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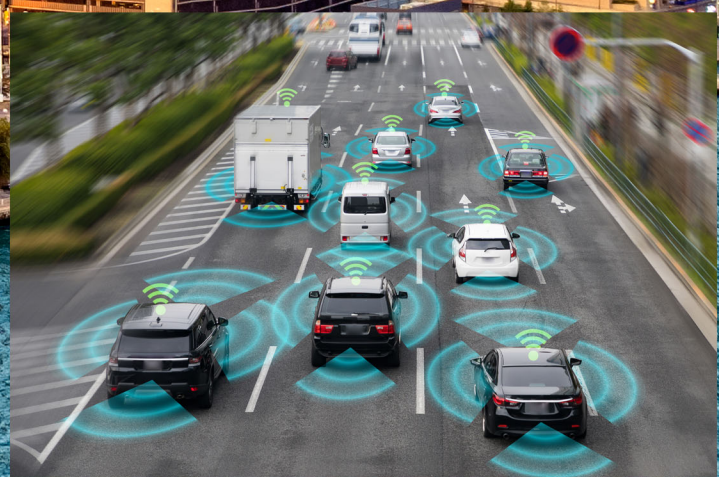
International Conference on Smart Mobility and Vehicle Electrification

Detroit, USA

VENUE



Host University
**Lawrence
Technological
University**



October 10-12, 2023

Sponsors and Partners



Organizer



IEOM Society

"Achieving and Sustaining Operational Excellence"

www.ieomsociety.org

Industrial Engineering and Operations Management Society International

IEOM Society International, 21411 Civic Center Dr., Suite 205, Southfield, Michigan 48076, USA
Phone: 1-248-450-5660, Email: info@ieomsociety.org

Welcome to the International Conference on Smart Mobility and Vehicle Electrification, Detroit, Michigan, USA, October 10-12, 2023

To All-Conference Attendees:

On behalf of the IEOM Society International, we would like to welcome you to the **International Conference on Smart Mobility and Vehicle Electrification** at Lawrence Technological University, Southfield, Michigan during October 10-12, 2023. Local Partners are ASQ Greater Detroit, Automation Alley, Eastern Michigan University, Engineering Society of Detroit (ESD), Kettering University, Lawrence Technological University and Wayne State University. The conference aims to provide a forum for academics, researchers and practitioners to exchange ideas and recent developments in the field of smart mobility and vehicle electrification. The conference is also expected to foster networking, collaboration and joint effort among the conference participants to advance the theory and practice as well as to identify major trends in EV.

This conference will address many of the issues concerning the vehicle electrification, smart mobility and charging infrastructure. IEOM Society is delighted to have the following keynote speakers at the Smart Mobility and EV Conference:

1. Prof. Tarek M. Sobh, Ph.D., P.E., President, Lawrence Technological University
2. Dr. Donna L. Bell, Executive Vice President – Product Creation, Engineering, and Supply Chain, Lordstown Motors
3. John Hawkins, Vice President, North America, Electrified Powertrain Technology, ZF Group, Farmington Hills, Michigan
4. Dr. Jorge Arinez, Lab Group Manager, Technical Fellow for Manufacturing Systems and Controls Research, GM Global Research and Development, Warren, Michigan, USA
5. Ankil Shah, Vice President, Materials R&D, Toyota Motor Corporation
6. Dr. Manzoor Hussain, Registrar and Professor of ME, Jawaharlal Nehru Technological University (JNTU), Hyderabad
7. Charon Morgan, Vice President of Engineering, Autoliv Americas, Auburn Hills, Michigan, USA
8. Dr. Manuel Montoya, General Director of the Automotive Cluster of Nuevo León (CLAUT), Monterrey, Mexico
9. Firasat Siddiqui, Director Product Strategy and Projects, Harman International, Novi, Michigan, United States
10. Frederic Flory, RO Director for Powertrain Electrification Mobility for North America, Valeo, Auburn Hills, Michigan
11. Snajaka Wirasingha, R&D Director-Americas, Electrified Mobility, Valeo, Auburn Hills, Michigan
12. Lokesh Setti, Flexible Vehicle Architecture Supervisor, Ford Motor Company, Dearborn, Michigan, United States
13. Alan Amici, President and CEO, Center for Automotive Research (CAR), Ann Arbor, Michigan, USA
14. Dr. Steven Marshall, Valeo, Auburn Hills, Michigan
15. Akim Khalef, Sustainable Feedstock & Recycling, FORVIA Faurecia, Auburn Hills, Michigan, United States
16. Dr. Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montréal, Canada
17. Dr. Mario Chauca, Research Professor of Academic Excellence at Ricardo Palma University, Lima, Peru

At this conference, IEOM Society will hold three panel sessions on EV, Smart Mobility and Charging Infrastructure as well as Diversity & Inclusion Panel sponsored by Ford Motor Company. Four workshops are arranged including: Geometric Dimensioning and Tolerancing (GD&T), Production Part Approval Process (PPAP), Integrated Problem Solving Approach – Design Thinking, DFSS, Shainin Red X, Six Sigma Workshop and Computer Aided Engineering.

The IEOM Society would like to express our deep appreciation to our sponsors, university partners, organization partners, authors, reviewers, keynote speakers, panelists, the local committee, and the many volunteers who have given so much of their time and talent to make this unique IEOM Smart Mobility and EV conference an overwhelming success.

We would like to extend a warm welcome to all participants in Detroit, Michigan. You can join tours of The Henry Ford – Museum, Greenfield Village & Rouge Factory, LTU Labs and Franklin Cidel Mill. Our very best wishes to all of you for great learning and memorable experiences.



Dr. Ahad Ali
Conference Co-Chair
Associate Professor and
Program Director of BSIE and MSIE
Lawrence Technological University
Executive Director, IEOM Society



Dr. Leslie Monplaisir
Conference Co-Chair
Associate Dean for Academic and Student
Affairs and Professor, Department of Industrial
and Manufacturing Engineering
Wayne State University, Detroit



Dr. Chan-Jin (CJ) Chung
Conference Co-Chair
Professor of Computer Science and
Founder of Robofest, Math + Computer
Science Department, Lawrence Tech
University



Steve Sibrel
Conference Co-Chair
Senior Supplier Quality Management,
Harman International
Novi, Michigan



Dr. Saso Krstovski, MB
Conference Co-Chair
Past Automotive University Programs
Manager
Past Automotive Lean Manufacturing
Manager / Six Sigma Master Black Belt



Kush Shah
Program Co-Chair
Chief Executive Officer, Global Organizational
Excellence Solutions LLC (GOES)
GM Fellow and ASQ Fellow
Michigan, USA



Professor Don Reimer
Program Co-Chair
Chief Operating Officer, IEOM Society
Adjunct Professor at Lawrence
Technological University
Southfield, Michigan, USA



Dr. Muhammad Sohail Ahmed
Program Co-Chair
Professor of Engineering Management,
School of Engineering
Eastern Michigan University
Ypsilanti, Michigan, USA

Keynote Speakers

Tuesday, October 10, 2023

Welcome Keynote Address: Tuesday, October 10, 10:00 am



Prof. Tarek M. Sobh, Ph.D., P.E.

President, Lawrence Technological University
 Professor of Electrical and Computer Engineering
 Distinguished Professor and Dean of Engineering Emeritus, University of Bridgeport
 Fellow, African Academy of Sciences
 Member, The Connecticut Academy of Science and Engineering

Professor Tarek M. Sobh received the B.Sc. in Engineering degree with honors in Computer Science and Automatic Control from the Faculty of Engineering, Alexandria University, Egypt in 1988, and M.S. and Ph.D. degrees in Computer and Information Science from the School of Engineering, University of Pennsylvania in 1989 and 1991, respectively. He served as Provost in 2021 and he is now the President and a Professor of Electrical and Computer Engineering at Lawrence Technological University, Michigan. He is Distinguished Professor and Dean of Engineering Emeritus at the University of Bridgeport, Connecticut.

He served as the University of Bridgeport (UB) Executive Vice President, Research and Economic Development, and the Founding Dean of the College of Engineering, Business, and Education (2018-2020), Interim Provost (2020), and Distinguished Professor of Engineering and Computer Science (2010-2020). He was the Founding Director of the Interdisciplinary Robotics, Intelligent Sensing, and Control (RISC) laboratory (1995-2020), the Founder of the High-Tech Business Incubator at UB (CTech IncUBator) (2010-2011), and the Founding Director of the UB Innovation Center (2019-2020). He was the Senior Vice President for Graduate Studies and Research (2014-2018), Vice President (2008-2014), Vice Provost (2006-2008), Dean of the School of Engineering (1999-2018), Interim Dean of the School of Business, Director of External Engineering Programs, Interim Chair of Computer Science and Computer Engineering, and Chair of the Department of Technology Management. He was a Professor of Computer, Electrical and Mechanical Engineering and Computer Science (2000-2010), an Associate Professor of Computer Science and Computer Engineering at the University of Bridgeport (1995-1999), a Research Assistant Professor of Computer Science at the Department of Computer Science, University of Utah (1992-1995), and a Research Fellow at the General Robotics and Active Sensory Perception (GRASP) Laboratory of the University of Pennsylvania from (1989-1991).

His background is in the fields of computer science and engineering, STEM Education, control theory, robotics, automation, manufacturing, AI, computer vision and signal processing. He has published over 275 refereed journal and conference papers, and book chapters in these and other areas, in addition to 27 books. Dr. Sobh served or currently serves on the editorial boards of 18 journals, and has served as Chair, Technical Program Chair and on the program committees of over 300 international conferences and workshops in the Robotics, Computer Vision, Automation, Sensing, Computing, Systems, Control, Online Engineering and Engineering Education areas. He has presented more than 150 keynote speeches, invited talks and lectures, colloquia and seminars at research meetings, University departments, research centers, and companies.

Professor Sobh has supervised over 50 award-winning graduate and undergraduate students working on different projects within robotics, prototyping, computer vision, control, and manufacturing; in addition to more than 300 undergraduate and graduate students working on their B.S. projects, Master's thesis or Ph.D. dissertations. Dr. Sobh is active in consulting and providing service to many industrial organizations and companies. He has consulted for several companies in the U.S., Switzerland, India, Malaysia, England, the United Arab Emirates, Kazakhstan and Egypt, to support projects in higher education, robotics, automation, manufacturing, sensing, and control. He has also worked at Philips Laboratories in New York, and a number of companies in Egypt. Dr. Sobh has been awarded over 60 research awards and grants to pursue his work in robotics, automation, STEM education, manufacturing, and sensing. Dr. Sobh is a Fellow of the African Academy of Sciences, a Fellow of the Engineering Society of Detroit, and a member of the Connecticut Academy of Science and Engineering. Dr. Sobh is a recipient of the ASEE Northeastern U.S. Distinguished Engineering Professor of the Year award, the IEEE Northeast Technological Innovation Research Award, an ACE Higher Education Award and several other merits in recognition of his educational, research, scholarly and service activities in engineering, education, computing and diversity initiatives. Dr. Sobh is a Licensed Professional Electrical Engineer (P.E.), a Certified Manufacturing Engineer (CMfgE) by the Society of Manufacturing Engineers, a Certified Professional Manager (C.M.) by the Institute of Certified Professional Managers at James Madison University, a Certified Reliability Engineer (C.R.E.) by the American Society for Quality, a member of Tau Beta Pi (Engineering Honor Society), Sigma Xi (Scientific Research Society), Phi Beta Delta (International Honor Society), Upsilon Pi Epsilon (National Honor Society for the Computing Sciences), Phi Kappa Phi (Academic Honor Society) and an honorary member of Delta Mu Delta (National Honor Society for Business Administration). Dr. Sobh is a member, senior member, founding or board member of several professional organizations including; ACM, IEEE, the International Society for Optical Engineering (SPIE), the National Society of Professional Engineers (NSPE), the American Society of Engineering Education (ASEE), the American Association for the Advancement of Science (AAAS), the Society of Manufacturing Engineers (SME), the International Association of Online Engineering (IAOE), the Bridgeport Discovery Museum, the Connecticut Pre-Engineering Program (CPEP), and the International E-Learning Association (IELA). Dr. Sobh is a graduate of Victoria College, Alexandria, Egypt, in 1983 and a life member of the Old Victorians Association.

Keynote I (Opening Keynote): Tuesday, October 10, 10:20 – 11:00 am



Dr. Donna L. Bell

Executive Vice President – Product Creation, Engineering, and Supply Chain
 Lordstown Motors
 Farmington Hills, Michigan, United States

Dr. Donna Bell is Executive Vice President of Product Creation, Engineering, and Supply Chain at Lordstown Motors. She is responsible for the development and execution of LMC vehicles, subsystems, hardware and software, and supply chain partnerships from concept to launch. Prior to her current role, Dr. Bell was vice president Brand Management and Marketing at Ford Credit where she handled all aspects of brand management and marketing for Ford Motor Credit Company. Previously, she was strategy director at Ford Motor Company, a \$150B company. Collaborating with key stakeholders, Donna established and communicated customer driven strategies that increased corporate growth in areas such as autonomy, mobility, connectivity, artificial intelligence (AI), and robotics. Dr. Bell's transformational leadership was important in building Ford's new Greenfield labs facility in Palo Alto, CA. She was responsible for acquiring the highest caliber talent, managing a multi-million

dollar operating budget, creating a culture of innovation, and connecting new technologies and innovations that were created in Silicon Valley to Ford's winning portfolio. Dr. Bell served as the electrical Global Product Development (PD) Quality manager at Ford where she collaborated with product development to deliver revenue generating customer experience and improving electrical quality by more than 35%. Dr. Bell's leadership and involvement in the community is extensive and involves creating programs that educate and develop students in science, technology, engineering, and mathematics (STEM). Dr. Bell holds a Bachelor of Science degree in Electrical Engineering from Lawrence Technological University (Southfield, MI), Master of Science degrees in Electronics and Computer Control Systems and Engineering Management, and a PhD in Industrial and Systems Engineering all from Wayne State University (Detroit, MI).

Keynote II: Tuesday, October 10, 11:00 – 11:40 am

John Hawkins

Vice President, North America, Electrified Powertrain Technology
ZF Group
Farmington Hills, Michigan, USA

As Vice President of North America Electrified Powertrain Technology for ZF, John Hawkins is responsible for the regional electrification business strategy and growth, including research and development, sales and marketing, application engineering and production. John joined ZF in 2015 as director of product planning for ZF's braking division, and has held various leadership roles within the organization. He has played an important part in the company's initiative to develop technologies for Next Generation Mobility, delivering clean and safe mobility for everyone everywhere. John started his career as an engineer with General Motors and transitioned to consulting where he worked at Deloitte Consulting, Capital One and Data Consulting Group. He graduated with a bachelor's degree in mechanical engineering from Michigan State University and a master's degree in engineering from Purdue University. John also has his MBA from University of Virginia Darden School of Business.

Keynote III: Tuesday, October 10, 11:40 am – 12:20 pm

Dr. Jorge Arinez

Lab Group Manager, Technical Fellow for Manufacturing Systems and Controls Research
GM Global Research and Development
Warren, Michigan, USA

Dr. Jorge Arinez is a Technical Fellow and Lab Group Manager for Manufacturing Systems and Controls Research at GM Global Research and Development. Dr. Arinez's current work focuses on Smart Manufacturing Systems and real-time, decision support tools that enable GM's plants to meet productivity and quality goals. His research in production control, process design, advanced manufacturing analytics, and sustainability are vital to GM's corporate strategy of an all-electric, carbon-neutral future. Dr. Arinez's technical contributions include development of system models and diagnostic methods to identify real-time throughput bottlenecks by use of stochastic/continuous flow models. These tools have been deployed globally into GM's standard plant-floor

system for production monitoring and control yielding significant throughput, quality, and cost benefits. Dr. Arinez has 15 issued patents, 39 records of invention, over 120 peer-reviewed publications, and a Boss Kettering Award, GM's highest technical innovation award. He has received the Society of Manufacturing Engineers Outstanding Young Manufacturing Engineer Award, USCAR Recognition Awards, and the Hispanic Engineer National Achievement (HENAAC) Luminary Award. He has also served as an associate editor for the IEEE Transactions on Automation Science and Engineering journal and been a symposium organizer for the ASME Manufacturing Science and Engineering Conference (MSEC). Dr. Arinez holds a Bachelor of Applied Science in Mechanical Engineering from the University of Toronto, and a Masters and Ph.D. in Mechanical Engineering from the Massachusetts Institute of Technology.

Keynote IV: Tuesday, October 10, 12:20 – 1:00 pm

Ankil Shah

Vice President
Toyota Motor North America (TMNA) R & D

Title: Lightweight vehicles / Carbon Neutrality for Now & Future

Ankil Shah is the Vice President for Material Engineering and Performance Analysis and Evaluation at TMNA R & D located in Ann Arbor, Michigan. Mr. Shah is responsible for managing all Toyota vehicle N.A. materials and parts development and Performance for vehicle like Body strength, NVH, Aerodynamics, Thermal, Ride & Handling, and Brakes for Toyota vehicles in N.A. Mr. Shah joined Toyota in 1991 and over the past 33 years he has worked in material engineering advancing to Manager for paint & resin materials area, Lightweight materials leader for R&D, Materials General Manager, and Vice President for R&D.

