



Call for Papers

Expand your design and manufacturing engineering community by joining 1,000 other professionals at ASME's IDETC-CIE 2023 conference.

2023 Technical Tracks

25th International Conference on Advanced Vehicle Technologies (AVT)

43rd Computers and Information in Engineering Conference (CIE)

49th Design Automation Conference (DAC)

20th International Conference on Design Education (DEC)

28th Design for Manufacturing and the Life Cycle Conference (DFMLC)

35th International Conference on Design Theory and Methodology (DTM)

19th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA)

47th Mechanisms and Robotics Conference (MR)

17th International Conference on Micro- and Nanosystems (MNS)

19th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC)

2023 International Power Transmission and Gearing Conference (PTG)

35th Conference on Mechanical Vibration and Noise (VIB)



Call-for-Papers

25th International Conference On ADVANCED VEHICLE TECHNOLOGIES

2023 ASME International Design Engineering Technical Conference (IDETC)

August 20-23, 2023 – 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.

Conference Chair: Ole Balling

Aarhus University, Denmark
Department of Mechanical and Production
Engineering
Email: oba@mpe.au.dk

Program Chair: Angelo Bonfitto:

angelo.bonfitto@polito.it Politecnico di
Torino(Technical University), Italy

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, including engine and transmissions, passive and controlled driveline and torque vectoring systems, 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: **Siyuan (Hunter) Zhang:** zsy1010@uab.edu
University of Alabama at Birmingham

Co-Organizer: **Vladimir V. Vantsevich:**
vvantsevich@wpi.edu
Worcester Polytechnic Institute (WPI)

Symposium 2: Advances in Modelling and Testing of Tires and Tire-Terrain Interaction

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: **Hoda Mousavi:** hoda13@vt.edu
Virginia Tech

Co-Organizer: **Lin Li:** lin.li@nikolamotor.com
Nikola Corporation

Co-Organizer: **Mostafa Yacoub:** mostafa.yacoub@mtc.edu.eg
Military Technical College, Cairo, Egypt

Co-Organizer: **Zeinab El-Sayegh:** Zeibab.el-sayegh@uoit.ca
Ontario Tech University, Canada

Symposium 3: 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: **Massimiliano Gobbi:** massimiliano.gobbi@polimi.it
Politecnico di Milano (Technical University), Italy

Co-Organizer: **Lin Xu:** xulin508@whut.edu.cn
Wuhan University of Technology, China

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

Symposium 4: 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, safety concepts in autonomous vehicles, driver fatigue prediction, long distance driving comfort, biomechanics studies, experimental and computational analysis of ride comfort, and prediction of comfort levels.

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

Co-Organizer: **James Yang** james.yang@ttu.edu
Texas 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), fuel cell vehicles, 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: **Joel Anstrom:** janstrom@engr.psu.edu
Penn State University

Co-Organizer: **Angelo Bonfitto:** angelo.bonfitto@polito.it
Politecnico di Torino(Technical University), Italy

Co-Organizer: **Venkat Ramakrishnan:** venkat.ramakrishnan@fcagroup.com
FCA Group

Symposium 6: Advances in Light Vehicles Design

Topics of the symposium are advanced modeling, simulation, testing, and identification methods for light vehicles including bicycles, motorcycles, 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, and vibration energy harvesting devices.

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

Co-Organizer: **Luis Munoz:** lui-muno@uniandes.edu.co
Universidad de los Andes, Colombia

Symposium 7: Advances in Off-road, Agriculture, Military and Commercial Ground Vehicle Design and Testing

Topics include modeling and simulation, verification and validation using physical testing and/or virtual representations. Design, analysis and control methods for system/subsystem/components of commercial and military ground vehicles, which includes but are not limited to multi-body dynamics, terramechanics, 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 and payload 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. Progress and research in verification and validation studies of vehicle and sensor models and their virtual representation for unmanned and autonomous ground vehicle systems in on- and off-road environments are also encouraged.

Organizer: **Ole Balling:** oba@eng.au.dk
Aarhus University, Denmark

Organizer: **Corina Sandu:** csandu@vt.edu
Virginia Tech

Co-Organizer:

Peijun Xu:

pxu@ebcoinc.com

Ebco Inc.

