

Call For Papers

17th International Conference On ADVANCED VEHICLE TECHNOLOGIES

2015 ASME International Design Engineering Technical Conference (IDETC) August 2-5, 2015 in Boston, MA

Sponsored by: Vehicle Design Committee

Technical Research Areas: The Vehicle Design Committee (VDC) of the ASME Design Engineering Division (DED) is organizing an annual International Conference on Advanced Vehicle Technologies (AVT). Papers are invited on innovative analytical, computational, and experimental investigations in the design of full vehicle systems and their sub-systems, as well as on studies for safety and ergonomics, powertrains, alternative fuels, and intelligent transportation systems. Papers may address fundamental research, applied research, or successful implementations relating to light or heavy vehicle modeling, design, control, testing, or development.

<p>Conference Chair: Dr. Xubin Song Eaton Corporation / Vehicle Group 26201 Northwestern Highway Southfield, MI 48076 Phone: (248) 226-1738 Email: XubinSong@eaton.com</p> <p>Conference Co-Chair: Dr. Lei Zuo Virginia Tech 311 Durham Hall (0261) 1145 Perry Street Blacksburg, VA 24061 Phone: (540) 231-7270 Email: leizuo@vt.edu</p>	<p>Program Chair: Dr. Beshah Ayalew Clemson University-International Center for Automotive Research 4 Research Drive, 342 CGEC Greenville, SC 29607 Phone: (864) 283-7228 Email: besah@clmson.edu</p>
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Symposium 1: Advances in Ground Vehicles Dynamics and Controls

Topics include advanced modeling methods and controls of multi-physics systems and multi-body dynamics, experimental evaluation and model validation tests, and advanced analytical and computational methods. Papers in the general area of dynamics and controls applications to vehicle systems and subsystems are welcome (powertrains, ABS systems, active and semi-active suspension, intelligent rollover warning systems, active yaw control systems, emission control, vehicle drivability, intelligent transportation systems, and advanced propulsion control systems).

Organizer: Dr. Vladimir V. Vantsevich: vantsevi@uab.edu
University of Alabama at Birmingham

Co- Organizer: Dr. Corina Sandu: csandu@vt.edu

Symposium 2: Advances in Methods for Tire Design and Mechanics

Topics relate to analytical, numerical, experimental studies of nonlinear behavior of tires and wheels including, but not limited to: static/dynamic stress analysis, nonlinear material modeling, contact stress, impact, noise, vibration, traction, hydroplaning, performance evaluation, rolling resistance, handling, and durability. Tires of all sizes are of interest, for both on-road and off-road applications.

Organizer: **Dr. Moustafa El-Gindy:** moustafa.el-gindy@uoit.ca
University of Ontario Institute of Technology

Co-Organizer: **Dr. Jaehyung Ju:** Jaehyung.Ju@unt.edu
University of North Texas

Symposium 3: Advances in Ground Vehicle Safety and Ergonomics

Topics include vehicle active safety such as adaptive cruise control, forward collision warning, lane departure warning or prevention, V2x technology developments, and passive safety developments of crashworthiness designs, accident reconstructions, restraint systems development & integration and robust structures for occupant and pedestrian protection during impacts (including under-body blast events). Other areas of research interest include the response and tolerance of the human body to vibration and impact, driver assistance systems, digital human modeling, human factors and driver behavior, critical technologies for future electronic certification of vehicle safety, driver fatigue prediction, long distance driving comfort, biomechanics studies, experimental and computational analysis of ride comfort, and prediction of comfort levels.

Organizer: **Dr. Costin Untaroiu:** costin@vt.edu
Virginia Tech

Co-Organizer: **Mr. Alan Mayton:** amayton@cdc.gov
NIOSH, Pittsburgh Research Lab,
Dr. James Yang: james.yang@ttu.edu
Texas Tech University
Dr. Yan Fu: yfu4@ford.com
Ford Motor Company

Symposium 4: Advances in Methods for Ground Vehicle Systems Design

Topics refer to optimal, reliable, and robust design of vehicles and their subsystems, including, but not limited to design of suspension systems, powertrain design, braking systems designs, integrated (mechatronics) systems development, and engineering applications referring to vehicle design.

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

Co-Organizer: **Dr. Lei Zuo:** leizuo@vt.edu
Virginia Tech

Symposium 5: Advances in Vehicle Electrification and Powertrain Design

This symposium focuses on state-of-the-art research and development as well as future trends in the design, modeling, control, system integration and optimization of conventional and alternative energy propulsion and vehicular systems such as electric (EV), hybrid electric (HEV) and plug-in hybrid electric vehicles (PHEV), bio-fuel vehicles, LPG or CNG vehicles. Topics of interest also include energy storage and motor/power electronics components/systems, design and integration of the conventional and alternative energy propulsion and advanced vehicular systems, and state-of-the-art engine modeling and technology.

Organizer: **Dr. Joel Anstrom:** janstrom@engr.psu.edu
Penn State University

Co- Organizer: **Dr. Guang Dong:** GDong@teslamotors.com
Tesla Motors, Inc.