1:00 – 2:00 pm – Buffet Lunch

Keynote V: Tuesday, October 10, 2:00 – 2:30 pm

Dr. M. Manzoor Hussain

Registrar
Professor, Department of Mechanical Engineering
Jawaharlal Nehru Technological University (JNTU)
Hyderabad, Telangana, India

Dr. M. Manzoor Hussain is presently Registrar of Jawaharlal Nehru Technological University, Hyderabad and Professor in Mechanical Engineering Department. Earlier he has served as Director of Admissions for three years. He also served as the founder principal and established one of constituent colleges of JNTUH at Sultanpur, Sangareddy District. He was the chairman of Board of Studies of JNTU in Mechatronics Engineering and

Automobile Engineering. He has guided over 50 post graduate thesis and supervised 21 PhD scholars and currently 7 research scholars are working under his supervision. His areas of research include composite materials, manufacturing, additive manufacturing, welding and industrial engineering. He has over 26 years of experience in teaching and administration in various capacities as officer-in-charge, special officer and member of various expert committees of University and AICTE. He has organised various workshops, short term programs and conferences in the university. He also worked in Ethiopia for two years as Head of Manufacturing in Defence Engineering College. He has published over 65 papers in peer reviewed journals and National and International conferences, and has visited countries like Kuwait, Thailand, Germany and Australia for conferences. He was awarded the best teacher award by Telangana State Government in the year 2016. He was the co-convenor for EAMCET for three years and Convenor for one year.

Keynote VI: Tuesday, October 10, 2:30 – 3:00 pm



Dr. Manuel Montoya
General Director of the Automotive Cluster of Nuevo León (CLAUT)
Monterrey, Mexico

Manuel Montoya Ortega has more than thirty years of international experience in the areas of Strategic Planning and Business Plan Development; As well as in the Creation, Development and Structure of Clusters in diverse sectors and regions of Mexico. He holds a PHD in Administration from the Universidad Autonoma de Queretaro, a Master's in Business Administration from the Instituto de Estudios Superiores de la Empresa, IESE, Barcelona, Spain, and a Chemical Engineer degree from the Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Monterrey. He also has a specialization in: Business Management DI by the Instituto Panamericano de Alta Dirección de Empresas (IPADE) and Total Quality Management Program, Tata Research Center, Pune, India. Manuel Montoya is part of Council of the Automotive Industry Clusters Network of Mexico, General Director of the Automotive Cluster of Nuevo León, A.C. and Founding Partner of ENE Estructuras de Negocios, S.C.

Previously, he has collaborated in managerial positions for various companies and organizations in Mexico and abroad, including: Inmobiliaria Seival (Project Director and General Director), Pan American Institute of Senior Management of Companies IPADE (Director of Senior Management Programs), Ficosa International and Tata Ficosa Private Limited (Technical Vice President and Board member in Pune, India). Throughout his career, he has actively contributed as a director for various associations and institutions. Manuel Montoya serves as a member of the Council of The Competitiveness Institute (TCI Network), Latin America Chapter, as well as the Monterrey Competitiveness Center and the Tooling Cluster of Nuevo Leon; and recently, he has been named as President of Andamos Mexico (National Association of Leaders of Mexican Associations). He has also actively collaborated in various civil associations of a social and educational nature.

Wednesday, October 11, 2023

Keynote VII: Wednesday, October 11, 10:20 – 11:00 am



Charon Morgan
Vice President of Engineering
Autoliv Americas
Auburn Hills, Michigan, USA

Charon Morgan is currently the Vice President of Engineering at Autoliv leading the Americas Division for RD&E. She joined Autoliv in August 2022 after 2 years away from the Automotive industry where she was at Eaton leading the Crouse-Hinds, B-Line, Airport Lighting and Oil & Gas Divisions. Prior to Eaton, Charon spent over two decades in the automotive industry where she served in over 15 roles throughout the duration of her career with General Motors. Charon has led technical teams in regions around the globe including North America, South America, and Asia Pacific with her most recent role of leading Global Fuel and Diesel systems at the GM Technical Center in Detroit, MI and Global Product Development for General Motors China at the Center for Advanced Research and Science in Shanghai, China.

Graduating from Purdue University with a Masters in Mechanical Engineering and Vehicle Dynamics, Morgan's career started with positions across multiple disciplines in Global Product Development at General Motors at the Technical Center in Warren, Michigan. This included assignments in Vehicle Dynamics at Milford Proving Grounds, and various special assignments including management and leading special task forces for crisis situations. She then moved into Program Operations and Management transitioning business from the US to China, with a key role at GMs largest Joint Venture in China in 2013. While in China, Charon took on a new role leading the product engineering and supplier quality functions for GM China while still working with GMs Joint Ventures.

Morgan has served multiple industries through service with various societies and foundations. Some include Society of Women Engineers and SAE International. She served on several boards and committees including the Board of Directors, Technical Standards Board, Scholarship Advisory Committee, Executive Nominating Committee, and Motor Vehicle Council, among others. Morgan also received multiple awards for her volunteer work, including SAE Distinguished Younger Member in 2008 and Member of the Year in 2010. Charon frequently speaks at technical conferences and guest lectures in International Business, STEM education, and advocates for Women in Engineering as demonstrated through her work with Ladies Who Tech and First Robotics. In 2016, she served as Chairman of the Automotive Committee at the American Chamber of Commerce in Shanghai. She currently serves as a Board member for the Automotive Safety Council (ASC), Automotive Women's Alliance and multiple Engineering Boards for Oakland University.

Charon resides in Birmingham, MI with her husband of 26 years and 3 sons, Parker, Conner and Carson who are studying at MSU and U of M. Her hobbies include reading, hiking, golf, and traveling the world with her family and friends.

Keynote VIII: Wednesday, October 11, 11:00 – 11:40 am



Firasat Siddiqui
 Director Product Strategy and Projects
 Harman International
 Novi, Michigan, United States

Next Generation Connectivity Solutions Through Innovative Product and Program Management

Firasat Siddiqui has more than twenty five years in the automotive industry experience, ranging from Manufacturing, Sales, Program Management, Product Management and Strategic Business planning. Focusing on cutting edge technologies related to Vehicle Connectivity, Infotainment, and Camera Systems. He has a strong track record of building up highly skilled global teams and delivering operational excellence across regions to deliver successful end-to-end product launches. Firasat joined Harman in 2017 and has held various positions within organizations, including playing important roles in business operations and strategy in Connectivity Business Unit. His current role within the Connectivity Portfolio team encompasses business planning, governance and process implementation and customer projects. Prior to joining Harman, he worked at Valeo as Customer Director/Manager in Sales capacity for Front End Module. He graduated from University of Akron with degree in Mechanical Engineering with a specialization in Polymer Science. Firasat enjoys playing golf and indoor soccer and is an avid Red Wings Hockey fan.

Keynote IX: Wednesday, October 11, 11:40 – 12:20 pm



Frederic Flory
 RO Director for Powertrain Electrification Mobility for North America
 Valeo
 Auburn Hills, Michigan

Title: ***Valeo 800V Electrification Overview***

As VP of Electric Powertrains, Americas, Frederic has the responsibility to drive and develop Valeo's low and high voltage business across the region. All customer interfaces for North and South America are driven through teams located in Auburn Hills –Michigan for R&D, but also through Mexico and Brazil when it comes to serial production. Valeo's product portfolio covers existing business for starters and alternators, but also the high voltage

products for chargers, DCDC converters, Inverters and electrical Motors in 400 and 800V System. Before taking on the role in North America at the end of 2022, Frederic has been working on building new products, supply chain, plants, and teams for electrification and mobility since 2018 within Europe and China.

Snajaka Wirasingha
 R&D Director-Americas, Electrified Mobility
 Valeo
 Auburn Hills, Michigan

Keynote X: Wednesday, October 11, 12:20 – 1:00 pm

1:00 – 2:00 pm – Buffet Lunch

Keynote XI: Wednesday, October 11, 2:00 – 2:30 pm



Dr. Steven Marshall
 Valeo
 Auburn Hills, Michigan

Dr. Steve Marshall is the Senior CFD Expert at Valeo Thermal Systems in Auburn Hills, Michigan USA. He began his career with Valeo in 1994 at their HVAC production facility in Gorseinon, Wales, UK, immediately after completing his BEng and PhD in Mechanical Engineering at the University of Swansea, Wales. He emigrated to Michigan with his family in 1999. Dr. Marshall has always strived to remain current with technological developments in simulation. Transportation Mobility and Electrification are no exception. He recently developed simulation techniques for modeling virus dispersion in city buses along with a simulation of a bus UVPurifier using Germicidal Irradiation as part of Valeo's mobility initiative during the Covid pandemic. This directly helped Valeo's production employees commute to their manufacturing plants more safely and also enabled civic transportation providers to keep the public safe on city buses. More recently as part of the electrification of automotive vehicles, Dr Marshall has been working on the simulation of dual layer and ram air control HVAC systems, both used to increase the vehicle's mi/kWh for vehicles in the US and worldwide. Dr. Marshall plays as hard as he works, and enjoys renovating his family's cottage in the upper peninsula of Michigan, running, skiing, and snorkeling, depending on the season.

Keynote XII: Wednesday, October 11, 2:30 – 3:00 pm

ID 203 Integrated Framework for Design Thinking & Strategic Product Planning

Shannon Dare Wayne, Ph.D. and Ratna Babu Chinnam, Ph.D.

Department of Industrial & Systems Engineering, Wayne State University, Detroit, MI, USA

Thursday, October 12, 2023

Keynote XIII: Thursday, October 12, 10:20 – 11:00 am

Lokesh Setti
Flexible Vehicle Architecture Supervisor
Ford Motor Company
Dearborn, Michigan, United States

Title: Next Generation EV Platforms

Dr. Lokesh Setti is the Flexible Vehicle Architecture Supervisor at Ford Motor Company. He is responsible for leading and driving flexible vehicle architecture strategy for key systems on next generation EV and ICE platforms. He represents flexible vehicle architecture vision in executing the 'Voice of the Customer' and helps stakeholders drive the right decisions for the company. Dr. Setti has held various leadership roles within the company over the past 22 years representing Vehicle Engineering and Flexible Vehicle Architecture teams. As a Technical Expert for Vehicle Integration, he led the development and implementation of vehicle level attribute requirements and validation procedures. Dr. Setti has also served the company in an international service role for two years in Shanghai, China where he collaborated with product development team and helped improve product quality ratings for China market. After repatriation, he played a pivotal role for two years in improving the quality of HMI and digital user interface across Ford and Lincoln products. Dr. Setti holds a Bachelor's degree in Mechanical Engineering from Karnataka University (India), a Master's degree in Mechanical Engineering from Texas Tech University, a Master's degree in Engineering Management from Wayne State University, and a Ph. D in Industrial Systems Engineering from Wayne State University.

Keynote XIV: Thursday, October 12, 11:00 – 11:40 am

Akim Khalef
FORVIA Faurecia
Auburn Hills, Michigan, United States

Highly adaptive and performance-driven leader with over 8 years' experience in industrial environment (medical and automotive) in France, Japan, Czech Republic and the United States. Scope of experience encompasses key leadership roles within global purchasing and global program management. Skilled in team leadership, purchasing, growth, strategic planning, and relationship management. Currently establishing the supply and value chain of Forvia Materi'Act in North America. Securing feedstock and biomass, developing Materi'Act industrialization and operations strategy in NA and developing business with customers by offering sustainable materials with ultra low CO2 footprint to decarbonize the production of vehicles.

Key Achievements:

- 1) Demonstrated record of results in a complex business environment, exceeded all purchasing P&L and cash expectations and improved all the operational metrics of Forvia largest purchasing commodity in North America.
- 2) Defined and Implemented BOP Plastics commodity strategy in North America to support Forvia 2027 vision, including following levers: financial, cash, operational, innovation and sustainability.
- 3) Drove procurement synergies in Hella post acquisition in North America : assessed and captured procurement synergies, established Forvia best in class supplier panel and drove new procurement operating model.
- 4) Established purchasing department and defined purchasing strategy for Faurecia in Japan (direct and indirect purchasing)

Akim received Bachelor's degree, LLCE japonais – parcours management des entreprises et associations from University of Lille 1 Sciences and Technology, France and Master's degree in Management stratégique des Achats (DESMA) from Grenoble IAE – Grenoble INP's Graduate School of Management, Saint-Martin-d'Hères, France.

Keynote XV: Thursday, October 12, 11:40 – 12:20 pm

Alan Amici
President and CEO
Center for Automotive Research
Ann Arbor, Michigan, USA

Keynote Title: "The EV Transition"

Alan Amici is the President and CEO of the Center for Automotive Research (CAR). Alan joined CAR after a 35+ year career with Chrysler and TE Connectivity, holding a variety of positions in engineering, manufacturing, and service. His roles at TE include

- VP & CTO, Transportation Solutions
- VP Engineering, Automotive Americas
- Highlights of his tenure at Chrysler include:
 - Head of Global Uconnect – Infotainment and Connected Car Platform
 - Head of Electrical/Electronics Engineering (Torino, Italy & Auburn Hills, Michigan)
 - Senior Manager, Global Service & Parts (Stuttgart, Germany)

Alan is the owner of two patents and is the recipient of the Walter P. Chrysler Technology Award. He holds an MBA, a Master of Science degree, and a Bachelor of Science degree in Electrical Engineering from the University of Michigan. He currently serves on the Board of Advisors at Penn State Harrisburg and the Department of Industrial Engineering at Wayne State University. He is a graduate of the Chrysler Institute of Engineering.

Keynote XVI: Thursday, October 12, 12:20 – 1:00 pm



Dr. Mario Chauca
 Researcher Professor
 Ricardo Palma University
 Santiago de Surco, LI 15039, PERU
 Researcher of the RENACYT-CONCYTEC

Mario Chauca is Executive Committee Member IFEEES (2019-2021), was a Director of the AOTS-Kenshu Kiokay-Peru (2010-2014), member of the technical committees since 2010, invited by the University of Washington IEEE, in 2010 joined the Steering Committee of the IEEE-MWSCAS, and has participated in more than 30 committees in the European Union, Asia, Africa, America and Australia. All event proceedings are indexed in Scopus, journals and others database. Chauca was participant as speaker and Chair Session at WEE2019-Chennai (India), IEM2019-Toronto (Canada), WEEF2018-Albuquerque (USA), ICIMA2018-Penang (Malaysia), WEEF2017-Kuala Lumpur (Malaysia), CONeGOV2016-Florianopolis (Brazil), ISIT2014,17-Guanajuato (Mexico), MWSCAS2010-Washington (USA), JAIIO2009-Mar del Plata (Argentina), CONIELECOMP2007,9,10-Puebla (Mexico), SIE2004-Santa Clara (Cuba). He obtained a scholarship from the AOTS Tokyo (Japan), from the NIPA and Ministry of Science, ICT and Planning of the Future of Korea Seoul (Korea). He is a Consultant in Information and Communication Technologies, he was consultant in the project of United Nations-Inter-American Development Bank-Congress of the Republic of Peru and the Ministry of the Interior of Peru. He is a researcher by RENACYT-CONCYTEC in the Peruvian Government, adviser first award paper CONEIMERA2018, adviser of the First General Award Project for more than 5000 projects in the contest from the Romero Group, adviser for first projects in congress INTERCON, CONEIMERA, and was nominated for the Graña y Montero Prize for Research in Peruvian Engineering. Nominated Peruvian Research Southern Prize 2019 and nominated research award 2018 MEXICO. As author and advisor of papers he has more than 50 letters of acceptance, served organizer of international academic events, editor of proceedings, and advisor to the IEEE chapters at the National University of Callao and the Ricardo Palma University. He teaches at the postgraduate and undergraduate level, with 30 years of experience. He graduated as an Electronic Engineer from Ricardo Palma University in Lima Peru, obtained his Master's Degree in Business Administration with a mention in "Business Management" and his Doctorate in Education from San Luis Gonzaga National University.

1:00 – 2:00 pm – Buffet Lunch

Keynote XVII: Thursday, October 12, 2:00 – 2:30 pm



Dr. Samira Keivanpour
 Assistant Professor
 Department of Mathematical and Industrial Engineering
 Polytechnique Montréal
 Québec, Canada

Circular Economy Principles for Sustainable Air mobility

Samira Keivanpour is an assistant professor in the Department of Mathematical and Industrial Engineering at Polytechnique Montréal, Canada. Samira earned her Bachelor's degree in Electrical Engineering and MBA in Operation Management from Iran. She received her Ph.D. in Industrial Engineering from Laval University. Samira was a postdoctoral fellow and professional researcher at the Department of Mechanical Engineering of Laval University during 2015-2017. She was a faculty member at Thompson Rivers University before joining Polytechnique Montréal. She conducts research on sustainable solutions for supply chain and logistics management, with a focus on end-of-life product treatment, circular manufacturing, and the integration of Industry 4.0 technologies.

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 Vikas Kumar, University of the West of England, UK
 Vitor M. Caldana, Professor, Depto. de Eletroeletrônica, IFSP – Instituto Federal de São Paulo – Campus Sorocaba, SP, Brazil
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 Yong WU, Griffith University, Australia

42nd IEOM Industry Solutions and Industry 4.0 - Plenary

Wednesday, October 11, 4:00 – 5:45 pm (Room 4 – Virtual)



Foad H Khanli

Director of Quality Assurance, Performance and Business Improvement
Amor Health Services, Inc.
Brownsville, Texas, USA

Mr. Hosseinkhanli is Director of Quality Assurance, Performance and Business Improvement Amor Health Services, Inc. in Brownsville Texas USA. He was General Manager of Almana Trading in Doha Qatar Middle East and responsible for all aspects in creation and implementing of successful growth of new market development and turn-key operation for various products. Mr. Hosseinkhanli was involved with financial negotiation with national and international banking, corporation, private sources and trading organization. Volvo International Development Corporation, Gothenburg Sweden, Marketing Director For The Middle Eastern Countries, UAE, Saudi Arabia, Bahrain, Turkey and Iran. Negotiated and established exclusive franchise agreement and turn- key operation. Did market analysis and feasibility studies for Volvo International in the Middle Eastern countries and increase annual sales in excess of 55%. Chief Industrial Engineer, United Carr, manufacturer of plastic knobs for Automotive Industries, Knoxville Tennessee USA. His education background is: Master of Business Administration from IMMEDE Management Institute in Lausanne Switzerland majoring in financing. Bachelor of Science in Industrial and System Engineering from University of Rhode Island in Kingston Rhode Island USA. Certified Business Analyst from International profit Association in Buffalo Grove IL USA. Certified Six Sigma Green and Black Belt from Institute of Industrial Engineers. Extra Curriculum Activity: Senior Member of Institute of Industrial Engineers, Senior Member of ASQ and Senior Member of Swedish Method and Time Measurement Language: Fluent in English, Swedish, German, Turkish, Farsi and some Spanish.