Symposium 8: Advances in Intelligent Vehicles

This symposium relates to state-of-the-art research and future trends for connected and autonomous vehicles. The topics include, but are not limited to: design of autonomous vehicles including advanced actuators and sensors; communications and networking (V2V, V2I, V2X) for connected vehicles; wireless technologies for connected vehicles; networked information processing, decision-making, and intelligent control; safe driving and accident avoidance; intelligent transportation, vehicle traffic modeling, decentralized congestion control, highway automation and platooning; cooperative driving and traffic management; vision and image processing; vehicle environment perception; pattern recognition for vehicles; automatic navigating control; driver behavior analysis and autonomous cooperative driving

Organizer:

Liangyao Yu: yly@tsinghua.edu.cn

Tsinghua University, China

Co-Organizer:

Guangqiang Wu: wuguangqiang@tongji.edu.cn

Tongji University Shanghai, China

A **Best Paper Award** and a **Student Best Paper Award** (for papers authored and submitted by student as the primary author) will be awarded for conference papers that best exemplify the research advances in ground vehicle engineering based on technical reviews and evaluations of symposium organizers. Each Best Paper Award consists of a **\$500 cash prize** per paper subject to availability of funds. Best paper Finalists are encouraged to submit an enhanced version to the ASME Journal of Mechanical Design.

The Vehicle Design Committee will continue the **William Milliken Lecture Award** at the 2023 AVT Conference.

IDETC-CIE 2023

International Design Engineering Technical Conferences & Computers and Information in Engineering Conference

In-Person Event

Boston Park Plaza, Boston MA | August 20–23, 2023

43rd Computers and Information Engineering Conference (CIE)

CALL FOR PAPERS

<https://event.asme.org/IDETC-CIE>

The CIE Division is excited to put out a call for papers for the 43rd CIE Conference, to be held in August 20-23, 2023, Boston Park Plaza, Boston, MA, USA. All five CIE tracks are soliciting papers in all aspects of computer applications on experimental, numerical, or analytical studies, with emphasis on the highlighted topic areas.

TRACKS SYMPOSIUM

- Advanced Modeling and Simulation (AMS)
- Computer-Aided Product and Process Development (CAPPD)
- Virtual Environments and Systems (VES)
- Systems Engineering Information Knowledge Management (SEIKM)
- Artificial Intelligence+Machine Learning (AI+ML) Approaches for Engineering

TRACK SYMPOSIUM TOPICS

- CIE-01 AMS: Advanced Modeling and Simulation (AMS General)
- CIE-02 AMS: Inverse Problems in Science and Engineering
- CIE-03 AMS: Computational Multiphysics Applications
- CIE-04 AMS: Uncertainty Quantification in Simulation and Model Verification & Validation
- CIE-05 AMS: Simulation in Advanced Manufacturing
- CIE-06 AMS: Material Characterization Methods and Applications
- CIE-07 CAPPD: Computer-Aided Product and Process Development (CAPPD General)
- CIE-08 CAPPD: Human-in-the-Loop Product Design and Automation
- CIE-09 CAPPD: Digital Human Modeling for Design and Manufacturing
- CIE-10 CAPPD: Product & Process Design Automation for Industry 4.0
- CIE-11 CAPPD: Data-driven Product Design and Fabrication
- CIE-12 SEIKM: Systems Engineering Information Knowledge Management (SEIKM General)
- CIE-13 SEIKM: Design Informatics
- CIE-14 SEIKM: Systems Engineering and Complex Systems
- CIE-15 SEIKM: Knowledge Capture, Reuse, and Management
- CIE-16 SEIKM: Smart Manufacturing Informatics
- CIE-17 SEIKM: Advanced Manufacturing for Bioeconomy and Circular Economy
- CIE-18 VES: Designing User Experiences for Virtual Environments
- CIE-19 VES: Virtual Systems for Engineering Applications
- CIE-20 VES: VES Show-and-Tell
- CIE-27 AI + ML Approaches for Engineering (General)

CIE JOINT TOPICS

- CIE-21 AMS-CAPPD: Digital Twin: Advanced Human Modeling and Simulation in Engineering
- CIE-22 AMS-SEIKM: Digital Twin Modelling and Analytics for Advanced Manufacturing
- CIE-23 AMS-SEIKM: Physics-Informed Machine Learning for Design and Advanced Manufacturing
- CIE-24 SEIKM-AMS: Artificial Intelligence and Machine Learning in Design and Manufacturing
- CIE-25 AMS-CAPPD-SEIKM: Design, Simulation and Optimization for Additive Manufacturing
- CIE-26 Graduate Student Poster Symposium

CIE SPECIAL SESSION

- VES: JCISE Spotlight Talks on Extended Reality in Design and Manufacturing

Selected papers will be published in ASME *Journal of Computing and Information Science in Engineering* (JCISE). Five Best Papers will be awarded, including CIE Conference Best Paper and AMS, CAPPD, SEIKM and VES Best Paper.