Dr. Henry Zhang: hhzhang@purdue.edu
Purdue University

Symposium 6: Advances in Light Vehicles Design

Topics of the symposium are advanced modeling, simulation, testing, and identification methods for light vehicles including motorcycles, bicycles, three-wheeled vehicles and small cars. The focus is on the performance and dynamic response of the whole system, on the mechanical properties of the subsystems of the vehicle (chassis, tires, suspensions) and on the man-machine interaction including passive response of the rider's body and active rider control. Topics of interest also include engines and electric motors for light vehicles, passive and mechatronic systems for the improvement of safety.

Organizer: **Dr. Alberto Doria:** alberto.doria@unipd.it
University of Padova-Italy

Co-Organizer: **Dr. Liangyao Yu:** lyl@tsinghua.edu.cn
Tsinghua University

Symposium 7: Advances in Military and Commercial Ground Vehicle Design

Topics include analytical computations, modeling & simulation, experimental and model validation test, design/analysis, and control methods for system/sub-system/components of military and commercial ground vehicles which includes, but are not limited to multi-body dynamics, vehicle performance evaluation metrics development, on- and off-road mobility and stability, convoy mobility for single- and multi-unit military or commercial vehicles, vehicle survivability in severe environments, occupant safety (from blast and projectile armaments) during military events, etc. The vehicles may include logistical vehicles, military vehicles, heavy-duty for commercial/agricultural applications, all-terrain wheeled, tracked and unmanned ground vehicles, etc.

Organizer: **Mr. Jeremy P. Gray:** jeremy.p.gray.civ@mail.mil
U.S. Army RDECOM-TARDEC

Co-Organizer: **Dr. Ram S. Krishnamachari:** krishnam@gdls.com
General Dynamics, Land Systems

Dr. Brendan Chan: brendan.chan@navistar.com
Navistar, Inc.

Dr. Xiaobo Yang: xyang@oshkoshcorp.com
Oshkosh Corp.

A **Best Paper Award** and a **Student Best Paper Award** (for papers authored and submitted by student as the primary author) will be awarded to the papers in the conference that best exemplify the research and advance in ground vehicles engineering on the basis of reviewers and symposium organizers evaluations.

The two Best Paper Awards, each consisting of a **\$500 cash prize**, depending on availability of funding.

Additionally, the Vehicle Design Committee (VDC) of the ASME will support the **three** finalists of the **best student papers** (student must be the primary author submitting the paper) with student registration waivers (one for each paper).

The Vehicle Design Committee is honored to have Prof. J Karl Hedrick as lecturer for the **William Milliken Invited Lecture Award** at the 2015 AVT Conference. He will present ‘Recent Advances in Automotive Safety Systems’. Prof. Hedrick is ASME fellow and Member of the National Academy of Engineering

Two **keynotes** with the specialty focus on military vehicle safety will be organized as well. ‘Balanced Combat Vehicle Design Using Non-Linear Optimization and Multi-Attribute Utility Analysis (MAUA)’ will be offered by Mr. Steven Franz, Senior Director, General Dynamics Land Systems, while ‘The Protection of Mounted Warfighters from the Effects of Under-Body Blast – The Warrior Injury Assessment Mankin (WIAMan) Project’ by Mr. Randolph Coates, Manager of WIAMan program, Army Research Laboratory, Aberdeen, MA.

This is the overall publication schedule for IDETC/CIE 2015.

Author and Paper Registration

January 12, 2015

Note: Authors are requested to register and submit a tentative title and abstract by this deadline. For conference-specific information, please contact the [Technical Conference Chair or Program Chair](#) of your technical conference.

Submission of Draft Paper Review or Brief for Review

January 26, 2015

Note: In order to submit a draft paper or brief for review at this time, authors must first register and submit a tentative title and abstract, as described above.

Paper Reviews Completed

March 2, 2015

Initial Author Notification of Acceptance / Revision Requirements

March 16, 2015

Electronic Copyright Form Submission Process Opens

March 16, 2015

*Electronic Copyright transfer forms are **requested upon acceptance** of the draft or revised draft for full-length papers and prior to the submittal of the final paper for inclusion in the conference DVD.*

[Click here for ASME Copyright details.](#)

Submission of Revised Paper for Review (if required)

March 30, 2015

*Note: If you submitted a full-length draft paper and the review decision **required revisions** and a second stage of review, your revised draft paper must be submitted by this date. If your paper was **accepted** for inclusion in the conference with only suggested revisions, you only need to meet the April 20, 2015 deadline for final paper submission.*

Author Notification of Acceptance of Revised Paper

April 6, 2015

Submission of Copyright Form

April 17, 2015

*Electronic Copyright transfer forms are **requested upon acceptance** of the draft or revised draft for full-length papers and prior to the submittal of the final paper for inclusion in the conference DVD. [Click here for ASME Copyright details.](#)*

Submission of Final Paper

April 20, 2015

Note: In accordance with ASME [final paper requirements](#), papers WILL NOT APPEAR in the conference DVD if materials are received after this deadline. No final/revised papers will be accepted after April 20, 2015.