ID 199 Fuzzy Logic Application in a Lead-Acid Battery Charger for an Electric Wheelchair

Santillan A. Bryan and Rodriguez V. Katherine, Industrial Engineering Students, University of Lima, Lima, Av. Javier Prado Este 4600, Peru
Paredes L. Fabricio, Cieza D. L. Eduardo, Pratalongo S. Italo, Professors, Av. Javier Prado Este 4600, Faculty of Industrial Engineering, University of Lima, Lima, Av. Javier Prado Este 4600, Peru



Dr. Luis Rocha Lona

Lecturer in Operations Management, Business School
National Polytechnic Institute of Mexico
México City, Mexico
Tec de Monterrey, Campus Santa Fe

Luis Rocha-Lona is a Lecturer in Operations Management at the Business School at National Polytechnic Institute of Mexico and at Tec de Monterrey, Campus Santa Fe. Luis Rocha graduated from the National Polytechnic Institute of Mexico (IPN) as Automation Control Systems Engineer. Then, he pursued an MSc in Control Systems with a major in information systems/manufacturing at the University of Sheffield, UK. He holds a PhD in Operations Management from The Manchester Business School. Dr Luis Rocha-Lona has eight years of working experience in the public and private sectors. He has lead several projects involved with service and manufacturing organisations and is currently supervising Master and PhD students at National Polytechnic Institute of Mexico.

ID 200 Disruptive Technologies and Implications for Business Sustainability

Luis Rocha-Lona, Instituto Politecnico Nacional, Mexico

EV – Vehicle Electrification Panel

October 10, 2023, 3:00 – 4:30 pm – S100 Auditorium (Onsite)

Panel Chair



Dr. Saso Krstovski, MBB

Past Automotive University Programs Manager

Past Automotive Lean Manufacturing Manager / Six Sigma Master Black Belt

Dr. Saso Krstovski is a former automotive professional with over 25 years of expertise in complex structured problem-solving, working as Lean Manufacturing Manager and Lean Six-Sigma Master Black Belt. Dr. Krstovski has held many engineering assignments, including time working as a Test Engineer, Launch Test Engineer, and Electrical Control Engineer. During his tenure in automotive manufacturing, Dr. Krstovski has worked in several plant environments and skill teams such as Safety, Quality, Operations, and Finance and has held front-line supervision roles managing hourly UAW production employees. This exposure to new work concepts within automotive manufacturing has allowed Dr. Krstovski to amass a holistic engineering approach. As such, Dr. Krstovski has gained an extensive understanding of the Six-Sigma methodologies. As a detail-oriented and data-driven engineer, Dr. Krstovski is an invaluable contributor to the lean and six sigma profession. He is highly distinguished and skilled with problem identification and resolution to avoid time and cost expenditures. Dr. Krstovski teaches at several Michigan Universities as an Adjunct Professor within the College of Engineering and Business. Dr. Krstovski research interests lie around System Optimization. He continues to collaborate actively with researchers at several universities. Dr. Krstovski provides guidance globally to doctoral candidates on dissertation direction. He graduated from Lawrence Technological University with a Doctorate of Engineering in Manufacturing Systems (DEMS). In addition, to his doctorate, Dr. Krstovski has a Master in Electrical Computer Controlled Systems and a Bachelor of Science in Electrical Engineering from Wayne State University. Dr. Krstovski has authored several publications and scientific articles on various engineering topics.

Panel Speaker I



Amit Ranjan

Engineering Manager – EV Battery Manufacturing

Founder of Energy Efficiency Startup

Canoo

Amit Ranjan is an industry expert with over 15 years of experience in automotive propulsion systems focusing on emission reduction technologies spanning from Selective Catalytic Reductions for Diesel engines to electric propulsion in battery electric vehicles. In previous roles, Amit led the systems engineering of Ultra-high efficiency Single Module exhaust aftertreatment system for the global engine leader Cummins Inc. His contribution to the technology has enabled diesel vehicle makers Daimler, Paccar, DAF trucks & Stellantis to meet EPA emissions targets. Amit played a notable role in propulsion system development of STLA Large BEV architecture of Stellantis enabling premium European brands Alfa Romeo & Maserati & iconic American brands Chrysler, Dodge & Jeep to achieve industry leading range, efficiency and charging speeds. In his current role, Amit is leading engineering development of battery manufacturing technologies for the distinguished EV startup Canoo. Amit comes with a Masters in Mechanical Engineering from the University of Michigan – Ann Arbor. Outside of Canoo, he is contributing to the legislation & policy development by United States congressmen as a constituent voice & a technology expert in the battery safety area.

Panel Speaker II



Mary Beth MacDonald

Retired Program Manager – Electrification at General Motors

Mary Beth recently retired from General Motors after a 40-year career in Engineering and Program Management. Her most recent role was Program Manager of EV Propulsion Systems, managing multiple Program Execution Teams responsible for the design, development and manufacturing of EV batteries, electric drive units and control systems. Mary Beth has an extensive background in engine design, development, calibration, test and validation throughout her career. She has also been a leader in powertrain integration and vehicle system engineering for multiple propulsion programs. She ended her GM career with 4 years in EV Program Management, paving the way for several successful EV program launches as well as establishing future EV propulsion program execution plans. Her experience includes 6 years of international work assignments at GM Korea in Bupyeong, S. Korea, as well as PATAC in Shanghai, China, a GM-SAIC joint venture. Mary Beth has received a Bachelor of Science in Mechanical Engineering degree from Lawrence Technological University and a Master of Science in Mechanical Engineering degree from the University of Michigan – Ann Arbor. She has received the GM Chairman's Honors Award and the People Make Quality Happen Award, and is a DFSS Black Belt.

Panel Speaker III



Ms. Kayla Buczkowski

Leading Test & Validation

EAVX

Milan, Michigan, United States

Ms. Buczkowski is a Leading Test & Validation at EAVX. She was an Applications Service Engineer with A&D Technology and is pursuing the dual Master's program of Engineering Management and Industrial Engineering at Lawrence Technological University as well as her Professional Engineering license in Mechanical Engineering. She graduated from Michigan Technological University in May 2018 with a Bachelor's of Science in Mechanical Engineering, minoring in Music Performance. Working for A&D Technology, Ms. Buczkowski has become one of the company's experts in battery testing, engine testing, and hardware-in-the-loop testing. She integrates her company's software, iTest, at their office in Ann Arbor, MI as well as at customer facilities around the globe. Currently, acting as one of the administrators of A&D Technology's service department and is the lead trainer in charge of training internal employees

and customers on A&D products. Ms. Buczkowski has spent four years working for A&D Technology, but also accumulated an additional two years of design and testing experience through internships and co-ops during her undergraduate studies. During her time attending Michigan Tech in Houghton, MI, Ms. Buczkowski performed with the Keweenaw Symphony Orchestra, serving as principal percussionist for four of her five years. As a final project for her Music Performance minor, she conducted a song with the Keweenaw Youth Symphony Orchestra. After graduation, she has maintained her appreciation for music performance and currently plays with the Dexter Community Orchestra.

Panel Speaker IV

Dr. Balakumar Muniandi
Associate Professor of Practice
Department of Electrical and Computer Engineering
Lawrence Technological University
Southfield, Michigan

Dr. Balakumar Muniandi is an Associate Professor of Practice in the Department of Electrical and Computer Engineering at Lawrence Technological University. He worked as a Postdoctoral research associate in Electrical and Computer science Engineering (ECE), University of Massachusetts, where he developed an energy-efficient Cellular Neuromorphic Computing (CNN) chip in deep sub-micron process for DARPA, USA by collaborating with BAE systems. He was also worked as an R&D Engineer in Hsinchu Science Park (Silicon Valley of Taiwan), Taiwan. During his PhD, he is a key person in Indo-Taiwan bilateral project for developing "MPPT based solar battery charger system". His research interest mainly focuses on power management circuits, battery chargers, mixed signal IC designs, GaN gate driver, smart battery management system for electric vehicles and Neuromorphic computing.

Panel Speaker V

Scott Lukomski
EV Business Director
Marposs Corporation
Plymouth, Michigan, United States

Scott Lukomski is the EV Business Director for Marposs Corporation and has a 25-year career focused on quality in manufacturing and engineering. As a lifelong Michigander, Lukomski has spent most of his career devoted to automotive drivetrain manufacturing and quality. He expanded his quality control experience with automotive OEMs and Tier companies through tenures at companies such as Perceptron and Jenoptik Automotive. In his role at Marposs, he is charged with directing the network of salespeople and distribution partners to grow business in the electric vehicle sector, including battery testing, electric motor testing, machine monitoring and other solutions.

"Yesterday, the measurement and inspection challenges revolved around the key components of the internal combustion engine, and today, they're firmly focused on propulsion systems for battery electric vehicles," Lukomski says. "It's my goal to make Marposs a resource for all manufacturers in the new propulsion industry and help them as they build their businesses."

Smart Mobility Panel

October 11, 2023, 3:00 – 4:30 pm – S100 Auditorium (Onsite)

Panel Chair

Steven Sibrel
Senior Supplier Quality Manager
Harman International, Novi, MI
Past Chair – ASQ Greater Detroit

Steve Sibrel is a business process improvement trainer, coach and auditor with over 35 years of experience in the business and manufacturing world. He is currently working as Senior Supplier Quality Manager at Harman International, a manufacturer of audio and infotainment systems for consumer, professional, and automotive industries, with well-known brands such as JBL, Lexicon, Crown, Infinity, Mark Levinson, Becker and Harman-Kardon. Previously he held a number of engineering and management positions in diverse industries at Applied Materials (Semiconductor), NEC (Telecommunications) and Texas Instruments (Military). He has conducted over 200 supplier audits in North America, Europe, and Asia and is a Lead Auditor for ISO/TS16949, ISO9001, ISO13485, ISO17025, and 21CFR820. He has been the Chair for Professional Development for the ASQ Detroit section since 2008. He received the Distinguished Service Award in 2008 and the Leadership Award in 2013 from ASQ. Current ASQ Certifications held are Six Sigma Black Belt, Quality Engineer, Quality Inspector, Quality Auditor, and Manager of Quality/ Organizational Excellence. He is an adjunct faculty member at Macomb Community College. Steve has a BSEE degree from Rose Hulman Institute of Technology and an MSEE degree from Southern Methodist University.

Panel Speaker I

Dr. Jianhua Zhou
Fellow of Society of Automotive Engineers (SAE) International
Fellow of American Society for Quality (ASQ)
Former Vice President of Ford China Quality and New Model Programs
Former Vice President of Ford Asia Pacific Quality and New Model Programs
Former Ford Corporate Executive Technical Leader
Member of Ford Technology Advisory Board

Dr. Jianhua Zhou is Fellow of Society of Automotive Engineers (SAE) International, Fellow of American Society for Quality (ASQ), and SAE Mentor and SAE Lecturer on AV and EV Reliability. With more than 28 years of experience at Ford Motor Company, he held various leadership positions, including Vice President of Ford China Quality and New Model Programs, Vice President of Ford Asia Pacific Quality and New Model Programs, Ford Corporate Executive Technical Leader, and Member of Ford Technology Advisory Board. Dr. Zhou has extensive global leadership experience including foreign assignments in Japan, Turkey and China. Currently, Dr. Zhou serves as an

Associate Editor for the SAE Journal of Materials and Manufacturing and the SAE Journal of Passenger Vehicle Systems. He also serves on the Advisory Board for Eastern Michigan University School of Engineering QMP. Dr. Zhou's expertise has been sought after internationally, having trained over 15,000 individuals in more than 20 countries. He has published over 30 technical papers, holds a US patent on vehicle durability, and has been a keynote speaker and panelist at numerous global conferences. Furthermore, Dr. Zhou has been awarded the Taguchi Robust Design award three times. He received his M.S. and Ph.D. degrees from the University of Michigan, Ann Arbor.

Panel Speaker II



Therese Niemi
EV Curious | Technical Advisor for Light Metals
Business Development Manager
Henkel
Madison Heights, Michigan

Therese Niemi currently manages North America and Mexico for Functional Coatings of Light Metal Business for Automotive Components for Henkel Corporation. With more than 20 years of experience working in the field of surface treatment, she has held various leadership positions in technical service, product management, business development, and technical management. She is also leading the Henkel North America Battery Team for Surface Treatment. Holds a patent in VISIBLE CHROMIUM – AND PHOSPHORUS-FREE CONVERSION COATING FOR ALUMINUM AND ITS ALLOYS – US pat. 6464800. Therese has a BSCE degree from Lawrence Technological University and an MBA from JWMI, Philadelphia, PA.

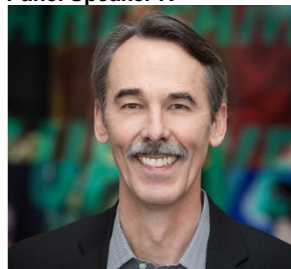
Panel Speaker III



Xubin Song
Founder and CEO
ePower Mobility
Canton, Michigan
United States

Dr. Xubin Song, PhD (Virginia Tech, 1999) and ASME Fellow (2013), an outstanding powertrain expert on propulsion electrification, who founded the International Journal of Powertrains as Editor-in-Chief in 2010 and published more than 50 peer-reviewed papers as well as one co-authored book "Advanced Powertrains for Commercial Vehicles" (SAE, 2021). Dr. Song undertook senior engineering positions with Eaton (2004-2015) and executive leadership roles of Weichai Power (2015-2021), before founding the startup ePower Mobility LLC (2021) to pioneer the next generation of cost-effective electrification solutions, Mobile Charging e-Propulsion (MCeP), to hard-to-abate big rigs from both industrialization and environmental perspectives.

Panel Speaker IV



Clay Phillips
Mobility Technology Lead
Michigan Small Business Development Center
Bloomfield Hills, Michigan

Clay Phillips is the Mobility Lead for the SBDC. He has deep practical experience in open innovation, intelligence, business development, strategy, and alliance management. From 2014 – 2018 he was an independent innovation and growth strategy advisor for startups, large companies and non-profits. He has served as adjunct instructor for the NSF Innovation Corps program and mentor for Detroit Techstars and GAMIC programs with a focus on transportation, advanced mobility and energy. Prior to 2014 he was an executive at General Motors R&D where he held leadership positions in corporate and advanced technology strategy, alliance management, and innovation commercialization. He was a founding member and VP of GM's corporate venture capital arm, GM Ventures, and led commercialization due diligence for the R&D Center's open innovation and internal startup program. Earlier in his career he managed international product and portfolio planning and new business development initiatives. Clay holds a BA from Trinity College and an MBA from Columbia University. In between degrees he served as an intelligence officer with the U.S. Navy for six years. For fun, he is an amateur musician and composer, and enjoys sailing on big water whenever possible.

Panel Speaker V



Matt Smith
Transportation Technology and Mobility
Kimely-Horn
Southfield, Michigan, United States

At Kimely-Horn, Matt, based in Southfield, Michigan, is focused on the firm's emerging technology and ITS practice in the Mid-Atlantic and Midwest regions, while supporting these same efforts nationwide. Matt has 29 years of experience in the transportation technology and mobility industry, including 11 with the Michigan Department of Transportation (MDOT) as the statewide ITS Program Manager, where he led the state's connected and automated vehicle efforts. Matt's experience in the public and private sectors has focused on the safety of our transportation system users, while enabling technology-based solutions that will improve transportation safety, mobility, and access. Matt has been continuously engaged with and leading the planning, design and deployment of connected vehicle infrastructure and applications since 2005, beginning with the USDOT Proof-of-Concept test in Oakland County, Michigan, with the Michigan Department of Transportation. Mr. Smith is currently the chair of the Connected and Automated Vehicle Standing Committee of the Institute of Transportation Engineers. He is a graduate of Penn State.

EV Charging Infrastructure Panel

October 12, 2023, 3:00 – 4:30 pm - S100 Auditorium (Onsite)

Panel Chair



Kush Shah

Chief Executive Officer, Global Organizational Excellence Solutions LLC (GOES)
GM Fellow, ASQ Fellow, SSMBB, DFSS MBB, Shainin Red X Master, Design Thinking Coach, ASQ-CMQ/OE,
CSSBB, CQE, CQA, CBA
Michigan, USA

Kush Shah is globally recognized for his expertise, professionalism and outstanding contributions to the field of quality. He has a proven track record for developing strategies / quality systems / methodologies and solving tough quality problems. He has demonstrated his unwavering dedication in advancement of organizational excellence by introducing strategies and quality concepts for many organizations and individuals that resulted in a significant improvement in performance and customer experience. He has trained and coached thousands of individuals at all levels of organizations across a variety of businesses globally.

Kush is the CEO of Global Organizational Excellence Solutions which is training and consulting with their clients, manufacturing and service organizations, hands-on and side-by-side to achieve their strategic and operational goals and objectives through the innovative application of Organizational Excellence principles, methods, and integrated problem-solving tools.