IDETC-CIE WORKSHOPS/TUTORIALS

Please consider the opportunity to submit a proposal for organizing a workshop or tutorial in ASME IDETC-CIE 2023. The submission form can be found at: <https://event.asme.org/IDETC-CIE/Program/Workshop-Tutorial-Proposals>

CONFERENCE ORGANIZERS

CONFERENCE CHAIR: Caterina Rizzi
University of Bergamo
Bergamo, Italy, caterina.rizzi@unibg.it

PROGRAM CHAIR: Robert Wendrich
Rawshaping Technology RBSO
The Netherlands, robert@rawshaping.com

IMPORTANT DATES

- **SUBMISSION OF ABSTRACT FULL-LENGTH PAPER FOR REVIEW**
March 13, 2023
- **PRESENTATION ONLY AND POSTER SUBMISSION**
April 10, 2023
- **PAPER REVIEW COMPLETE**
April 17, 2023
- **DRAFT PAPER AND PRESENTATION ONLY/POSTER EXTENDED ABSTRACT DECISION NOTIFICATION**
April 24, 2023
- **SUBMISSION OF COPYRIGHT FORM**
May 12, 2023
- **FINAL PAPER SUBMISSION**
May 15, 2023

We invite you to join us on August 20–23, 2023, at the 49th Design Automation Conference (DAC). The event aims to share state-of-the-art research, expand cooperation among participants, and promote all areas of design automation related to engineered mechanical systems. Papers in all areas of design automation are welcome, and papers with examples from industrial practice are strongly encouraged. *Presentation-only submissions will be accepted for the 49th DAC.*

For more information on the DAC and IDETC Conferences, respectively, please visit the below websites:

<https://www.designautomationconference.org/>

<https://event.asme.org/IDETC-CIE>

Christopher McComb
2023 DAC Conference Chair

Chao Hu
2023 DAC Program Chair

Important Dates (2023)

March 13:	Abstract and Full-Length Manuscript Submission
April 10:	<i>Presentation-only Extended Abstract Submission*</i>
April 17:	Paper Reviews Completed
April 24:	Author Notification of Acceptance
May 12:	Submission of Copyright Form
May 15:	Final Paper Submission
August 20-23:	Conference

** Please note that submission deadlines are firm and are unlikely to change.*

Session Topics:

DAC-1:	Control Co-Design
DAC-2:	Artificial Intelligence and Machine Learning for Challenging Real-World Problems in Design Automation
DAC-3:	Novel AI or ML Frameworks for Design or Systems Science
DAC-4:	Data-Driven Design
DAC-5:	Decision Making in Design
DAC-6:	Design and Optimization of Energy Systems
DAC-7:	Design for Additive Manufacturing
DAC-8:	Design for Market Systems
DAC-9:	Design for Resilience and Failure Recovery
DAC-10:	Design of Complex Systems
DAC-11:	Design of Engineering Materials and Structures
DAC-12:	Engineering for Global Development
DAC-13:	Geometric Modeling and Algorithms for Design and Manufacturing
DAC-14:	Metamodel-Based Design Optimization
DAC-15:	Multidisciplinary Design Optimization, Multi-objective Optimization, and Sensitivity Analysis
DAC-16:	Platform Architecture and Product Family Design
DAC-17:	Design and Decision Making Under Uncertainty
DAC-18:	Computational Design for Biomedical Applications
DAC-19:	Human-Artificial Intelligence Collaboration in Engineering System Design
DAC-20:	Design of Autonomous Systems
DAC-21:	Evolving Cyber-Physical-Social Systems
DAC-22:	Special Session with DFMLC: Modeling and Optimization for Sustainable Design and Manufacturing
DAC-23:	The Automation of Artistic and Creative Design
DAC-24:	Uncertainty Quantification of Machine Learning Models for Data-Driven Design
DAC-25:	AI-Driven Design Innovation

** PO submissions can be made to any session in the DAC conference. A 2-page extended abstract following the ASME template is required. Abstract must provide sufficient preliminary results and discussion to allow evaluation of quality. At most one PO submission can be made by one presenter. PO extended abstracts do not appear in proceedings, have no DOI, and do not require ASME copyright.*

