Call For Papers

18th International Conference On
ADVANCED VEHICLE TECHNOLOGIES

2016 ASME International Design Engineering Technical Conference (IDETC)
August 21-24, 2016, Charlotte, NC

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.

Conference Chair: Dr. Beshah Ayalew
Clemson University-International Center for Automotive Research
4 Research Drive, 342 CGEC
Greenville, SC 29607
Phone: (864) 283-7228
Email: beshah@clemson.edu

Program Chair: Dr. Lei Zuo
Virginia Tech
311 Durham Hall (0261)
1145 Perry Street
Blacksburg, VA 24061
Phone: (540) 231-7270
Email: leizuo@vt.edu

Program Co-Chair: Schalk Els
University of Pretoria
Department of Mechanical and Aeronautical Engineering
Private Bag X20
Hatfield 0028
South Africa
Email: schalk.els@up.ac.za

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
Virginia Polytechnic Institute and State University

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. Corina Sandu: csandu@vt.edu
Virginia Polytechnic Institute and State University

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: GDiDong@teslamotors.com
Tesla Motors, Inc.

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: vly@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: Dr. 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 evaluations of symposium organizers. The Best Paper Award each consists of a **$500 cash prize** per paper subject to availability of funds.

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 will continue the **William Milliken Award Lecture** at the 2016 AVT Conference. An outstanding practitioner or researcher will be invited as the 2016 Milliken Lecturer and award recipient. A separate second **Keynote** lecture is also planned.

A 3-hour technical seminar is also planned for the Sunday before the conference under the title: “Vehicle dynamics and mobility: understanding the future from the past.”

The following is the overall publication schedule for IDETC/CIE 2016. For up to date listing, please checkout this link: [http://www.asmeconferences.org/IDETC2016/PublicationSchedule.cfm](http://www.asmeconferences.org/IDETC2016/PublicationSchedule.cfm)

**Submission of Abstract**  
February 2, 2016  
*Note: The WebTool closes at 5:00 p.m. ET. 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 for Review**  
February 16, 2016  
*Note: The WebTool closes at 5:00 p.m. ET. 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 23, 2016

**Author Notification of Acceptance / Revision Requirements**  
April 6, 2016

**Electronic Copyright Submission Process Opens**  
April 6, 2016  
*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 online version.*  
*Click here for ASME Copyright details.*

**Submission of Revised Paper for Review (if required)**  
April 20, 2016  
*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, 2016 deadline for final paper submission.*

**Author Notification of Acceptance of Revised Paper**  
May 4, 2016

**Submission of Copyright Form**  
May 22, 2016  
*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 online version.*
Submission of Final Paper
May 25, 2016
Note: The WebTool closes at 5:00 p.m. ET. Final Papers cannot be submitted unless electronic copyright transfer forms have been received for all authors of the paper. Final papers must be correctly formatted in accordance with ASME final paper requirements. No final papers/revised final papers will be accepted after May 25, 2016.

Final Papers Available Online
August 19, 2015
The online version of all accepted final conference papers will be made available on August 19, 2016. Registered attendees as of August 16, 2016 will receive access information the same day the online site opens. All registrants after this date will receive an email during the conference based on a predetermined mailing schedule. Access is not immediate upon registration for the conference.