Kush retired from General Motors after 37 years of employment and his last position was Senior Manager, Operational Excellence with responsibilities of coaching and training top leadership to front line employees in continuous improvement methodologies globally. Completed Operational Excellence projects have an impact of over \$1 Billion globally. He has held leadership positions in manufacturing, ME, R&D and quality functions. Kush has received the Chairman's Honor Award, People Make Quality Happen Award, Quality Driver Award and GM Trade Secret Award. He has also co-authored a US Patent which has led to commercial application.

Kush has received many prestigious awards for his contribution to the field of quality and organizational excellence including the Subir Chowdhury Medal of Quality Leadership – Society of Automotive Engineers (SAE) and the Gold Award – the Engineering Society of Detroit (ESD). He has received the Distinguished Service Award from American Society of Quality (ASQ) Detroit Section along with the Koth Award and Jarvis Award from the ASQ Automotive Division for his leadership and contribution to these organizations. He also received the ASQ Testimonial Award for his outstanding leadership and distinguished service to the Society. Kush is recognized as an ASQ Fellow and GM Fellow.

He has been a speaker at many global conferences. His contribution to improve healthcare quality has been featured in the Detroit Free Press. He is a well reputed Design Thinking coach and has run Design Thinking workshops in India, Korea, Mexico, Israel, Philippines and US which has resulted in innovative solutions and patents from the participants. He is currently working with Oakland School District to teach Design Thinking to teachers and High School students.

Kush has received Bachelor of Science – Mechanical Engineering from Maharaja Sayajirao University, Vadodara, India and Master of Science – Mechanical Engineering from the University of Michigan – Ann Arbor. Kush holds many certifications including Six Sigma Master Black Belt, Design for Six Sigma Master Black Belt, Shainin Red X Master, Certified Manager of Quality / Organizational Excellence, Certified Quality Engineer, Certified Quality Auditor, Certified Biomedical Auditor.

Panel Speaker I



Dr. Morteza Nazari-Heris (Senior Member, *IEEE*)
Assistant Professor of Electrical Energy Systems
Lawrence Technological University
Southfield, Michigan

Dr. Morteza Nazari-Heris (Senior Member, *IEEE*) is Assistant Professor of Electrical Energy Systems at Lawrence Technological University. Prior to joining Lawrence Tech, he worked as Graduate Research Assistant in Areas of National Need at Pennsylvania State University and earned his Ph.D. specializing in energy systems. During his graduate studies at Pennsylvania State University, he performed projects on future, flexible, equitable, and robust networks of charging stations for high adoption of electric vehicles, application of machine learning and deep learning methods to energy systems, and sustainable design of buildings with renewable energy sources and energy storage facilities. He has also obtained B.Sc. and M.Sc. degrees in Electrical Engineering from the University of Tabriz, where he worked on design and performance analysis of zero energy building, residential load energy management, and multi-carrier energy systems. Dr. Nazari-Heris has an academic background in the techno-economic-socio analysis of critical infrastructure including the transportation system sector and energy sector, life-cycle analysis, and research.

During his time as Assistant Professor and Research Assistant in the past 11 years, he has delivered 3 research projects, and to date, he has 63 technical journal publications, 28 conference proceedings, and 28 book chapters in his academic records. In the past decade, he has had a strong background working as a researcher in universities in different countries working on several small-scale projects, which were revolved around the power network in different regions, short-term and long-term planning, and optimal energy management systems considering demand and generation side management, load forecasting, optimal power flow, dynamic pricing, sensitivity analysis, and market mechanism design. Dr. Nazari-Heris is an expert in transportation electrification, and energy systems with a focus on developing tools for the intelligent, sustainable, and resilient transportation system sector and energy sector, infrastructure systems, communities, and cities. His main areas of interest are energy system operation, energy management, sustainability, zero-energy Buildings, transportation electrification, electric vehicles, microgrids, multi-carrier energy systems, renewables, and energy storage technologies.

Panel Speaker II

Saif Siddique
Engineering Manager
Power Electronics/ Powe Converter
Stellantis
Auburn Hills, Michigan

As a technology leader, executing STELLANTIS electrification strategy to deliver exciting, class leading ZERO EMISSION vehicles for the iconic brands that offer advanced technology at affordable prices for global customers. Leading robust design for high voltage charging system, power converters with a high-level flexibility, in addition to component sharing across platforms, reduce complexity and deliver economies of scale, with each platform capable of supporting production to offer the most efficient solution for each vehicle category, from city-cars to pickup trucks, commercial vehicles and SUVs. Global experience in engineering, manufacturing, quality, supply chain, and strategy

development. Successfully launched numerous global programs with “Detroit Big Three” automakers. Managing high-volume manufacturing products including Power electronics, Electric drive system, HV battery system components, and vehicle integration. Saif has a very diverse academic background. He has received a Bachelor in Agricultural Engineering, Masters of Science major in Rural Electrification, he also completed bachelor’s in mechanical engineering from University of Michigan-Flint. Saif is currently serving as a member of the UM-Flint Engineering Industrial Advisory Board (EIAB).

Panel Speaker III

Dr. George Pappas
Assistant Professor & Director, MSAI graduate program
Electrical + Computer Engineering
Lawrence Technological University, Southfield, Michigan, USA

Over 10 years of teaching, research, and work experience in embedded systems and high-performance computing. I am currently the director of the Master of Science in Artificial Intelligence (MSAI) program. Research projects included being a Principal investigator (PI) for a DENSO grant in machine vision safety systems in vehicles titled “Intelligent Smart Real-Time Vision (ISRTV) as an Embedded System for Advanced Applications”. Also currently being a co-PI working on a Minimal Viable Product (MVP) Contextualizer that incorporates AI and software integration for manufacturing integration for Stefanini. Artificial Intelligence (AI) in Autonomous vehicles, employs

machine-learning techniques to collect, analyze, and transfer data for a safer driving experience. Also, investigate encryption and optimization algorithms and security of the transfer of electronic medical data using wireless cellular communication systems for evaluation, diagnosis, and treatment of patients in remote locations. Some additional research interests are Artificial Intelligence (AI) within radiology, specifically computerized tomography (CT) image reconstruction. Precise data analytics for pathology images. Virtual Reality (VR) in medical applications, Artificial Intelligence (AI) to aid diagnostics, Telemedicine, Medical and Health Informatics, Wireless implantable sensors, and biomedical Transducers.

Diversity and Inclusion Panel sponsored by Ford Motor Company

October 12, 2023, 4:30 – 6:00 pm - S100 Auditorium (Onsite)

Panel Chair

Professor Donald M. Reimer
Chief Operating Officer – IEOM Society
President, The Small Business Strategy Group, Detroit, Michigan, USA
Adjunct Faculty , Lawrence Technological University, Southfield, Michigan, USA

Donald M. Reimer is an adjunct faculty at the A. Leon Linton Department of Mechanical Engineering in College of Engineering at Lawrence Tech in Southfield, Michigan. He coordinates the Certificate of Entrepreneurial Engineering Skills. Mr. Reimer holds a Bachelor of Science degree in Industrial Management from Lawrence Technological University and a Master of Arts degree in Political Science from University of Detroit/Mercy. He is a Certified Management Consultant with over 35 years of experience in working with closely-held businesses. He has taught courses in entrepreneurship, strategic management, corporate entrepreneurship and innovation for engineers. Mr. Reimer is a member of the Lawrence Tech Kern Campus Committee, Coordinator of the Lawrence Tech Innovation Encounter. He is faculty Advisor of the Collegiate Entrepreneurs’ Organization. Mr. Reimer serves

as a Kern Fellow of The Kern Family Foundation, Co-Direct of the Coleman Fellows Program, member of the National Collegiate Entrepreneurs’ Organization Faculty Advisory Council and is a member of the American Society of Engineering Education. He has operated his own consulting company – The Small Business Strategy Group for 23 years. He published numerous articles on small business, entrepreneurship and strategic thinking. He has received several awards and recognition by local, state and federal agencies for his work in entrepreneurship and minority business development. Mr. Reimer served as member of the Minority Economic Development Committee of New Detroit. Mr. Reimer is member of the Small Business Advisory Council of the Detroit Regional Chamber of Commerce. Mr. Reimer is a member of Advisory Board of the Milwaukee Junction Small Business Assistance Center. He is also a member of the Applied Innovation Alliance. Mr. Reimer serves as a KEEN Fellow for The Kern Family Foundation and is a member of United States Association of Small Business and Entrepreneurship.

Panel Speaker I

Dr. Muhammad Sohail Ahmed
Professor of Engineering Management
GameAbove College of Engineering & Technology
Eastern Michigan University, Ypsilanti, Michigan

Muhammad Sohail Ahmed is a Professor in Engineering Management at Eastern Michigan University in Ypsilanti, Michigan. He received B.E degree in 1986 from N.E.D University of Engineering and Technology and MS (Mechanical Engineering, 1991), MS (Manufacturing Engineering, 1996) and Ph.D. (1999) degrees from Wayne State University in Detroit, Michigan. From 1990-1993 Dr. Ahmed worked for Ford Motor Company as a Computer-aided Engineering (CAE) application engineer working on Electric vehicle and on FEA for frontal crash design. From 1994 to 1999 Dr. Ahmed worked as a Research Associate/Scientist at Wayne State University's Department of Industrial Engineering, on four automotive research grants – worth 8 million dollars – funded by National Institute of Standards & Technology (NIST) in the area of dimensional control, reliability, problem solving, decision making and auto body digital virtual build. From 1999-2008 Dr. Ahmed was the manager for Wayne State University BS Manufacturing Engineering program at Focus HOPE, a civil rights organization in Detroit. Dr. Ahmed's research

work is in the area of decision support system, knowledge management, new product development, learning organization, lean and quality systems, project management and engineering education. Dr. Ahmed also worked on the National Science Foundation's (NSF) Manufacturing Education grant to Greenfield Coalition as a researcher and subject matter expert. He worked on the development of web based manufacturing engineering curriculum and course.

Panel Speaker II

Caryn Reed-Hendon, Ph.D.
Director of Diversity, Equity & Inclusion
Lawrence Technological University
Southfield, Michigan

Caryn Reed-Hendon, Ph.D. is the Founding Director of Diversity, Equity & Inclusion at Lawrence Technological University. At LTU, she is responsible for the daily operations of the Office for Diversity, Equity & Inclusion, and works in support of the President, the Provost, the Board of Trustees, the Dean of Students, and the University Human Resources. Dr. Reed-Hendon has twenty years of higher education experience, specifically in the areas of Student Affairs, with a focus on mentorship, pipeline/pathways programs, and JEDI professional development. She has co-authored and contributed to the greater discussion of diversity, equity, and inclusion in STEM and higher education. She has served in leadership for a number of professional and educational committees, and collaboratively presented on diversity, equity, and inclusion issues in higher education at regional, national, and international conferences. Dr. Reed-Hendon's memberships include Sigma Gamma Rho Sorority, Inc., National Association of Minority Medical Educators, National Association of Diversity Officers in Higher Education, Queens Collective, International Leadership Association, King Chavez Parks Future Faculty Fellows, and NASPA: Student Affairs Administrators in Higher Education. Dr. Reed-Hendon obtained her Bachelor of Arts Degree from University

of Michigan, Ann Arbor, and her Master of Arts Degree from Eastern Michigan University. She earned her Ph.D. in Educational Leadership from Oakland University in 2013.

Computer-Aided Engineering (CAE) Workshop

October 10, 2023 (Tuesday), Time: 8:00 – 9:45 am and 11:30 am – 1:00 pm

Venue: Lawrence Technological University, Southfield, Michigan

This workshop is designed to provide comprehensive coverage of Finite Element Analysis (FEA), with a focus on using Hypermesh as both a pre and post-processor, while employing ABAQUS as the solver code. The workshop will explore the following key topics:

1. Introduction to FEA, encompassing both linear and non-linear finite element analysis.
2. Various types of elements utilized in FEA simulations.
3. Materials commonly employed in FEA simulations.
4. Techniques for meshing simple geometries effectively.
5. An overview of different FEA solver codes available in the field.
6. A practical case study involving linear static analysis, implemented using the ABAQUS code.
7. A second case study involving VirtualComfortAnalysis, utilizing both the ABAQUS code and CASIMIR Software.



DM Noor Ruhul Alam
CAE Project Manager
The Woodbridge Group
Troy, Michigan

Mr. Noor Ruhul Alam is a CAE Project Manager at The Woodbridge Group. He worked at General Motors for more than 16 years as design release engineer at GM Tech Center, IRT Co-chairman (Interior) at General Motors Arlington plant, Texas and General Motors Detroit Hamtramck Plant, CAE Engineer at General Motors Technical Center, Warren, MI. He worked with Headliners and Garnish Product. Previously Mr. Alam worked as Issue Resolution Team Co-chairman (Interior) during 2013 –2015 at Arlington plant, Texas and Detroit Hamtramck Plant of General Motors. He was a CAE Engineer at General Motors during 2000 – 2013. He has worked on Computer Aided engineering (System level and Full vehicle level) for best practice and government required criteria in terms of stiffness and safety regulation for multiple SMT like Closure, Exterior and Interior. Mr. Alam has used many CAE tools for analysis including: HYPERMESH Pre and Post Processor, HYPERVIEW (post processor), HYPERGRAPH, LS-DYNA Pre and Post Processor, Primer Pre Processor, Solver code: NASTRAN, ABAQUS, OPTISTRUCT, LS-DYNA, UNIGRAPHICS, and Vis Mock Up. He has received Master of Engineering in Mechanical Engineering from University of South Alabama, Mobile, USA and BS in mechanical engineering from Khulna University of Engineering and Technology (KUET), Bangladesh.

Production Part Approval Process (PPAP) Workshop

October 10, 2023 (Tuesday), Time: 2:00 – 6:00 pm

Venue: Lawrence Technological University, Southfield, Michigan

Topics:

- Introduction to PPAP – 18 Elements of PPAP – Jd Marhevko
- Process Capabilities and SPC – Mike Vella
- Effectiveness of PPAP Process – Steven Sibrel

PPAP Speaker I



Jd Marhevko
VP of Quality – Electronics & ADAS Division U
ZF Group
Michigan

Jd is a ZF VP of Quality for their Electronics & ADAS Division U. Jd has held various senior executive roles in Lean, Quality, and Operations. Several sites have won Best In Class AME Excellence Awards and/or Industry Week Best Manufacturing Plant of the Year. In 2020, Jd was inducted into the inaugural USA's Women In Manufacturing (WiM) Hall of Fame. Jd is an ASQ Fellow, Shainin Medalist, CMQ/OE, CQE, CSSBB and MBB. Jd is the chair of two international ASQ QMD Content Management Committees (CMC): Strategic Planning Development & Deployment (SPDD) Q4.0. She holds a BSE and MSA. Jd is a Past-Chair of the ASQ QMD. She currently supports the ASQ QMD in a variety of capacities. Jd has co-authored several books and articles on Lean and Quality Systems.

PPAP Speaker II



Mike Vella
Retired Senior VP Operations
Suter Company an employee-owned food producer
Sycamore, Illinois

Mike has had a 42-year long career in Quality and Operations in the Automotive and Food Manufacturing industries. Mike retired in 2021 as Senior VP Operations at the Suter Company an employee-owned food producer located in Sycamore, Illinois. Prior to joining Suter, Mike was the Vice President and General Manager of TI Automotive's Brake and Fuel Group in North America before retiring in 2006. Mike was with TI Automotive for 30 years. Since his retirement, Mike

turned his efforts in spreading what he's learned. Most recently he has been a contributor to the global training site Udemy. As you may know, Udemy is an education technology company that provides online learning and teaching. As of June 2023, Udemy has sixty-four million learners, over 210,000 courses, and more than 75,000 instructors teaching courses in nearly seventy-five languages, with over 870 million course enrollments. Mike is a frequent speaker at ASQ and other organization events and shares a wealth of knowledge with each presentation. His energetic and interactive style always make him an interesting person to listen to and learn from.

PPAP Speaker III



Steven Sibrel

Senior Supplier Quality Manager
Harman International, Novi, MI
Past Chair – ASQ Greater Detroit

Steve Sibrel is a business process improvement trainer, coach and auditor with over 35 years of experience in the business and manufacturing world. He is currently working as Senior Supplier Quality Manager at Harman International, a manufacturer of audio and infotainment systems for consumer, professional, and automotive industries, with well-known brands such as JBL, Lexicon, Crown, Infinity, Mark Levinson, Becker and Harman-Kardon. Previously he held a number of engineering and management positions in diverse industries at Applied Materials (Semiconductor), NEC (Telecommunications) and Texas Instruments (Military). He has conducted over 200 supplier audits in North America, Europe, and Asia and is a Lead Auditor for ISO/TS16949, ISO9001, ISO13485, ISO17025, and 21CFR820. He has been the Chair for Professional Development for the ASQ Detroit section since 2008. He received the Distinguished Service Award in 2008 and the Leadership Award in 2013 from ASQ. Current ASQ Certifications held are Six Sigma Black Belt, Quality Engineer, Quality Inspector, Quality Auditor, and Manager of Quality/ Organizational Excellence. He is an adjunct faculty member at Macomb Community College. Steve has a BSEE degree from Rose Hulman Institute of Technology and an MSEE degree from Southern Methodist University.

Integrated Problem Solving Approach – Design Thinking, DFSS, Shainin Red X and Six Sigma Workshop

Wednesday, October 11, 2023, 8:00 - 10:00 am and 2:00 - 4:00 pm

Venue: Lawrence Technological University, Southfield, Michigan

Description: The workshop will focus on integrating multiple problem-solving strategies (PDCA, 8-D, DMAIC, Shainin Red X) across various financial, service, and manufacturing industries. Attendees will learn a structured approach to deconstruct concerns into manageable segments to identify root causes and prevent reoccurrence.