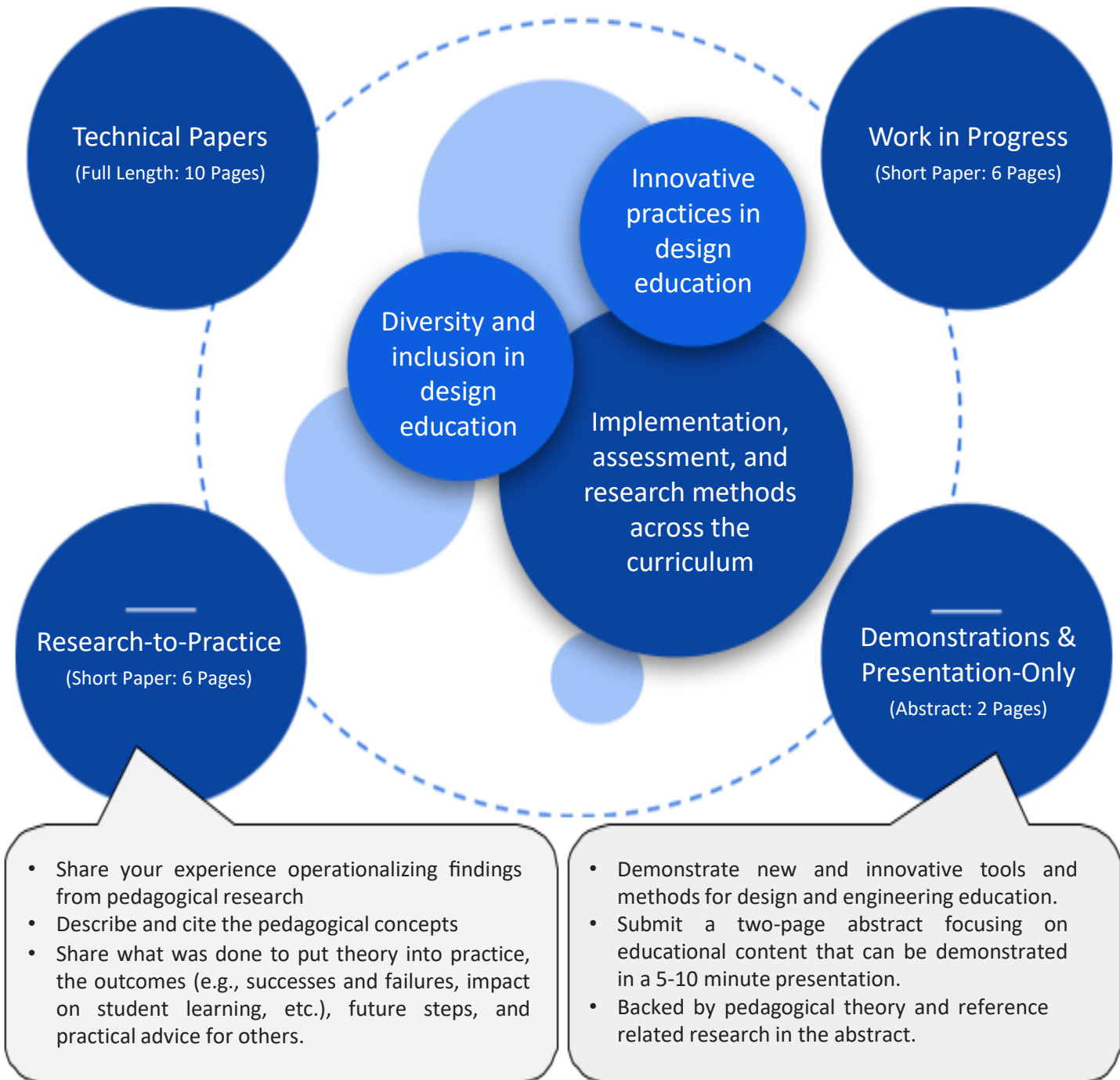
ASME 2023 IDETC/CIE Conference

19th International Conference on Design Education

Submissions via <https://event.asme.org/IDETC-CIE>



The Design Education Committee invites submissions from researchers, educators, and practitioners from higher ed, K-12, and industry to the 19th International Conference on Design Education (DEC) to be held as part of ASME's IDETC/CIE Conferences in Boston, MA. Authors are invited to submit full length technical papers, "short papers", and presentation only submissions in themes including but not limited to: implementation, assessment and research methods across the curriculum; diversity and inclusion in design education; and innovative practices in design education. This year we have added two new ways to participate. For more details about the DEC symposia see below and visit the DEC website: <https://bit.ly/ASMEdec>



Nicholas Meisel
nam20@psu.edu
DEC Conference Chair 2023

For more details on DEC
visit our website
<https://bit.ly/ASMEdec>

Rahul Renu
rrenu@fmarion.edu
DEC Program Chair 2023

International Design Engineering Technical Conferences & Computers and Information in Engineering Conference



In-Person Event

Boston Park Plaza, Boston MA

August 20–23, 2023

Dear colleagues, we invite you and your students to submit **full-length technical papers** and **presentation-only submissions** to the 28th Design for Manufacturing and the Life Cycle Conference (DFMLC) at the ASME 2023 IDETC & CIE Conference in Boston (August 20th-23rd). Submissions are invited for the following sessions.

