



Call For Papers
11th International Conference On

ADVANCED VEHICLE AND TIRE TECHNOLOGIES"

**2009 ASME International Design Engineering Technical Conference (IDETC)
August 30-September 2, 2009, San Diego, CA**

Sponsored by: [Vehicle Design Committee](#)

Technical Research Areas: The Vehicle Design Committee of the ASME Design Engineering Division is organizing an International Conference entitled "Advanced Vehicle and Tire Technologies". Papers are invited on innovative analytical, computational, and experimental investigations in control, dynamics, and design of full vehicle systems and their sub-assemblies. Papers may address fundamental research, applied research, or successful implementations relating to light or heavy vehicle design and development. Five symposia will be organized as follows:

Conference Chair:

Professor Corina Sandu

Associate Professor of Mechanical Engineering
Director of Advanced Vehicle Dynamics Laboratory (AVDL)
101 Randolph Hall, Virginia Tech, Blacksburg, VA 24061
Phone: (540) 231-0725
E-mail: csandu@vt.edu

Program Co-Chairs:

Professor Mohammad H. Elahinia

Assistant Professor, MIME Department
Dynamic and Smart Systems Laboratory
4045 Nitschke Hall, University of Toledo
Toledo, OH 43606
Phone: (419) 530-8224
Email: mohammad.elahinia@utoledo.edu

Dr. Ming Cao

General Motors R&D, PowerTrain Sys Research,
324 Reb, 30500 Mound Road,
Warren, MI 48071
Phone: (586) – 9867277
Internal Mail code: 480-106-252
E-mail: ming.cao@gm.com

Symposium 1: Advances in Methods for Vehicle Systems Design and Control

Topics include optimal, reliable, and robust design of vehicles and their systems and subsystems, design of integrated (mechatronics) systems, and engineering applications referring to vehicle design.

Organizer: **Dr. Moustafa El-Gindy**
Penn state University
E-mail: mxe15@psu.edu

Co-Organizer: **Dr. Massimiliano Gobbi**
Politecnico di Milano (Technical University)
E-mail: massimiliano.gobbi@polimi.it

Symposium 2: Advances in Vehicle Design Tools to Enhance Safety, Health, and Ergonomics

A number of vehicle design tools such as finite element and biomechanics dynamics programs are used to design safety and health enhancements that reduce the probability and intensity of injuries in vehicle crashes. Topics will include finite element methods for crush-based accident analysis, seat design with airbag and seatbelt system integrations and robust structures for occupant protection during impacts, the response of the human body to vibration and mechanical shocks, general means for improving crashworthiness of vehicles, and biomechanics studies.

Organizer: **Alan Mayton**
NIOSH, Pittsburgh Research Lab,
E-mail: amayton@cdc.com

Co-Organizer: **Dr. Dongpu Cao**
Waterloo Centre for Automotive Research(WatCAR)
Phone: (519)888-4567

Symposium 3: Advances in Multibody Systems Modeling and Validation for Vehicle Dynamics Applications

Topics will include advanced multibody systems modeling methods and algorithms that enable a more efficient, accurate, and improved vehicle mobility and dynamic performance prediction, experimental evaluation and model validation tests. Other example topics include: full or subsystem vehicle modeling, tire modeling, advanced analytical and computational methods and algorithms, uncertainty modeling, damping modeling, new equipment and new methodologies developed for testing vehicles and vehicle systems.

Organizer: **Dr. Corina Sandu**
Virginia Polytechnic Institute and State University
E-mail: csandu@vt.edu

Co-Organizer: **Dr. Xiaobo Yang**
Chrysler LLC
E-mail: xy1@dcx.com

Symposium 4: Advances in Vehicle Systems Dynamics and Control

Papers in the general area of Dynamics and Controls applications to vehicle systems are welcome. Topics include (but not limited to) integrated design, modeling, analysis, and experimental testing of :

1. Advanced Sensing Technology: nano- and micro- sensors, GPS applications, sensing fusion, soft-sensing algorithms, diagnostics, and prognostics
2. Active Safety System Design: accident avoidance, ABS, intelligent rollover warning systems, active yaw control systems, vehicle stability control (VSC), intelligent speed adaptation, electronic stability control (ESC), brake assistance, traction control, vehicle dynamics integrated management, and seat belt pre-tensioning control
3. Controllable Suspension Development: active and semi-active suspensions for improving vehicle ride and handling of on- and off-road vehicles, and
4. Advanced Propulsion Control Systems: vehicle electrification, fuel economy improvement, emission control, and drivability enhancement

for both passenger and commercial vehicles.

Organizer: **Dr. Xubin Song**
Eaton Corp.
E-mail: XubinSong@eaton.corp

Co- Organizer: **Dr. Beshah Ayalew**
Clemson University
E-mail: besah@CLEMSON.EDU

Symposium 5: Advances in non-conventional, energy efficient and environmentally friendly vehicles (HEVs etc.)

The recent hikes in fuel prices as well as growing environmental concerns have drawn renewed interest on research and development of more energy efficient vehicles. This session emphasizes but is not limited to the design, analysis and optimization of hybrid vehicles (including hybrid hydraulic and electric vehicles) and fuel cell vehicles (FCVs). Examples of topics include innovative controls and energy management strategies; new component or sub-assembly designs, including power electronics and electrochemical/hydro-pneumatic energy storage systems; hydrogen storage systems; PV cell design and optimization, regenerative braking systems, implications to vehicle dynamics, and the analysis of environmental impact.

Organizer: **Dr. Ming Cao**
General Motors
E-mail: ming.cao@gm.com

Co-Organizer: **Dr. Joel Anstrom**
Penn State University
E-mail: janstrom@enr.psu.edu

All submissions must be made through the conference website:
<http://www.asmeconferences.org/IDETC09>. Important deadlines include

Abstract Due:	02/06/2009	(firm date)
Draft Paper Due:	02/13/2009	
Review Completion:	04/03/2009	
Acceptance Notification:	04/24/2009	

Copyright Form Due: 04/24/2009 (ASME to confirm)

Final Paper Due: 05/14/2009

Publication in the conference proceedings is not guaranteed if all the documents are not received by May 15, 2009.