8:00 – 10:00 AM, October 11, 2023 (Wednesday)

Innovative and Unique Integrated Approach to Problem Solving

Speaker: Kush Shah

Topics:

- Why to use Integrated Approach to Problem Solving
- Overview of Design Thinking
- Overview of Design for Six Sigma
- Overview of Shainin Red X Methodology
- Overview of Lean Six Sigma
- How to Integrate These Methodologies for Problem Solving?
- Case Studies of Use of Integrated Methodologies for Outstanding Results



Kush Shah

Chief Executive Officer, Global Organizational Excellence Solutions LLC (GOES)
GM Fellow, ASQ Fellow, SSMBB, DFSS MBB, Shainin Red X Master, Design Thinking
Coach, ASQ-CMQ/OE, CSSBB, CQE, CQA, CBA
Michigan, USA

Kush Shah is globally recognized for his expertise, professionalism and outstanding contributions to the field of quality. He has a proven track record for developing strategies / quality systems / methodologies and solving tough quality problems. He has demonstrated his unwavering dedication in advancement of organizational excellence by introducing strategies and quality concepts for many organizations and individuals that resulted in a significant improvement in performance and customer experience. He has trained and coached thousands of individuals at all levels of organizations across a variety of businesses globally.

Kush is the CEO of Global Organizational Excellence Solutions which is training and consulting with their clients, manufacturing and service organizations, hands-on and side-by-side to achieve their strategic and operational goals and objectives through the innovative application of Organizational Excellence principles, methods, and integrated problem-solving tools.

Kush retired from General Motors after 37 years of employment and his last position was Senior Manager, Operational Excellence with responsibilities of coaching and training top leadership to front line employees in continuous improvement methodologies globally. Completed Operational Excellence projects have an impact of over \$1 Billion globally. He has held leadership positions in manufacturing, ME, R&D and quality functions. Kush has received the Chairman's Honor Award, People Make Quality Happen Award, Quality Driver Award and GM Trade Secret Award. He has also co-authored a US Patent which has led to commercial application.

Kush has received many prestigious awards for his contribution to the field of quality and organizational excellence including the Subir Chowdhury Medal of Quality Leadership – Society of Automotive Engineers (SAE) and the Gold Award – the Engineering Society of Detroit (ESD). He has received the Distinguished Service Award from American Society of Quality (ASQ) Detroit Section along with the Koth Award and Jarvis Award from the ASQ Automotive Division for his leadership and contribution to these organizations. He also received the ASQ Testimonial Award for his outstanding leadership and distinguished service to the Society. Kush is recognized as an ASQ Fellow and GM Fellow.

He has been a speaker at many global conferences. His contribution to improve healthcare quality has been featured in the Detroit Free Press. He is a well reputed Design Thinking coach and has run Design Thinking workshops in India, Korea, Mexico, Israel, Philippines and US which has resulted in innovative solutions and patents from the participants. He is currently working with Oakland School District to teach Design Thinking to teachers and High School students.

Kush has received Bachelor of Science – Mechanical Engineering from Maharaja Sayajirao University, Vadodara, India and Master of Science – Mechanical Engineering from the University of Michigan – Ann Arbor. Kush holds many certifications including Six Sigma Master Black Belt, Design for Six Sigma Master Black Belt, Shainin Red X Master, Certified Manager of Quality / Organizational Excellence, Certified Quality Engineer, Certified Quality Auditor, Certified Biomedical Auditor.

2:00 – 4:00 PM, October 11, 2023 (Wednesday)

Lean Six Sigma (DMAIC) and PDCA

Speaker: Dr. Saso Krstovski, MBB

Overview-Lean Six Sigma	Measure	Analysis	Improve	Control
Define Understand Six Sigma Six Sigma Fundamentals Selecting Projects Elements of Waste	Six Sigma Statistics Measurement System Analysis Process Capability	“X: Sifting Inferential Statistics Hypothesis Testing	Correlation Regression Design Experiments	Lean Controls Defect Controls Statistical Process Controls (SPC) Wrap Up



Dr. Saso Krstovski, MBB

Past Automotive University Programs Manager

Past Automotive Lean Manufacturing Manager / Six Sigma Master Black Belt

Dr. Saso Krstovski is a former automotive professional with over 25 years of expertise in complex structured problem-solving, working as Lean Manufacturing Manager and Lean Six-Sigma Master Black Belt. Dr. Krstovski has held many engineering assignments, including time working as a Test Engineer, Launch Test Engineer, and Electrical Control Engineer. During his tenure in automotive manufacturing, Dr. Krstovski has worked in several plant environments and skill teams such as Safety, Quality, Operations, and Finance and has held front-line supervision roles managing hourly UAW production employees. This exposure to new work concepts within automotive manufacturing has allowed Dr. Krstovski to amass a holistic engineering approach. As such, Dr. Krstovski has gained an extensive understanding of

the Six-Sigma methodologies. As a detail-oriented and data-driven engineer, Dr. Krstovski is an invaluable contributor to the lean and six sigma profession. He is highly distinguished and skilled with problem identification and resolution to avoid time and cost expenditures. Dr. Krstovski teaches at several Michigan Universities as an Adjunct Professor within the College of Engineering and Business. Dr. Krstovski research interests lie around System Optimization. He continues to collaborate actively with researchers at several universities. Dr. Krstovski provides guidance globally to doctoral candidates on dissertation direction. He graduated from Lawrence Technological University with a Doctorate of Engineering in Manufacturing Systems (DEMS). In addition, to his doctorate, Dr. Krstovski has a Master in Electrical Computer Controlled Systems and a Bachelor of Science in Electrical Engineering from Wayne State University. Dr. Krstovski has authored several publications and scientific articles on various engineering topics.

Geometric Dimensioning & Tolerancing (GD&T) Workshop

Thursday, October 12, 2023, 8:00 am - 4:30 pm

Venue: Lawrence Technological University, Southfield, Michigan



SPEAKER

John-Paul Belanger

President of Geometric Learning Systems

Rochester Hills, Michigan

John-Paul Belanger is president of Geometric Learning Systems, based in Rochester Hills, Michigan. He is certified as a Senior-Level GD&T Professional by the American Society of Mechanical Engineers. Mr. Belanger has been a full-time GD&T instructor and consultant for 20 years, traveling throughout North America and Europe helping corporate groups implement GD&T properly in design, manufacturing, and inspection activities. He holds a degree in aerospace engineering from the University of Michigan, specializing in aircraft design and safety.

Continue Education Unit (CEU) / Professional Development Unit (PDU) Credits will be available and a Certificate of Accomplishment will be provided.

About Workshop

To better define a product, geometric dimensioning and tolerancing (GD&T) is often used as a symbolic way to show tolerances on mechanical drawings. This one-day course covers the GD&T system per ASME Y14.5-2009, including why it reduces costs, how to interpret the symbols, and how to apply these tolerances correctly. Participants will learn the basic definitions and rules, the importance of datums, the meaning of each tolerance, and the impact on manufacturing and gaging. The class is a lecture format, with ample opportunity for questions, and participants are welcome to bring sample prints (with or without GD&T already applied) to discuss with the instructor during breaks or after the class.

Learning Objectives

By attending this seminar, you will be able to:

- Explain the benefits of geometric tolerancing.
- Identify datum features and determine their order of precedence.
- Identify and interpret each of the characteristic symbols.
- Describe the material condition modifiers and how "bonus" tolerance occurs.
- Correctly interpret GD&T feature control frames, and explain the impact on manufacturing and inspection.

Who Should Attend

This course is ideal for anyone who has a need to apply or interpret geometric tolerances on a product print. Product engineers, manufacturing engineers, CAD designers, quality inspectors, and other engineering and manufacturing personnel will all benefit from becoming fluent in GD&T.

Prerequisites

Participants should have knowledge of basic blueprint reading.

TOPICAL OUTLINE

- **Drawings and Dimensioning**
 - Importance of engineering drawings
 - The need for geometric dimensioning and tolerancing
 - Quality issues – how GD&T fits into other standards
 - GD&T standard: ASME Y14.5-2009
- **Introduction to GD&T Symbols and Terms**
 - Definitions – feature, feature of size, actual mating envelope
 - Material conditions – MMC, LMC, RFS
 - Reading a feature control frame
- **Rules and Concepts of GD&T**
 - Rule #1 – Size controls form
 - Rule #2 – Implied RFS
 - Basic dimensions
 - Virtual condition
 - Bonus tolerance
- **Form Tolerances**
 - Flatness
 - Straightness
 - Circularity
 - Cylindricity
 - Straightness and flatness applied to a feature of size
- **Datums**
 - Purpose of datums in GD&T
 - The datum reference frame – primary, secondary, tertiary
 - Feature-of-size datums
 - Datums with the "M" modifier
- Compound datum features
- Datum targets
- How to select datums for a part
- **Profile Tolerances**
 - General definition of profile
 - Profile of a line
 - Profile of a surface
 - Profile with datum references
 - Composite profile control
- **Orientation Tolerances**
 - Perpendicularity
 - Angularity
 - Parallelism
- **Location Tolerances**
 - Definition of "true position"
 - Application of position at RFS
 - Using position with MMC or LMC
 - Composite position control
 - Projected tolerance zone
 - Concentricity – why it is not recommended
 - Symmetry
- **Runout Tolerances**
 - Difference between runout and other circular controls
 - Circular runout
 - Total runout
- **Wrap-up and Course Evaluation**

Parallel Sessions

Tuesday, October 10, 2023

	Room 1 – S100 Auditorium	Room 2 – S108	Room 3 – C406 (Welcome Center)	Room 4 - Virtual
8:00	Smart Mobility and EV	Optimization	Computer-Aided Engineering (CAE) Workshop	Undergraduate Student Paper Competition Sponsored by Siemens
10:00	Welcome Address: Prof. Tarek M. Sobh, Ph.D., P.E., President, Lawrence Technological University			
10:20	Opening Keynote: Dr. Donna L. Bell, Executive Vice President – Product Creation, Engineering, and Supply Chain, Lordstown Motors, Farmington Hills, Michigan, United States			
11:00	Keynote: John Hawkins, Vice President, North America, Electrified Powertrain Technology, ZF Group, Farmington Hill			
11:40	Keynote: Dr. Jorge Arinez, Lab Group Manager, Technical Fellow for Manufacturing Systems and Controls Research, GM Global Research and Development, Warren, Michigan, USA			
12:20	Keynote: Ankil Shah, Vice President, Toyota Motor North America (TMNA) R & D			
1:00	Buffet Lunch at LTU Cafeteria			
2:00	Keynotes: Dr. Manzoor Hussain, Registrar and Professor, Department of Mechanical Engineering, Jawaharlal Nehru Technological University (JNTU), Hyderabad, Telangana, India Dr. Manuel Montoya, General Director of the Automotive Cluster of Nuevo León (CLAUT), Monterrey, Mexico			
2:00	Keynotes	Engineering Education	PPAP Workshop	Smart Mobility and EV Competition
3:00	EV Panel	Artificial Intelligence (AI)		Industry 4.0 and Industry Solutions

Wednesday, October 11, 2023

	Room 1 – S100 Auditorium	Room 2 – S108	Room 3 – C406 (Welcome Center)	Room 4 - Virtual
8:00	Smart Mobility and EV	Competitions	Integrated Problem Solving Workshop	Human Factors and Ergonomics Competition sponsored by CINTAS
10:20	Keynote: Charon Morgan, Vice President of Engineering, Autoliv Americas, Auburn Hills, Michigan, USA			
11:00	Keynote: Firasat Siddiqui, Director Product Strategy and Projects, Harman International, Novi, Michigan, USA			
11:40	Keynotes: Frederic Flory, RO Director for Powertrain Electrification Mobility for North America, Valeo, Auburn Hills, Michigan Snajaka Wirasingha, R&D Director-Americas, Electrified Mobility, Valeo, Auburn Hills, Michigan			
12:20	Keynote:			
1:00	Buffet Lunch at LTU Cafeteria			
2:00	Keynotes: Dr. Steven Marshall, Valeo, Auburn Hills, Michigan Shannon Dare Wayne, Ph.D. and Ratna Babu Chinnam, Ph.D., Department of Industrial & Systems Engineering Wayne State University, Detroit, MI 48202, USA			
2:00	Keynotes	Technical Presentations	Integrated Problem Solving Workshop	Technical Presentations
3:00	Smart Mobility Panel	Technical Presentations		Industry Solutions

Thursday, October 12, 2023

	Room 1 – S100 Auditorium	Room 2 – S108	Room 3 – C406 (Welcome Center)	Room 4 - Virtual
8:00	Smart Mobility and EV	PLM and Material Engineering	Geometric Dimensioning & Tolerancing (GD&T) Workshop	Supply Chain Management (SCM)
10:20	Keynote: Lokesh Setti, Flexible Vehicle Architecture Supervisor, Ford Motor Company, Dearborn, Michigan, United States			
11:00	Keynote: Akim Khalef, Sustainable Feedstock & Recycling, FORVIA Faurecia, Auburn Hills, Michigan, USA			
11:40	Keynote: Alan Amici, President and CEO, Center for Automotive Research (CAR), Ann Arbor, Michigan, USA			
12:20	Keynote: Dr. Mario Chauca, Professor, Ricardo Palma University and Researcher, Renacyt-Concytec, Peru			
1:00	Buffet Lunch at LTU Cafeteria			
2:00	Keynote: Dr. Samira Keivanpour, Dept. of Mathematical and Industrial Engineering, Polytechnique Montréal			
2:00	Keynote	Technical Presentations	Geometric Dimensioning & Tolerancing (GD&T) Workshop	Lean, Quality and Six Sigma
3:00	EV Charging Infrastructure Panel	Technical Presentations		Technical Presentations

October 10, 2023 (Tuesday)

October 10, 2023 (Tuesday) - Session: 8:00 – 9:45 am

8:00 am – 9:45 am, TUESDAY

Onsite Room 1 (S100)

Smart Mobility and EV

Session Chair: Sundaravalli Narayanaswami, Indian Institute of Management, Ahmedabad, India

ID 94 The Role of Smart Grids in Smart Mobility

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

ID 7 NEMMP: A Commentary on India's State Electric Mobility Policy

Sundaravalli Narayanaswami, Indian Institute of Management, Ahmedabad, India

ID 24 Solar Powered Grass Cutter with Obstacle Avoidance Function Using IoT

Wong Jessen, Noor Idayu Mohd Tahir and Noshin Fatima, Faculty of Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, 56000, Malaysia

ID 78 Simulations of Electric Vehicle Driving Range and Battery Aging Using Experimental Data

Yiqun Liu, Director, Center for Applied Battery Production and Testing
Nicci VandeVeegaete, Faculty Program Coordinator and Advisor, Industrial Technology & Management
Russell A. Leonard, Professor, Automotive Engineering Technology, Ferris State University, Big Rapids, Michigan, USA

ID 62 Life Cycle Employment and Carbon Footprint Assessment of Automation and Electrification in the US Trucking Sector

Ja'far M. Mandouri, M.Sc. Engineering Management, Mechanical & Industrial Engineering Department, Qatar University, Doha, Qatar
Nuri C. Onat, Associate Professor, Qatar Transportation and Traffic Safety Center, College of Engineering, Qatar University, Doha, Qatar
Murat Kucukvar, Associate Professor, Department of Business Ethics and Legal Studies, Daniels College of Business, University of Denver
Denver, CO, USA

ID 185 Design and Implementation of PV based EV DC Fast Charging Station for University & Community Engagement

Reg Pecen, Quanta Endowed Professor, Department of Engineering Technology, College of Science and Engineering Technology, Sam Houston State University, Huntsville, Texas, USA
Faruk Yildiz & Michael U. Dakeev, Department of Engineering Technology, Sam Houston State University, Huntsville, Texas, USA

8:00 am – 9:45 am, TUESDAY

Onsite Room 2 (S108)

Optimization

Session Chair: Mohamed A. Zohdy, Professor, School of Engineering and Computer Science, Oakland University, Rochester, Michigan, USA

ID 64 The Relationship Between Supply Chain Integration and Business Performance in Saudi SMEs

Ibrahim H. Y. Albariqi, PhD Student in Systems Engineering, School of Engineering and Computer Science, Oakland University, Rochester, Michigan, USA
Mohamed A. Zohdy, Professor, School of Engineering and Computer Science, Oakland University, Rochester, Michigan, USA

ID 58 Linear and Integer Programming for Production Optimisation in an Aluminum Company

Eveth N. Nwobodo-Anyadiegwu, Department of Quality and Operations Management, Faculty of Engineering & the Built Environment, University of Johannesburg, South Africa

ID 101 Simulation to Increase the Execution of Work Orders of The Company Proing S.A.S., Using Flexsim Software

Luis Fernando Pedraza Ruiz, Department of Engineering, Industrial Engineering, Fundación Universitaria de Popayán, Popayán, Colombia
Paula Alejandra Omen Salazar, Industrial Engineer, Fundación Universitaria de Popayán, Popayán, Colombia
Mayra Alejandra Aguirre Polanco, Industrial Engineer, Fundación Universitaria de Popayán, Popayán, Colombia
Yuly Andrea Moreno, Department of Engineering, Industrial Engineering, Fundación Universitaria de Popayán, Popayán, Colombia

ID 32 Design of Product Preparation Planning and Control for Franchised Food Stall

Patcharin Jomkui, Master of Engineering Program in Industrial Engineering, Chulalongkorn University, Bangkok 10330, Thailand

8:00 am – 9:45 am, TUESDAY and 11:30 – 1:00 pm

Onsite Room 3 (C406-Welcome Center)

Computer-Aided Engineering (CAE) Workshop

DM Noor Ruhul Alam
CAE Project Manager
The Woodbridge Group
Troy, Michigan

8:00 am – 9:45 am, TUESDAY

Room 4 - Virtual

Undergraduate Student Paper Competition Sponsored by Siemens (See Virtual Schedule at the end)