- DFMLC-1: Life Cycle & Human Factors Decision Making
- DFMLC-2: Modeling and Optimization for Sustainable Design and Manufacturing (*Joint Session with DAC*)
- DFMLC-3: Design for Supply Chain and End of Life Recovery
- DFMLC-4: Design for Manufacturing and Assembly
- DFMLC-5: Design for Additive Manufacturing
- DFMLC-6: Design for Large and Distributed Systems
- DFMLC-7: Design of Product-Service and Energy Systems
- DFMLC-8: Design Tool & Commercialization Showcase
- DFMLC-9: DfAM Principles and their Education (*Joint Session: DTM, DEC*)

More details on the submission process can be found at:

<https://event.asme.org/IDETC-CIE>. The deadline for abstract and full-length paper submission is **13 March, 2023**. Selected high-quality conference papers submitted to DFMLC 2023 will be nominated for fast-track review and publication in the **ASME Journal of Mechanical Design Special Issue on “Selected Papers from IDETC 2023”**.

On behalf of the DFMLC Technical Committee,

Dr. Daniel Cooper, DFMLC 2023 Conference Chair, drcooper@umich.edu

Dr. Paul Egan, DFMLC 2023 Program Chair, Paul.Egan@ttu.edu

Dr. Albert Patterson, DFMLC 2023 Special Session Chair,

aepatterson5@exchange.tamu.edu



ASME 2023 IDETC/CIE Conference 35th Design Theory and Methodology Conference

Call for Papers

Researchers and practitioners are invited to join us for the 35th International Conference on Design Theory and Methodology (DTM) to be held from August 20 to 23, 2023 in Boston, MA, USA. The conference will explore a variety of topics related to the design of mechanical systems and products.

Conference themes are clustered around: Design Theory, Design Methods, Design People, and Design Practice. Papers in other areas of design theory are also welcome.

Vimal Viswanathan
vimal.viswanathan@sjsu.edu
2023 DTM Conference Chair

Rahul S. Renu
rrenu@fmarion.edu
2023 DTM Program Chair



<https://event.asme.org/IDETC-CIE>

- **Design Theory:** New Models, Constructs, and Explanations; New Impacting Trends
- **Design Methods:** Prototyping, Imagery, & Other Representations; Biologically Inspired Design; Creativity and Ideation
- **Design People:** Entrepreneurship & Teams; Designer/Human Behavior in Design; Design Decision Making
- **Design Practice:** Design of Complex Systems; Inclusive Design; Engineering for Global Development
- **Joint Session with DFMLC and DEC:** DfAM Principles and their Education

Submission: March 13, 2023
Notified Acceptance: April 24, 2023
Copyright Submission: May 12, 2023
Final Submission: May 15, 2023

IDETC-CIE 2023
INTERNATIONAL DESIGN ENGINEERING TECHNICAL
CONFERENCES & COMPUTERS AND INFORMATION IN
ENGINEERING CONFERENCE

MESA 2023

BOSTON PARK PLAZA,
BOSTON MA. USA
IN-PERSON EVENT

20>23
AUGUST

CALL FOR PAPER

The 19th ASME/IEEE International Conference
on Mechatronic and Embedded Systems and Applications

OBJECTIVES

The goal of the 19th ASME/IEEE MESA 2023 is to bring together experts from the fields of mechatronic and embedded systems, disseminate the recent advances in the area, discuss future research directions, and exchange application experience. MESA 2023 will especially bring out and highlight the latest research results and developments in Industry 4.0 and Artificial Intelligence (AI) in the fields of mechatronics and embedded systems.

SYMPOSIA

- MESA-1 Artificial Intelligence and Emerging Technologies for Mechatronics and Embedded Systems
- MESA-2 Bio-Inspired Robotics and Soft Robotics
- MESA-3 Robotics and Mobile Machines
- MESA-4 Mechatronic and Embedded Systems for Agriculture 4.0
- MESA-5 Disturbance Rejection Control
- MESA-6 Mechatronics and Embedded Systems Applications
- MESA-7 Embedded Vision and Ambient Intelligence
- MESA-8 Mechatronics and Industry 4.0
- MESA-9 Smart Cyber-Physical Systems
- MESA-10 Sensors and Actuators
- MESA-11 Mechatronics and Embedded Systems Education
- MESA-12 Micro-/Nano-Manipulation Technologies and Applications
- MESA-13 Fractional Derivatives and Their Applications
- MESA-14 Unmanned Vehicle Technologies and Applications
- MESA-15 Bio-Mechatronics - Medical Devices & Technologies
- MESA-16 Mechatronics and Embedded Technologies in Intelligent Transportation Systems

