purdue University's School of Mechanical Engineering, having obtained a Bachelor's degree with highest distinction, and holds a Masters degree and a Ph.D. in Mechanical Engineering from Stanford University. His research interests and background include the modeling and control of advanced combustion processes. Greg is an active member of ASME, participating in the Dynamic Systems and Controls Division and the Automotive and Transportation Systems Panel. He is an associate editor for the IFAC Control Engineering Practice journal, and is a recent awardee of the Kalman award for the best paper published in the Journal of Dynamic Systems, Measurement, and Control.