October 10, 2023 (Tuesday) - Session: 10:00 am – 1:00 pm

10:00 am – 1:00 pm, TUESDAY

Onsite Room 1 (S100)

Welcome Keynote Address: Tuesday, October 10, 10:00 am

Prof. Tarek M. Sobh, Ph.D., P.E.
President
Lawrence Technological University

Keynote I (Opening Keynote): Tuesday, October 10, 10:20 – 11:00 am

Dr. Donna L. Bell
Executive Vice President – Product Creation, Engineering, and Supply Chain
Lordstown Motors
Farmington Hills, Michigan, United States

Keynote II: Tuesday, October 10, 11:00 – 11:40 am

John Hawkins
Vice President, North America, Electrified Powertrain Technology
ZF Group
Farmington Hills, Michigan, USA

Keynote III: Tuesday, October 10, 11:40 am – 12:20 pm

Dr. Jorge Arinez
Lab Group Manager, Technical Fellow for Manufacturing Systems and Controls Research
GM Global Research and Development, Warren, Michigan, USA

Keynote IV: Tuesday, October 10, 12:20 – 1:00 pm

Ankil Shah
Vice President
Toyota Motor North America (TMNA) R & D

1:00 – 2:00 pm – Lunch Buffet at LTU Cafeteria

October 10, 2023 (Tuesday) - Session: 2:00 – 3:00 pm

2:00 pm – 3:00 pm, TUESDAY

Onsite Room 1 (S100)

Keynotes

Dr. Manzoor Hussain
Registrar and Professor, Department of Mechanical Engineering
Jawaharlal Nehru Technological University (JNTU), Hyderabad, Telangana, India

Dr. Manuel Montoya
General Director of the Automotive Cluster of Nuevo León (CLAUT)
Monterrey, Mexico

2:00 pm – 6:00 pm, TUESDAY

Onsite Room 3 (C406-Welcome Center)

Production Part Approval Process (PPAP) Workshop

Topics:

Introduction to PPAP – 18 Elements of PPAP – Jd Marhevko

Process Capabilities and SPC – Mike Vella

Effectiveness of PPAP Process – Steven Sibrel

PPAP Speaker I	PPAP Speaker II	PPAP Speaker III
<p>Jd Marhevko VP of Quality – Electronics & ADAS Division U ZF Group, Michigan</p>	<p>Mike Vella Retired Senior VP Operations Suter Company an employee-owned food producer, Sycamore, Illinois</p>	<p>Steven Sibrel Senior Supplier Quality Manager Harman International, Novi, MI Past Chair – ASQ Greater Detroit</p>

2:00 pm – 3:45 pm, TUESDAY

Room 4 - Virtual

Smart Mobility and EV Competition (See Virtual Schedule at the end)

October 10, 2023 (Tuesday) - Session: 3:00 – 4:30 pm

3:00 pm – 4:30 pm, TUESDAY

Onsite Room 1 (S100)

EV Panel – Vehicle Electrification

Panel Chair:

Dr. Saso Krstovski, MBB
Past Automotive University Programs Manager
Past Automotive Lean Manufacturing Manager / Six Sigma Master Black Belt

Panel Speaker I

Amit Ranjan
Engineering Manager – EV Battery Manufacturing
Founder of Energy Efficiency Startup
Canoo

Panel Speaker II

Mary Beth MacDonald
Retired Program Manager – Electrification at General Motors

Panel Speaker III

Ms. Kayla Buczkowski
Applications Service Engineer
A&D Technology
4622 Runway Blvd
Ann Arbor, MI 48108

Panel Speaker IV

Dr. Balakumar Muniandi
Associate Professor of Practice
Department of Electrical and Computer Engineering
Lawrence Technological University
Southfield, Michigan

Panel Speaker V

Scott Lukomski
EV Business Director
Marposs Corporation
Plymouth, Michigan, United States

3:00 pm – 4:30 pm, TUESDAY

Onsite Room 2 (S108)

Artificial Intelligence (AI)

Session Chair: Nicci VandeVeegaete, Ferris State University, Big Rapids, Michigan, USA

ID 22 Deep Neural Network Algorithm for Wind Speed Prediction

Ali AlArjani, Industrial Engineering Department, College of Engineering, Prince Sattam Bin Abdulaziz University, AlKharij, Saudi Arabia

ID 30 LightGBM-DDoS: Intelligent Model for Detecting Distributed Denial of Service Attacks in Software-Defined Networking

Kareem M. Kabirat, Aborisade D. Olaniyi and Onashoga S. Adebukola, Department of Computer Science, Federal University of Agriculture, Abeokuta

T.O. Kehinde, Department of Industrial and Systems Engineering, Hong Kong Polytechnic University, Hong Kong

ID 8 Bladeless Tesla Turbine: an approach to extract green energy from the rivers

Mahbulul Alam, BUET, Bangladesh

Engineering Education

ID 27 Creation of Professional Certificates for the Automotive Industry

Angélica María Chapa Jasso and Corazón Beas Zertuche, Universidad de Monterrey, Mexico

ID 77 Advanced Battery Production and Testing Facility Strengthens Skills of Engineering Students in Vehicle Electrification

Nicci VandeVeegaete, Faculty Program Coordinator and Advisor, Industrial Technology & Management, Ferris State University, Big Rapids, Michigan, USA

Yiqun Liu, Director, Center for Applied Battery Production and Testing, Ferris State University, Big Rapids, Michigan, USA

Russell A. Leonard, Professor, Automotive Engineering Technology, Ferris State University, Big Rapids, Michigan, USA

2:00 pm – 6:00 pm, TUESDAY

Onsite Room 3 (C406-Welcome Center)

Production Part Approval Process (PPAP) Workshop

3:00 pm – 4:30 pm, TUESDAY

Room 4 - Virtual

Industry 4.0 and Industry Solutions (See Virtual Schedule at the end)

October 11, 2023 (Wednesday)

October 11, 2023 (Wednesday) - Session: 8:00 – 9:45 am

8:00 am – 9:45 am, WEDNESDAY

Onsite Room 1 (S100)

Smart Mobility and EV

Session Chair: Kayla Buczkowski, Systems Engineer, Test & Validation at EAVX

ID 72 Integrating Hardware and Software Systems for Enhanced Decision-Making in Autonomous Vehicles

Kelvin Kwakye and Younho Seong, Department of Industrial & Systems Engineering, North Carolina A&T State University, Greensboro, North Carolina, USA

Xingguang Li and Sun Yi, Department of Mechanical Engineering, North Carolina A&T State University, Greensboro, North Carolina, USA

ID 29 Difficulties in Emerging Battery Technology Testing

Kayla Buczkowski, Systems Engineer, Test & Validation at EAVX, Masters of Engineering Management and Masters of Industrial, Engineering Candidate of the College of Engineering, Lawrence Technological University, Southfield, MI 48075, USA

ID 102 Decoherence-Resistant Elastic Bits: A Novel Approach to Quantum Analogue Computing Using Coherent Superpositions of States

Kazi Tahsin Mahmood, Wayne State University, United States

ID 63 Assessment of the Attributes and Thermal Challenges of Electrified Vehicles

Bashar S. AbdulNour, Ph.D., Professor of Engineering Practice, Kettering University, Flint, MI, USA

8:00 am – 9:45 am, WEDNESDAY

Onsite Room 2 (S108)

Competitions

Session Chair: Sundaravalli Narayanaswami, Indian Institute of Management, Ahmedabad, India

Simulation Competition

ID 39 Development of Electric Vehicle Simulation Model with DC BUS V/I-dependent Efficiency Map for Si IGBT and SiC MOSFET-based Traction Inverters

Kenton Kyger, Allan R. Taylor, and Chen Duan, Electrical and Computer Engineering Department, Kettering University, Flint, Michigan 48504, USA

ID 113 Performance analysis of the footwear manufacturing assembly line using value stream mapping-simulation modeling (VSM-SM)

Hiluf Reda, Senior Lecturer, Department of Industrial Engineering, Debre Berhan University, Debre Berhan, Ethiopia

Akshay Dvivedi, Senior Professor, Department of Mechanical and Industrial Engineering, Indian Institute of Technology, Roorkee, Roorkee-247667, Uttarakhand, India

Undergraduate Research Competition sponsored by Daikin Applied

ID 80 Characterization of microplastic contamination in marine fauna based on human health impact

Mark Alarco, Valeria Pacussich, Ariet Salvatierra and Héctor Vega, Engineering Faculty, Ricardo Palma University, Lima, Surco 15039, Peru

Mario Chauca, Engineering Research for Science and Technology research group (ERSTECH), Ricardo Palma University, Lima, Surco 15039, Peru

High School STEM Competition

ID 114 Probing a galaxy group with an FRB dispersion measure

Tejaswini Samanta, Army Public School Delhi Cantt, India

ID 208 Self-standing Blind Cane: An Assistive Device for the Visually Challenged

Suhani Dalela, Senior, Saline High School

Dr. Muhammad Ahmed, Professor, Game Above College of Engineering, Eastern Michigan University

Human Factors and Ergonomics Competition

ID 96 Advancement of Operator Well-Being in Agriculture: A Study of Whole-Body Vibration Impact and Mitigation in Tractor Operations

Chander Prakash, Lakhwinder Pal Singh and Ajay Gupta, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab, India-144008

8:00 am – 9:45 am, WEDNESDAY

Onsite Room 3 (C406)

Integrated Problem Solving Approach - Design Thinking, DFSS, Shainin Red X and Six Sigma Workshop

8:00 AM - 10:00 AM – Speaker Kush Shah

Innovative and Unique Integrated Approach to Problem Solving

Topics:

Why to use Integrated Approach to Problem Solving
 Overview of Design Thinking
 Overview of Design for Six Sigma
 Overview of Shainin Red X Methodology
 Overview of Lean Six Sigma
 How to Integrate These Methodologies for Problem Solving?
 Case Studies of Use of Integrated Methodologies for Outstanding Results

Speaker:

Kush Shah

Chief Executive Officer, Global Organizational Excellence Solutions LLC (GOES)

GM Fellow, ASQ Fellow, SSMBB, DFSS MBB, Shainin Red X Master, Design Thinking Coach, ASQ-CMQ/OE, CSSBB, CQE, CQA, CBA
 Michigan, USA

8:00 am – 9:45 am, WEDNESDAY

Onsite Room 3 (C406)

Human Factors and Ergonomics Competition sponsored by CINTAS (See Virtual Schedule at the end)

October 11, 2023 (Wednesday) - Session: 10:00 am – 1:00 pm

10:00 am – 1:00 pm, WEDNESDAY

Onsite Room 1 (S100)

Keynotes

10:20 – 11:00 Keynote:

Charon Morgan
Vice President of Engineering
Autoliv Americas
Auburn Hills, Michigan, USA

11.00 - 11:40 Keynote:

Firasat Siddiqui
Director Product Strategy and Projects
Harman International
Novi, Michigan, United States

11:40- 12:00 Keynote:

Frederic Flory
RO Director for Powertrain Electrification Mobility for North America
Valeo
Auburn Hills, Michigan

Snajaka Wirasingha
R&D Director-Americas, Electrified Mobility
Valeo
Auburn Hills, Michigan

12:20- 1:00 Keynote Speakers:

1:00 – 2:00 pm – Lunch Buffet at LTU Cafeteria

October 10, 2023 (Wednesday) - Session: 2:00 – 3:00 pm

2:00 pm – 3:00 pm, WEDNESDAY

Onsite Room 1 (S100)

Keynotes

Dr. Steven Marshall
Valeo
Auburn Hills, Michigan

ID 203 Integrated Framework for Design Thinking & Strategic Product Planning

Shannon Dare Wayne, Ph.D. and Ratna Babu Chinnam, Ph.D.

Department of Industrial & Systems Engineering
Wayne State University, Detroit, MI 48202, USA

2:00 pm – 3:00 pm, WEDNESDAY

Onsite Room 2 (S108)

Smart Mobility and EV Competition

Session Chair: Dr. Manzoor Hussain, JNTUH

ID 206 Regeneration Braking System and Battery Shifting in Electric Vehicle

Phani R. Katuru, Director, Chainsys Corporation USA

Mopidevi Yaswanth, MTech Student, JNTU College of Engineering, Hyderabad, India

Qutubuddin S.M., Industrial and Production Engineering Department, P.D.A. College of Engineering, Gulbarga, Karnataka State, INDIA

M. Shasaif Hussain, Mitsubishi Motors, USA

M. Manzoor Hussain, Department of Mechanical Engineering, Jawaharlal Nehru Technological University Hyderabad, India

ID 207 STEM Manipulatives Additive Manufacturing Student Business Plan

Carlos Adachi, Jon Goenaga, Rafael Rezende Mendes, Neil Gordon Murray Jr., A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering, Lawrence Technological University, Southfield, MI 48075, USA

ID 210 Enhancing Safety and Security in Advanced Driver Assistance Systems (ADAS) through Optimized Encryption Algorithms

Kaushik Mehta

Department of Electrical and Computer Engineering

Lawrence Technological University

Southfield, MI 48075, USA

Dr. George Pappas

Assistant Professor and Director of MSAI program

Department of Electrical and Computer Engineering

Lawrence Technological University

Southfield, MI 48075, USA

Masters Thesis Competition

ID 209 Multi-modal Vehicle Detection: Fusing 3D-Lidar and Color Camera Data

Siranjeev Venkateswaran

Department of Electrical & Computer Engineering

Master's Student, College of Engineering

Lawrence Technological University

Southfield, Michigan, USA

Dr. George Pappas

Assistant Professor and Director of MSAI program

Department of Electrical and Computer Engineering

Lawrence Technological University

Southfield, MI 48075, USA

2:00 pm – 4:00 pm, WEDNESDAY

Onsite Room 3 (C406 Welcome Center)

Integrated Problem Solving Approach - Design Thinking, DFSS, Shainin Red X and Six Sigma Workshop

2:00 PM - 4:00 PM

Lean Six Sigma (DMAIC) and PDCA

Speaker:

Dr. Saso Krstovski, MBB

Past Automotive University Programs Manager
Past Automotive Lean Manufacturing Manager / Six Sigma Master Black Belt

2:00 pm – 3:45 pm, WEDNESDAY

Room 4 - Virtual

Technical Presentations (See Virtual Schedule at the end)

October 11, 2023 (Wednesday) - Session: 3:00 – 4:30 pm

3:00 pm – 4:30 pm, WEDNESDAY

Onsite Room 1 (S100)

Smart Mobility Panel

Panel Chair

Steven Sibrel
Senior Supplier Quality Manager
Harman International, Novi, MI
Past Chair – ASQ Greater Detroit

Panel Speaker I

Dr. Jianhua Zhou
Fellow of Society of Automotive Engineers (SAE) International
Fellow of American Society for Quality (ASQ)
Former Vice President of Ford China Quality and New Model Programs
Former Vice President of Ford Asia Pacific Quality and New Model Programs
Former Ford Corporate Executive Technical Leader
Member of Ford Technology Advisory Board

Panel Speaker II

Therese Niemi
EV Curious | Technical Advisor for Light Metals
Business Development Manager
Henkel
Madison Heights, Michigan

Panel Speaker III

Xubin Song
Founder and CEO
ePower Mobility
Canton, Michigan
United States

Panel Speaker IV

Clay Phillips
Mobility Technology Lead
Michigan Small Business Development Center
Bloomfield Hills, Michigan

Panel Speaker V

Matt Smith
Transportation Technology and Mobility
Kimely-Horn
Southfield, Michigan, United States

3:00 pm – 4:30 pm, WEDNESDAY

Onsite Room 2 (S108)

3:00 pm – 4:00 pm, WEDNESDAY

Onsite Room 3 (C405)

Integrated Problem Solving Approach - Design Thinking, DFSS, Shainin Red X and Six Sigma Workshop

Lean Six Sigma (DMAIC) and PDCA

Speaker:

Dr. Saso Krstovski, MBB

Past Automotive University Programs Manager

Past Automotive Lean Manufacturing Manager / Six Sigma Master Black Belt

3:00 pm – 4:30 pm, WEDNESDAY

Room 4 - Virtual

Technical Presentations (See Virtual Schedule at the end)

October 12, 2023 (Thursday)

October 12, 2023 (Thursday) - Session: 8:00 – 9:45 am

8:00 am – 9:45 am, THURSDAY

Onsite Room 1 (S100)

Smart Mobility and EV

Session Chair: Soujanya Pillala, Eastern Michigan University, United States

ID 147 Impact of Integration Management on the Infrastructure design for Autonomous Vehicles compared to the cybersecurity risk management in Autonomous Vehicles

Soujanya Pillala, Eastern Michigan University, United States

ID 79 User acceptance of smart mobile resources in vehicular technologies based upon user experience and comfortability: A research review User Experiences (UX)

Tasfia Bari, Eastern Michigan University, United States

ID 57 Preliminary Investigation for Value-Added Production Planning and Control of Plastic Recycling: A Case Study

Paul Amaechi Ako (formerly Ozor), Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Department of Mechanical Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria

Charles Mbohwa, Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Eveth Nkeiruka Nwobodo-Anyadiegwu, Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

ID 211 Leveraging AI for Projections of Food Item Growth in Top Five GDP Countries

Rohith Rao Yannamaneni, Yukthakiran Matla

Lawrence Technological University

Southfield, MI 48075, USA

ryannaman@ltu.edu, yukthakiran.matla@gmail.com,

Dr. George Pappas

Assistant Professor and Director of MSAI program

Department of Electrical and Computer Engineering

Lawrence Technological University

Southfield, MI 48075, USA

8:00 am – 9:45 am, THURSDAY

Onsite Room 2 (S108)