ORGANIZING COMMITTEE

General Chair

Prof. Adriano Mancini, Univ. Politecnica delle Marche, Italy

Program Chair

Prof. Matteo Palpacelli, Univ. Politecnica delle Marche, Italy

Chair of the Honors & Awards Committee

Zuomin Dong, Univ. of Victoria, Canada

Steering Committee Chairs

Prof. Abhijit Nagchaudhuri, Univ. of Maryland Eastern Shore, USA

Prof. Po Ting Lin, NTUST - Taiwan Tech, Taiwan

Prof. Harry H. Cheng, Univ. of California, Davis, USA

Prof. YangQuan Chen, Univ. of California, Merced, USA

Prof. Primo Zingaretti, Univ. Politecnica delle Marche, Italy

Prof. Martin Horauer, UAS Technikum Wien, Austria

Prof. Bo Chen, Michigan Technological University, USA

IMPORTANT DATES

Submission of full-length paper	13-Mar-2023
Author notification of acceptance	17-Apr-2023
Submission of copyright form	12-May-2023
Submission of final paper	15-May-2023

WEB-SITE

<https://event.asme.org/IDETC-CIE>

ORGANIZER



CO-ORGANIZERS



PAPER SUBMISSION

Manuscripts should be at most ten (10) pages. More instructions are available through the conference web-site on the AUTHOR RESOURCES > Conference Specific Information and Templates. Accepted papers are submitted for indexing to Scopus, Compendex, ISI Conference Proceedings Citation Index, and other major indexes.



CALL FOR PAPERS

17th International Conference on Micro- and Nano-systems (MNS) *The Next Advances in MEMS*

To be held in conjunction with the
ASME 2023 International Design Engineering
Technical Conferences
20-23
August 2023

Conference Chair:

Prof. Najib KACEM

FEMTO-ST Institute

Email: najib.kacem@femto-st.fr

Conference Description

This conference, sponsored by the Technical Committee of Micro and Nano-systems (MNS), an integral part of the ASME Design Engineering Division, will provide researchers in industry, academia, and government a forum to exchange scientific and technical information related to recent developments and emerging issues in the design, mechanics, dynamics, control, and fabrication of micro- (MEMS) and nano-scale (NEMS) systems. Manuscripts are solicited from experimental, computational, and theoretical studies. Submissions from researchers both within and outside of the traditional mechanical engineering community are strongly encouraged to submit their work. Scheduled symposia in 2023 include:

MNS-1: Nonlinear Dynamics and Vibrations of MEMS and NEMS (MNS/MSNDC/VIB)

MNS-2: Micro/Nano Bioengineering

MNS-3: Micro/Nano Robotics and Functional Materials

MNS-4: Micro/Nano IoT, Sensors and Computing

MNS-5: Micro/Nano Power Sources and Storage

Abstracts and Papers Submission

Draft conference papers (which include the expectation to present a technical presentation) submissions are due by **Feb. xx, 2023**. Manuscripts will be peer reviewed, authors will have opportunity to make edits, and accepted manuscripts will be published in the conference proceedings. Researchers interested in presenting their work without submitting a paper can submit an “extended abstract” for their talk, that is at least one page, and will not be published in the proceedings. Novel design ideas and early results will be considered for both technical papers and presentations. All submitted papers will automatically be considered for the Best Paper Award competition.

March 13: Draft paper submission deadline

April 10: Extended abstract deadline

April 17: Draft paper review completed

April 24: Paper author notification of decision

May 12: Submission of copyright form

May 15: Final paper submission

The full publication schedule is available at:

<https://event.asme.org/IDETC-CIE>

19th ASME International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC)

as part of ASME IDETC-CIE

August 20-23, 2023
Boston Park Plaza, Boston, MA

We cordially invite you to contribute to the **19th ASME International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC)**, to be held during the **ASME 2023 IDETC/CIE**, August 20–23, 2023 in Boston, MA.

MSNDC is a premier meeting event for professional networking and research exchange across the multibody systems and nonlinear dynamics technical community. The conference facilitates the dissemination of fundamental and applied research in the areas of multibody systems and nonlinear dynamics.

<https://event.asme.org/IDETC-CIE>

<https://sites.google.com/view/2023-asme-msndc-conference>

Event Highlights:

- **Student Paper Competition** with **Cash Prizes** provided by the TC-MSND
1st place: **\$1,500**, 2nd place: **\$1,300**, 3rd place: **\$1,000**, and more prizes to come!
- All full-length papers will be considered for the **MSNDC Best Paper Award Competition**
- Selected papers will be published in a Special Issue of the ASME Journal of Computational and Nonlinear Dynamics

Keynote Lecturers:

- Aki Mikkola, LUT University, Finland
- Arvind Raman, Purdue University, United States
- 2023 Lyapunov award lecture (TBA)

Topics:

- Computational Methods and Software Tools in Multibody Systems and Nonlinear Dynamics
- Flexible Multibody Dynamics
- Contact Dynamics and Jointed Structures
- Nonlinear Dynamics of Systems and Structures
- Modeling and Simulation of Vehicle Dynamics and Mobility
- Machine Learning in Dynamics and Vibrations
- Time-delay, Time-varying, and Discontinuous Dynamical Systems
- Motion Planning, Dynamics, and Control of Robots
- Optimization, Sensitivity Analysis, and Uncertainty Quantification in Dynamic Systems
- Nonlinear and Computational Dynamics Aspects in Biomechanics
- Dynamics and Control of Smart Structures and Systems
- Dynamics of Rotating Systems
- Nonlinear Dynamics and Vibrations of MEMS and NEMS
- Industry Applications of Vibration, Acoustics, and Dynamics

Important Dates:

- Full-length paper submission: **March 13, 2023**
- Presentation-only abstract submission: **April 10, 2023**

Conference Organizers:

Conference Co-chairs:

Hiroyuki Sugiyama, University of Iowa, hiroyuki-sugiyama@uiowa.edu

Pierpaolo Belardinelli, University of Marche, Italy, p.belardinelli@univpm.it

Program Co-chairs:

Kiran X. D'Souza, Ohio State University, dsouza.60@osu.edu

Grzegorz Orzechowski, LUT University, Finland, grzegorz_orzechowski@lut.fi

We look forward to seeing you in Boston!



47th Mechanisms and Robotics Conference call for papers

The Mechanisms and Robotics Technical Committee of the ASME Design Engineering Division invites you to submit papers to the 47th Mechanisms and Robotics Conference, the premier international forum started since 1952 for the exchange of technical and scientific information on the theory and application of mechanical systems, mechanisms, and robotics. Topics span areas central to design and analysis of mechanical, mechatronic, and robotic systems, including kinematics, dynamics, novel mechanisms and robots, software systems, educational practices, and various applications. Papers are particularly encouraged from the areas in soft-, flexible- and human-safe robots, reconfigurable mechanisms and robots, origami-based systems, rehabilitation and medical robots, and exoskeleton/prosthesis design and development and mechanism-based metamaterials.

Submitted papers will be eligible for the Mechanisms and Robotics Committee Best Paper Award, A. T. Yang Memorial Award in Theoretical Kinematics, and Compliant Mechanism awards. Authors of the strongest papers at the conference will also be invited to submit enhanced archival versions to an IDETC2023 Special Issue of the Journal of Mechanisms and Robotics.

Planned technical symposia for paper submissions are listed below.

- MR-1 Mechanism Synthesis & Analysis
- MR-2 Theoretical & Computational Kinematics
- MR-3 Compliant Mechanisms
- MR-4 Origami-Based Engineering Design
- MR-5 Motion Planning, Dynamics, and Control of Robots
- MR-6 Medical & Rehabilitation Robots
- MR-7 Novel Mechanisms, Robots & Applications
- MR-8 Soft and Continuum Mechanisms
- MR-9 Design, Analysis and Fabrication of Architected Materials and Structures (Abstract only)
- MR-10 Student Mechanisms and Robot Design Competition
- MR-11 Special Early Career Session of Invited Presentations
- MR-12 Keynote for the 47th Mechanisms and Robotics Conference

Dongming Gan, Ketao Zhang, Guangbo Hao, Yu She, Mark Plecnik

Conference organizing committee



ANNOUNCEMENT | CALL FOR PAPERS

2023 IDETC/CIE

International Design Engineering Technical Conferences
& Computers and Information in Engineering Conference

Power Transmission and Gearing (PTG)

August 20-23, 2023
Boston, MA, USA

<https://www.bostonparkplaza.com/>

- The Power Transmission and Gearing (PTG) Committee of the American Society of Mechanical Engineers, Design Engineering Division invites you to participate in the **ASME 2023 Power Transmission and Gearing Conference**. The conference will be held in conjunction with the ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conferences (IDETC/CIE) in **Boston Massachusetts on August 20-23, 2022**.

Power transmission and gearing researchers and engineers from around the world will be in attendance. The PTG Conference will provide attendees an opportunity to become familiar with the **latest research findings and applications that address critical engineering issues**.

- Authors and attendees are invited to participate in this premier international conference. This is a unique opportunity to disseminate your latest research findings to a global audience, and network with leading experts in the field. **Papers are solicited on all aspects of gear and power transmission technology** with a range of applications (aerospace, automotive, wind turbine, robotics and others).