PLM and Material Engineering

Session Chair: Rohit Kumar, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab, India

ID 40 Understanding Asbestos Free Brake-Pad: Using Carbon Nanotube derived from rice husk

Paul Amaechi Ako (formerly Ozor), Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Department of Mechanical Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria

Victor Sunday Aigbodion, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Africa Centre of Excellence, ACE-SPED University of Nigeria Nsukka Nigeria

Department of Metallurgical and Materials Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria

Charles Mbowha, Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

ID 41 Unveiling the Super-Hydrophobic and Self-Cleaning Properties of CaO Nanoparticles Derived from Oyster Shell for Electrical Sheathing Insulator Applications

Victor Sunday Aigbodion, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa
Africa Centre of Excellence, ACE-SPED University of Nigeria Nsukka Nigeria

Department of Metallurgical and Materials Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria

Charles Mbowha, Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Paul Amaechi Ako (formerly Ozor), Department of Quality and Operations Management, Faculty of Engineering and Built Environment, University of Johannesburg, P. O. Box 534 Auckland Park, South Africa

Department of Mechanical Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria

ID 81 Generalized Reynolds Equation for Rough Surfaces: Application to Roller Bearings

Dr. Chirra Kesava Reddy, Department of Mechanical Engineering, Universal College of Engineering and Technology, Dokiparru, Guntur, Andhra Pradesh; India

Dr. M. Manzoor Hussain, Department of Mechanical engineering, JNTUH, Hyderabad, Telangana, India

Dr. R. Raghavendra Rao, Department of Science & Humanities, Universal College of Engineering and Technology, Dokiparru, Guntur, Andhra Pradesh; India

ID 97 Environmental Sustainability of Wheat Production system in Northern India: A Cradle to Gate Analysis

Rohit Kumar, Arvind Bhardwaj, Lakhwinder Pal Singh and Gurraj Singh, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab, India

ID 59 Mitigating the Sustainability Challenge in Lean Healthcare

Eveth Nwobodo-Anyadiiegwu, University of Johannesburg, South Africa

Charles Mbowha, South Africa

Michael Mutingi, Namibia University of Science and Technology, Namibia

8:00 am – 9:45 am and 11:00 – 4:30 pm, THURSDAY

Onsite Room 3 (C406 Welcome Center)

Geometric Dimensioning & Tolerancing (GD&T) Workshop

SPEAKER

John-Paul Belanger

President of Geometric Learning Systems

Rochester Hills, Michigan

8:00 am – 9:45 am and 11:00 – 4:30 pm, THURSDAY

Virtual Room 4

Supply Chain Management (See Virtual Schedule at the end)

October 10, 2023 (Thursday) - Session: 10:00 am – 1:00 pm

10:00 am – 1:00 pm, THURSDAY

Onsite Room 1 (S100)

Keynotes

Keynote XIII: Thursday, October 12, 10:20 – 11:00 am

Lokesh Setti

Flexible Vehicle Architecture Supervisor

Ford Motor Company

Dearborn, Michigan, United States

Title: Next Generation EV Platforms

Keynote XIV: Thursday, October 12, 11:00 – 11:40 am

Akim Khalef
FORVIA Faurecia
Auburn Hills, Michigan, United States

ID 70 Decarbonization Beyond Vehicle Electrification: Delivering Innovative Sustainable Materials
Akim Khalef, Feedstock & Recycling Manager, FORVIA North America, Auburn Hills, MI 48326, United States

Keynote XV: Thursday, October 12, 11:40 – 12:20 pm

Alan Amici
President and CEO
Center for Automotive Research
Ann Arbor, Michigan, USA

Keynote Title: "The EV Transition"

Keynote XVI: Thursday, October 12, 12:20 – 1:00 pm

Dr. Mario Chauca
Researcher Professor
Ricardo Palma University
Santiago de Surco, LI 15039, PERU
Researcher of the RENACYT-CONCYTEC

1:00 – 2:00 pm – Lunch Buffet at LTU Cafeteria

October 12, 2023 (Thursday) - Session: 2:00 – 3:00 pm

2:00 pm – 3:00 pm, THURSDAY

Onsite Room 1 (S100)

Keynote

Dr. Samira Keivanpour
Department of Mathematical and Industrial Engineering
Polytechnique Montréal, Canada

2:00 pm – 3:00 pm, THURSDAY

Onsite Room 2 (S108)

Technical Presentations

2:00 pm – 3:00 pm, THURSDAY

Onsite Room 3 (C406)

Geometric Dimensioning & Tolerancing (GD&T) Workshop

SPEAKER

John-Paul Belanger
President of Geometric Learning Systems
Rochester Hills, Michigan

October 12, 2023 (Thursday) - Session: 3:00 – 4:30 pm

3:00 pm – 4:30 pm, THURSDAY

Onsite Room 1 (S100)

EV Charging Infrastructure Panel

Panel Chair:

Kush Shah

Chief Executive Officer, Global Organizational Excellence Solutions LLC (GOES)
GM Fellow, ASQ Fellow, SSMBB, DFSS MBB, Shainin Red X Master, Design Thinking Coach, ASQ-CMQ/OE, CSSBB, CQE, CQA, CBA
Michigan, USA

Panel Speaker I

Dr. Morteza Nazari-Heris (Senior Member, IEEE)
Assistant Professor of Electrical Energy Systems
Lawrence Technological University
Southfield, Michigan

Panel Speaker II

Saif Siddique
Engineering Manager
Power Electronics/ Power Converter
Stellantis
Auburn Hills, Michigan

Panel Speaker III

Dr. George Pappas
Assistant Professor & Director, MSAI graduate program
Electrical + Computer Engineering
Lawrence Technological University
Southfield, Michigan, USA

3:00 pm – 4:30 pm, THURSDAY

Onsite Room 2 (S108)

Technical Presentations

3:00 pm – 4:30 pm, THURSDAY

Onsite Room 3 (C405)

Geometric Dimensioning & Tolerancing (GD&T) Workshop

SPEAKER

John-Paul Belanger
President of Geometric Learning Systems
Rochester Hills, Michigan

Diversity and Inclusion Panel sponsored by Ford Motor Company October 12, Thursday, 4:30 – 6:00 pm

Panel Chair:

Professor Donald M. Reimer
President, The Small Business Strategy Group, Detroit, Michigan, USA
Adjunct Faculty – A. Leon Linton Department of Mechanical Engineering
Lawrence Technological University, Southfield, Michigan, USA

Panel Speaker I

Dr. Muhammad Sohail Ahmed
Professor of Engineering Management
GameAbove College of Engineering & Technology
Eastern Michigan University
Ypsilanti, Michigan

Panel Speaker II

Caryn Reed-Hendon, Ph.D.
Director of Diversity, Equity & Inclusion
Lawrence Technological University
Southfield, Michigan

Virtual Presentations

8:00 am – 9:45 am, TUESDAY

Virtual Room 4

Undergraduate Student Paper Competition Sponsored by Siemens

Session Chair: Dr. Mizanur Rahman

ID 28 Picking Process Management Model to Improve Order Processing Time in a Spare Parts Warehouse using the 5'S Technique: Case of the Automotive Sector

Enrique Salvador Fernández Caballero and Juan Diego Torres Calderón De Vettori, Facultad de Ingeniería, Universidad de Lima, Perú
Carlos-Augusto Lizárraga-Portugal, Research Professor, Facultad de Ingeniería, Universidad de Lima, Perú

ID 116 Integer Goal Programming Approach to Optimized Office Assignment in Research and Academic Facilities

Anjiya Sharif and Eveline Thevasagayam, Department of Chemical Engineering, University of Waterloo, Waterloo, ON, Canada
Hedia Fgaier, Full Sail University, 3300 University Blvd, Winter Park, FL 32792, United States, & Valencia College, 1800 S Kirkman Rd, Orlando, FL 32811, United States
Ali Elkamel, Department of Chemical Engineering, University of Waterloo, Waterloo, ON, Canada & Khalifa University, Abu Dhabi, UAE

ID 3 Wind Load Calculation of The Active Antenna Unit 5G

Bui Minh Dinh, Vu Tuan Duc, Khong Van Manh, Nguyen Duc Thinh, Nguyen Quoc Hung and Dinh Van Hai, Dept of IDME-VTBR Center Viettel High Technology Industries Corporation, Hoa Lac Hi-tech Park Hanoi, Viet Nam

ID 21 Application of MBSE in Supply Chain Network Design: A Systemic Literature Review

Cole Fehring, Eli Cowan, Christian Bennett and Patrick Wiseman, Department of Industrial Engineering, California Polytechnic State University, San Luis Obispo, San Luis Obispo, California, USA

ID 118 Optimization of Electric Vehicle Charging Schedules Based on Individual Driving Habits and Real-World Scenarios

Aleksi Luoma and Loria Ou, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada
Ali Elkamel, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada
& Khalifa University, Abu Dhabi, UAE

ID 1 Electromagnetic Performance Evaluation of a 150kW IPM Motor for Commercial EV Traction

Bui Minh Dinh, School of Electrical and Electronic and Engineering, Hanoi University of Science and Technology, No1. Dai Co Viet, Hai Ba Trung, Ha Noi, Vietnam

2:00 pm – 3:45 pm, TUESDAY

Virtual Room 4

Session Chair: Dr. Hayder Zghair, Southern Arkansas University

Smart Mobility and EV Competition

ID 120 A Multi-Objective Green Electric Vehicle Charging Stations Location Problem Considering Central Business District Zone

Sepide Abbasiparizia, Department of Industrial Engineering, Shahid Bahonar University of Kerman, Kerman, Iran
Elham Haji-Sami, Department of Mathematics and Industrial Engineering, École Polytechnique de Montréal, Québec, Canada
Saeid Abbasiparizi, Department of Operations and Decision Systems, Université Laval, Québec, Canada

ID 141 Toward Sustainable Business Models for Shared Reverse Logistics of Electric Vehicle Battery

Aysan Mahboubi, Mina Kazemi Miyangaskary and Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Montreal, QC, Canada
Amina Lamghari, Department of Management, University of Quebec, Trois-Rivières, QC, Canada

ID 104 Achieving Smart Mobility: A Review

Alexander Veach and Munther Abualkibash, School of Information Systems and Applied Computing, Eastern Michigan University, Ypsilanti, Michigan, United States

ID 145 Learning-Based Matching Algorithm for Smart Freight Platform and Sustainability Assessment in Montreal

Ali Shiri and Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Montreal, QC, Canada
Asad Yarahmadi, Department of Civil, Geological and Mining Engineering, Polytechnique Montréal, Montréal, Canada
Amina Lamghari, Department of Management, University of Quebec, Trois-Rivières, QC, Canada

ID 76 Dynamic performance analysis of electric drives circuits for electric vehicle

Mandla M. Gumede and Dr. M Kabeya, Department of Electrical Engineering, Durban University of Technology, PO BOX1334 Durban, South Africa

ID 184 Fuzzy ANP Model for Evaluating the Potential of Industry 4.0 Technologies in End-of-Life Aircraft Recycling

Ghita El Anbri and Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Montréal, Canada
Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, 2500 Chem. de Polytechnique, Montréal, Canada

ID 202 Vehicle-to-Everything Communication Using a Roadside Unit for Over-the-Horizon Object Awareness

Michael Khalfin, Department of Computational Applied Mathematics and Operations Research, Rice University, Houston, TX 77005, USA
Jack Volgren, Department of Engineering, Pennsylvania State University, State College, PA 16801, USA
Luke LeGoullon, Department of Engineering, Louisiana State University, Baton Rouge, LA 70803, USA
Brendan Franz, Department of Computer Science, Harvard University, Cambridge, MA 02138, USA
Shilpi Shah, Department of Computer Science, Rutgers University, New Brunswick, NJ 08901, USA
Travis Forgach, Department of Computer Science and Engineering, University of Michigan, Ann Arbor, MI 48109, USA
Matthew Jones, Department of Mathematics, Willamette University, Salem, OR 97301, USA
Milan Jostes, Ryan Kaddis, and Chan-Jin Chung, Department of Math and Computer Science, Lawrence Technological University, Southfield, MI 48075, USA
Joshua Siegel, Department of Computer Science and Engineering, Michigan State University, East Lansing, MI 48824, USA

Senior Design Project Competition sponsored by Tooling Tech Group

ID 117 Municipal Water Pipeline Leak Detection System

Hao Wang, Shiani Raj, Troy Lewis and Zhen Ye, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada
Haitian Zhang, PhD Candidate in the Department of Chemical Engineering, University of Waterloo, Waterloo, Canada
Hamid-Reza Kariminia, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada
Ali Elkamel, Department of Chemical Engineering, Khalifa University, Abu Dhabi, UAE & University of Waterloo, Waterloo, Canada

Graduate Student Paper Competition sponsored by Eaton

ID 2 Investigating the relationship between marketing capabilities and export investment performance: The mediating role of marketing communication and competitive strategy, and the moderating role of technological turbulence

Mohsen Mohammadi Mahvelati and Mohammad Akbari, Faculty of Management and Economics, Payam-e-Noor University, Tehran, Iran

4:00 pm – 5:45 pm, TUESDAY

Virtual Room 4

Industry 4.0 and Industry Solutions

Session Chair: Kazi Farzana Firoz, North Carolina Agricultural and Technical State University, Greensboro, NC 27411, USA

ID 75 Bridges to The Industry 5.0/4.0 and Society Based on Agenda 2030: A Literature Review

Luis A. Maia Braggio, Giovanni Pessin Moschetto and Vagner Batista Ribeiro, Student, PhD program in Production Engineering, São Paulo State University (UNESP), Guaratingueta Campus, São Paulo, Brazil
Jorge Muniz Jr., Professor, Department of Production Engineering, São Paulo State University (UNESP), Brazil

ID 100 Digital Technology Use Among Small and Medium Sized Enterprises

Christoph Szedlak and Holger Reinemann, University of Applied Sciences Koblenz, Kompetenzzentrum Digitale Technologien im Mittelstand
Konrad-Zuse-Str. 1, 56075 Koblenz, Germany

ID 33 Design of an automated Lime Dosing System for Bulawayo Mining Company Zimbabwe

Zibusiso Jila Dube, Department of Industrial and Mechatronics Engineering, University of Zimbabwe, Harare, Zimbabwe
Loice K Gudukeya, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa
Abid Yahya, Department of Electrical Computer and Telecommunication, Botswana University of Science and Technology, Gaborone, Botswana

ID 34 Development of a Framework for A Locally Designed Computerized Maintenance Management System for General and Military Aviation in Zimbabwe

Liberty Chinyerere and Artwell Musarurwa, Faculty of Engineering and Built Environment, University of Zimbabwe, Mount Pleasant, Harare, Zimbabwe
Loice Gudukeya, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

ID 35 Design of Medical Waste to Energy Incinerator for Zimbabwe: Case for Warren Park Polyclinic

Kelly Mashaka, Faculty of Engineering and Built Environment, University of Zimbabwe, Mount Pleasant, Harare, Zimbabwe
Loice K Gudukeya, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa
Tawanda Mushiri, Senior Research Associate, Biomedical Engineering and Healthcare Technology (BEAHT) Research Centre, Faculty of Health Sciences, University of Johannesburg, Johannesburg, South Africa

ID 146 Using Machine Learning to Optimize Resource Use in Batteries and Engines: A Review

Alexander Veach and Munther Abualkibash, School of Information Systems and Applied Computing, Eastern Michigan University, Ypsilanti, Michigan, USA

ID 119 Safety of Level 4 Autonomous Vehicle: Still Human in the Loop

Kazi Farzana Firoz and Younho Seong, Department of Industrial & Systems Engineering, North Carolina Agricultural and Technical State University Greensboro, NC 27411, USA

ID 31 Gap analysis of Diversity, Inclusion, and Equity in Organization Workforce: Bridging the gap between diverse and non-diverse work environments

Abedeh Gholidoust, Assistant Professor in the Department of Marketing, Strategies, and Entrepreneurship, University Canada West, Vancouver, Canada

ID 99 Data Science and Analytics: A Data Driven Decision Making Approach for Business and Engineering

Amar Sahay, SLCC, United States

8:00 am – 9:45 am, WEDNESDAY**Virtual Room 4****Session Chair:** Dr. Mizanur Rahman

Human Factors and Ergonomics Competition sponsored by CINTAS

ID 61 A Preliminary Study on Human Trust in Pseudo-Real-Time Scenario through Electroencephalography and Machine Learning based Data Classification

Kazi Farzana Firoz, Younho Seong and Yoo-Sang Chang, Department of Industrial & Systems Engineering, North Carolina Agricultural and Technical State University, Greensboro, NC 27411, USA

ID 69 A Pilot Study on the Impact of Colors on Human Performance Within a Multitasking Simulation Environment

Esther Omotola Adeyemi, Department of Engineering Management, Systems and Technology, University of Dayton, 300 College Park, OH, USA
Sharon Claxton Bommer, Associate Professor, Department of Engineering Management, Systems and Technology, University of Dayton, 300 College Park, OH, USA

ID 71 DriveSAM: Cognitive Perspective on Driving Maneuvers Based on Drivers' Attention Using Eye Gaze Data

Kelvin Kwakye and Younho Seong, Department of Industrial & Systems Engineering, North Carolina A&T State University, Greensboro, North Carolina, USA

Sun Yi, Department of Mechanical Engineering, North Carolina A&T State University, Greensboro, North Carolina, USA

Armstrong Aboah, Department of Civil and Architectural Engineering and Mechanics, University of Arizona-Tucson, United States

ID 112 An Analysis of Ergonomic Risks of Undergraduate Students During Virtual Education in the wake of the COVID-19 Pandemic: A Prospective Review