Topics include but are not limited to:

- ▶ Gear Geometry
- ▶ Gear Analysis, Materials, Fatigue
- ▶ Gear Dynamics and Noise
- ▶ Gearbox Design, Reliability, and Diagnostics
- ▶ Gear Manufacturing
- ▶ Lubrication and Efficiency
- ▶ Bearings, Clutches, Couplings, and Splines
- ▶ Transmission Systems Including Novel Concepts

Visit the conference website at <https://event.asme.org/IDETC-CIE> to submit abstracts or papers, register, make hotel accommodations and find out more information.

Important Dates

DRAFT PAPER Submission (Published)

MARCH 13, 2023

PRESENTATION ONLY Abstract Submission

April 10, 2023

Author Notification of Acceptance/Revision Requirements

April 24, 2023

Submission of Copyright Form

May 12, 2023

Author Registration Deadline

May 15, 2023

Submission of Final Paper

May 15, 2023

Topic Organizers

- ▶ Gear Geometry
 - Prof. Alfonso Fuentes Aznar
 - afeme@rit.edu
- ▶ Gear Analysis, Materials, Fatigue
 - Dr. Hai Xu
 - hai.1.xu@gm.com
- ▶ Gear Dynamics and Noise
 - Prof. Ahmet Kahraman
 - kahraman.1@osu.edu
- ▶ Gearbox Design, Reliability, and Diagnostics
 - Prof. Murat Inalpolat
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Tech Committee on Power Transmission and Gearing (TC-PTG)

Topic Organizers

- ▶ Gear Manufacturing
 - Dr. Qi Fan
 - qfan@gleason.com
- ▶ Lubrication and Efficiency
 - Prof. Sheng Li
 - sheng.li@wright.edu
- ▶ Bearings, Clutches, Couplings, and Splines
 - Prof. David Talbot
 - talbot.11@osu.edu
- ▶ Transmission Systems Including Novel Concepts
 - Prof. David Talbot
 - talbot.11@osu.edu

Call for Papers – 2023 ASME Vibration and Noise Conference

35th ASME Conference on Mechanical Vibration and Noise (VIB)

Part of the ASME International Design Engineering
Technical Conferences (IDETC)

<https://event.asme.org/IDETC-CIE>

August 20-23, 2023

Boston Park Plaza, Boston MA

ASME Technical Committee on Vibration
and Sound (Design Engineering Division)

Description

VIB is a premier technical conference for the research and practice of vibration and sound engineering. An overall goal of the conference is to foster and promote the exchange of ideas and information among engineers and researchers in the vibration and sound community. The conference theme is deliberately broad, covering all aspects of vibratory systems. Papers are sought at the forefront of emerging fields, from traditional and non-traditional academic research, and those driven by industrial applications. Experimental, analytical, and computational studies are all welcome.

The Technical Committee on Vibration and Sound solicits papers for the following conference symposia:

Symposia

- VIB-1 J.P. Den Hartog, N.O. Myklestad and C.D. Mote, Jr. Award Talks
- VIB-2 Dynamics and Waves in Structures and Metamaterials
- VIB-3 Vibration and Stability of Mechanical Systems
- VIB-4 Energy Harvesting
- VIB-5 Origami-Inspired Engineering: Design, Dynamics, and Everything in Between
- VIB-6 Nonlinear Dynamics and Vibrations of MEMS and NEMS
- VIB-7 Contact Dynamics and Jointed Structures
- VIB-8 Industrial Applications of Vibration, Acoustics and Dynamics
- VIB-9 Rotating Systems and Rotor Dynamics
- VIB-10 Nonlinear Dynamics of Systems and Structures
- VIB-11 Machine Learning Applications in Vibrations and Dynamics
- VIB-12 Time-delay, Time-varying and Discontinuous Dynamical Systems
- VIB-13 Dynamics and Control of Smart Structures and Systems
- VIB-14 Dynamics of Biological, Bio-Inspired and Biomimetic Systems
- VIB-15 Gear Dynamics and Noise

Submission Types

VIB offers authors a choice between full-length paper submissions with presentation or presentation only contributions with extended abstracts. Full-length papers go through the peer review process and, if accepted, appear in the electronic conference proceedings and in citable, archival format through ASME. Extended abstracts (presentation only submissions) are limited to two-pages and are not published.

Deadlines

<u>Draft Paper for review:</u>	March 13, 2023
<u>Presentation only extended abstracts:</u>	April 10, 2023
<u>Decision notification:</u>	April 24, 2023
<u>Submission of copyright</u>	May 12, 2023
<u>Final Paper Submission:</u>	May 15, 2023
<u>Author registration</u>	May 15, 2023

Abstract and Paper Submission

Submit papers and extended abstracts at:
<https://idetccie2023.asmedigitalcollection.asme.org/>



IDETC-CIE 2023

International Design Engineering Technical
Conferences & Computers and Information in
Engineering Conference