Ricardo Daniel Celis-Gurmendi and Fiorella Morelia Figueroa-Nole, Bachelor of Science in Industrial Engineering, Faculty of Engineering, Industrial Engineering Career, Universidad de Lima, Perú

Juan Carlos Quiroz-Flores, Professor Researcher, Faculty of Engineering, Industrial Engineering Career, Universidad de Lima, Perú

ID 197 Machine Learning model for Healing analysis of Human Injury

Shubhangi D C, Professor, Department of Computer Science, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India

BaswarajGadgay, Department of Electronics and Communication, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India

Bhagyashree, Department of Computer Science, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India

High School STEM Competition

ID 123 Word Cloud Techniques for Data Analysis

Se In Jung and Shin Dong Ho, Graduate and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun Chungcheongbuk-do, Republic of Korea

Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

ID 124 Research on Various Digital Contents According to Marketing Strategy

Kim See You and Shin Dong Ho, Student and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun Chungcheongbuk-do, Republic of Korea

Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

ID 125 EMG signal classification research to improve electric prosthetic hand control method

Yeonju Lee and Shin Dong Ho, Student and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun Chungcheongbuk-do, Republic of Korea

Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

2:00 pm – 3:45 pm, WEDNESDAY**Virtual Room 4**

Technical Presentations

Session Chair: Ralph Ocon, Construction Science and Organizational Leadership, Purdue University Northwest, Hammond, IN 46323, USA

ID 37 Financial Market Forecasting by Applying Deep Learning Techniques

T.O. Kehinde and S.H. Chung, Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong
Waqar Ahmed Khan, Department of Industrial and Systems Engineering, Interdisciplinary Research Center for Smart Mobility and Logistics, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

ID 36 Design of a Solar Automated Scarecrow

Morgan M Mhandu and Artwell Musarurwa, Faculty of Engineering and Built Environment, University of Zimbabwe, Mount Pleasant, Harare, Zimbabwe
Loice K Gudukeya, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

ID 95 Policy for Development of Sharia Banking Operating System

Mustafa, Pamulang University, Faculty of Economics Accounting, Indonesia

ID 60 Applying Six Sigma to Reduce Electricity Bill in Single Family Residential Home

Vidita Shukla, A. Leon Linton Department of Mechanical Engineering, Lawrence Technological University, Southfield, MI 48075, USA

ID 65 Evaluation of Serious Game Usage in Industrial Training: A Case Study of an Automotive Manufacturer

Marcos Fonseca Oliveira, Master Student, Executive Graduate Program in Production Engineering, São Paulo State University (UNESP) Engineering School, São Paulo, Brazil
Jorge Muniz Jr., Professor, Department of Production Engineering, São Paulo State University (UNESP), Engineering School, São Paulo, Brazil
José de Souza Rodrigues, Professor, Department of Production Engineering, São Paulo State University (UNESP), Engineering School, São Paulo, Brazil

ID 121 Creating a Serious Game for Uncovering Lean Management Strategies to Enhance Office Efficiency

Alina Marquet, Research associate, Faculty of Operations Management, Koblenz University of Applied Sciences, Konrad-Zuse-Strasse 1, 56075 Koblenz, Germany
Christoph Szedlak, Project coordination digitalization, Faculty of Operations Management, Koblenz University of Applied Sciences, Konrad-Zuse-Strasse 1, 56075 Koblenz, Germany
Bert Leyendecker, Professor, Faculty of Operations Management, Koblenz University of Applied Sciences, Konrad-Zuse-Strasse 1, 56075 Koblenz, Germany

ID 26 Helping Students Solve Multidisciplinary Problems: A Project Technique Using Creative Problem Solving

Ralph Ocon, Construction Science and Organizational Leadership, Purdue University Northwest, Hammond, IN 46323, USA

ID 98 Quality Function Deployment (QFD) and House of Quality (HOQ) Application: Incorporating the Voice of the Customer in Product and Service Design to meet and exceed Customer Expectation

Amar Sahay, Ph. D, Professor of Decision Sciences, BB302 G, 4600 So. Redwood Road, Salt Lake City, UT 84123 USA
School of Business, SLCC and other institutions in USHE

4:00 pm – 5:45 am, WEDNESDAY**Virtual Room 4**

42nd IEOM Industry Solutions and Automation

Foad H Khanli
Director of Quality Assurance, Performance and Business Improvement
Amor Health Services, Inc.
Brownsville, Texas, USA

ID 199 Fuzzy Logic Application in a Lead-Acid Battery Charger for an Electric Wheelchair

Santillan A. Bryan and Rodriguez V. Katherine, Industrial Engineering Students, University of Lima, Lima, Av. Javier Prado Este 4600, Peru
Paredes L. Fabricio, Cieza D. L. Eduardo, Pratolongo S. Italo, Professors, Av. Javier Prado Este 4600, Faculty of Industrial Engineering, University of Lima, Lima, Av. Javier Prado Este 4600, Peru

ID 200 Disruptive Technologies and Implications for Business Sustainability

Luis Rocha-Lona, Instituto Politecnico Nacional, Mexico

8:00 am – 9:45 am, THURSDAY**Virtual Room 4**

SCM

Session Chair: Amina Lamghari, Department of Management, University of Quebec, Trois-Rivières, QC, Canada

ID 25 Supply Chain Environmental Sustainability and Corporate Financial Performance: The Mediating Role of Supplier Involvement
Hong Long Chen, Department of Business and Management, National University of Tainan, Tainan, 70005, Taiwan

ID 142 Advanced Optimization Model Under Uncertainty for Sustainable Closed-Loop Supply Chain of Electric Vehicle Battery

Mina Kazemi Miyangaskary and Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Canada
Amina Lamghari, Department of Management, University of Quebec, Trois-Rivières, QC, Canada
Asad Yarahmadi, Department of Civil, Geological and Mining Engineering, Polytechnique Montréal, Montréal, Canada

ID 38 An Exploratory Research on Electric Vehicle Sustainability: An Approach of ADAS

Mehrab Masayeed Habib and Asif Mohammad Mithu, Philip M. Drayer Department of Electrical Engineering, Lamar University, Texas, USA
Fakir Sheik Zihad, Department of Industrial Engineering, Lamar University, Beaumont, TX 77710, USA

ID 68 Capacitated Multi-Trip Vehicle Routing Problem with Time Windows and Occasional Drivers

Pham Ngoc Xuan Mai, Department of Logistics and Supply Chain Management, International University – Vietnam National University - HCMC Ho Chi Minh, Vietnam
 Vincent F. Yu, Department of Industrial Management, National Taiwan University of Science and Technology, Taiwan, Taipei 106, Taiwan
 Pham Ngoc Quang, Department of Industrial Management, National Taiwan University of Science and Technology, Taiwan, Taipei 106, Taiwan
 Pham Tuan Anh, Department of Industrial Management, National Taiwan University of Science and Technology, Taiwan, Taipei 106, Taiwan

ID 115 Application of genetic algorithms to optimize distribution in food transport companies: A systematic literature review

Ayre Rosales Dylan Anndrei and Garcia-Lopez Yvan Jesus, Facultad de Ingeniería- Carrera de Ingeniería Industrial, Universidad de Lima, Perú

ID 143 Stochastic Optimization Model for Smart Freight Matching and perspective of the application in Montreal

Ali Yahyatabara, Department of Industrial Engineering, K.N. Toosi University of Technology, Tehran, Iran
 Elham Haji Samib, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Montreal, QC, Canada
 Amina Lamghari, Department of Management, University of Quebec, Trois-Rivières, QC, Canada
 Samira Keivanpourob, Asad Yarahmadic, Department of Civil, Geological and Mining Engineering, Polytechnique Montréal, Montréal, Canada

ID 144 Comparative Analysis of Smart Freight Matching Business Models and Sustainability KPIs

Tomas Agustin Bas and Samira Keivanpour, Department of Mathematical and Industrial Engineering, Polytechnique Montreal, Montreal, Canada
 Asad Yarahmadi, Department of Civil, Geological and Mining Engineering, Polytechnique Montréal, Montréal, Canada

ID 6 Goal Programming Approach for Waterway Transportation System

Akinlo Olorunju Mogbojuri and Oludolapo Akanni Olanrewaju, Department of Industrial Engineering, Durban University of Technology, South Africa
 Olatunde Joseph Oloyede, Department of Mechanical Engineering, University of Lagos, Nigeria

2:00 pm – 3:45 pm, THURSDAY

Virtual Room 4

Lean, Quality and Six Sigma

Session Chair: Shibbir Ahmad, Mechanical Engineering Department, Dhaka University of Engineering & Technology, Gazipur, Bangladesh

ID 103 Enhancing Organizational Efficiency through Simulation-Based Learning and Lean Administration: A Serious Game Approach to Process Optimization

Alina Marquet, Research associate, Faculty of Operations Management, Koblenz University of Applied Sciences, Koblenz, Germany
 Christoph Szedlak, Project coordination digitalization, Faculty of Operations Management, Koblenz University of Applied Sciences, Koblenz, Germany
 Bert Leyendecker, Professor, Faculty of Operations Management, Koblenz University of Applied Sciences, Koblenz, Germany

ID 23 Factors Impacting Dimensional Deviations with Computerized Numerical Control Machining Processes: Solutions to Reduce Product Nonconformities

Ali Ghazi, Prof. Milton Krivokuca and Robert Spencer, Department of Quality Assurance, California State University, Dominguez Hills, 1000 E Victoria St, Carson, CA 90747, USA

ID 74 Assessment of Quality Management Practices in Industry 4.0 within the Automotive Components Sector A Case Study of an Auto parts Industry

Felipe Henrique da Silva Gomes, Student, Executive master's program in Production Engineering, São Paulo State University (UNESP), Guaratingueta Campus, São Paulo, Brazil
 João Batista Turrioni, Professor, Department of Production Engineering, São Paulo State University (UNESP), Brazil
 Jorge Muniz Jr., Professor, Department of Production Engineering, São Paulo State University (UNESP), Brazil

ID 111 Inspection Cost Minimization by Optimizing Number of Inspectors in Apparel Manufacturing

Shibbir Ahmad, Mechanical Engineering Department, Dhaka University of Engineering & Technology, Gazipur, Bangladesh
 Asif Mohammad Mithu, Electrical Engineering Department, Villanova University, PA, USA

ID 42 Exploring the Manufacturability and Quality of Small-Scale hole via Fused Deposition Modeling Technology

Wadea Ameen, Industrial Engineering Department, College of Engineering and Architecture, Alyamamah University, Riyadh-11512, Saudi Arabia

4:00 pm – 5:45 pm, THURSDAY

Virtual Room 4

Technical Presentations

Session Chair: Farnaz Ghazi Nezami, Industrial and Manufacturing Engineering Department, Kettering University, Flint, MI 48504, USA

ID 204 CRM Implementation in SMEs Management Processes: The Role of e-CRM and s-CRM

Daniel Cárdenas Yactayo, Jean Piert Espinoza Castro and Rafael Chavez-Ugaz, Facultad de Ingeniería, Universidad de Lima, Lima, Perú

ID 205 The Role of Artificial Intelligence in the Cultivation of Green Transportation Systems

Farnaz Ghazi Nezami, Catharine Carlson and Skyler Chinn, Industrial and Manufacturing Engineering Dept., Kettering University, Flint, MI, USA

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Founder and Director: CJ Chung

The CAR Lab at LTU was founded in 1998 by Professor CJ Chung to promote Intelligent robotics and STEM + Computer Science Education through autonomous Robotics. Currently the lab focuses on robotics and intelligent vehicle research projects using Artificial Intelligence (AI) technologies such as Deep Learning, Deep Reinforcement Learning, Evolutionary-Neuro-Fuzzy.



Siemens Elector-Matic Industrial Engineering Lab

Founder and Director: Dr. Ahad Ali



Rockwell Automation/McNaughton-McKay Electric Co. I4.0 Robotics and Industrial Automation Laboratory



Mobile Detroit 2050

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Curators: Sara Codarin and Karl Daubmann
Jury: Julian Bleecker, Michael Canty, Elisa Ngan, Gretchen Wilkins
Sponsored by: LTU College of Architecture and Design

The widespread deployment of the car originated in Detroit and there is no better place to imagine futures for transportation, access, and mobility.

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IEOM Student Chapter at Minnesota State University, Mankato, USA

Faculty Advisors

Dr. Kuldeep Agarwal
Professor
Department of Automotive and Manufacturing
Engineering Technology
College of Science, Engineering, and Technology
Minnesota State University, Mankato, MN 56001

Dr. Pawan Bhandari
Assistant Professor
Department of Automotive and Manufacturing
Engineering Technology
College of Science, Engineering, and Technology
Minnesota State University, Mankato, MN 56001

University and Department Website:
<https://www.mnsu.edu/academics/academic-catalog/graduate/manufacturing-engineering-technology/engineering-management-psm/>

Department Chair/Head: Gary Mead, Ph.D.

Chapter Officers

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Poorna Pragna Mysore
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Niloufer Sarah
Gaurav Ghosh
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Sai Sasank Pothamsetti



IEOM Student Chapter at Western Michigan University, Kalamazoo, MI, USA**Faculty Advisors****Dr. Lee Wells**

Associate Professor
Industrial and Entrepreneurial Engineering &
Engineering Management
Western Michigan University
Kalamazoo MI, USA

Dr. Jim Burns

Assistant Professor
Industrial and Entrepreneurial Engineering &
Engineering Management
Western Michigan University
Kalamazoo MI, USA

University and Department Website:

<https://wmich.edu/>

<https://wmich.edu/ieeem/>

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Director of Social Media: Nikhil Bankar
Director of Program/Activities: Vaibhav Vispute
Director of Membership: Abhishek Sonone
Director of Operations: Hrishikesh Lathi

Planned Activities:

Bell's Brewery Tour
Pfizer Tour
Lean Six Sigma Certification
Lawrence Tech Chapter Visit

**IEOM Student Chapter at Loyola University of Chicago, IL, USA****Faculty Advisor**

Dr. Sarah Ali
Clinical assistant Professor
Engineering, Math and Honors Departments
Chicago, Illinois, USA

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- Ben Dobbins
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- Simon, Sornat
- Nicholas Yakonski



IEOM Student Chapter at Buffalo State College, Buffalo, New York, USA

Faculty Advisor

Dr. Elizabeth O'Neill
Assistant Professor
Engineering Technology
SUNY Buffalo State College
Buffalo, NY, USA

Chapter Officers

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- Vice President – Sterling Jones
- Secretary – Steven Phengsamplane
- Treasurer – David Pignone

Members

- Daschal Abbasso
- Siam Hassain

Activities

- Plant visits
- Research project with additive manufacturing in the works
- Speakers from industry



IEOM Student Chapter at Department of Data Science and Business Analytics, Florida Polytechnic University, USA

Faculty Advisors

Dr. Jing Hou
Assistant Professor
Department of Data Science and Business Analytics

Dr. James Mennie
Business Director – FIPRI
Department of Data Science and Business Analytics

Florida Polytechnic University: <https://floridapoly.edu/>

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Susmitha Chereddy
Susmitha Reddy Gopavaram

IEOM Student Chapter at Indiana State University, Terre Haute, Indiana, USA

Faculty Advisor

M. Affan Badar, PhD
Professor and Interim PhD Technology Management Director
Bailey College of Engineering and Technology
Indiana State University
Terre Haute, Indiana, USA

University or Department Website: www.indstate.edu

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Director of Membership: Todd Lemon

IEOM Student Chapter at Southern Arkansas University, Magnolia, Arkansas

Faculty Advisor

Dr. Hayder Zghair
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Southern Arkansas University
Magnolia, Arkansas, USA

Technical Advisor

Mr. Jeffrey Sumner
Department of Engineering & Physics
Southern Arkansas University
Magnolia, Arkansas, USA

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Dr. Ahad Ali
Professor Don Reimer

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Gouri Reddy
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Arjun Nallachery
Feroz Mohamed
Vyoma Teja Sajja
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Sibin Mathew
Rohith Rapol
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IEOM Student Chapters around World

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1. Adrar University	76. VNR Vignana Jyothi Institute of Eng and Technology	150. Universidad de Lima (ULima)
Australia	77. Siddhartha Institute of Engineering & Technology	151. Universidad Peruana de Ciencias Aplicadas (UPC)
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Bahrain	80. BML Munjal University, Gurugram, India	154. Universidad Privada del Norte (UPN)
4. University of Bahrain	81. AKTU University, Kanpur, India	155. Universidad Continental (UContinental)
Bangladesh	82. Mufakkhamjah College of Eng. and Tech, Hyderabad	156. Universidad de Ingeniería y Tecnología (UTEC)
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11. DUET, Gazipur	88. Institut Teknologi Sepuluh Nopember (ITS)	162. De La Salle University (DLSU) Manila
12. European University of Bangladesh	89. Sampoerna University, Jakarta	163. Adamson University
13. International Islamic University of Chittagong	90. Shipbuilding Institute of Polytechnic Surabaya	164. CEBU Technological University
14. Islamic University of Technology (IUT)	91. Tarumanagara University	165. University of San Jose-Recoletos
15. IUBAT	92. UIN Sultan Syarif Kasim, Riau	Portugal
16. Jessore University of Science and Technology	93. Universitas Diponegoro (Undip)	166. ISEL – Instituto Superior De Engenharia de Lisboa
17. Khulna University (KU)	94. Universitas Gadjah Mada (UGM)	Qatar
18. Khulna University of Eng and Tech (KUET)	95. Universitas Iqra Buru	167. Qatar University
19. Military Institute of Science and Technology	96. UIN Sunan Kalijaga, Yogyakarta	Saudi Arabia
20. National Institute of Textile Eng & Res (NITER)	97. Universitas Islam Negeri Alauddin Makassar	168. Alfaisal University
21. Rajshahi University (RU)	98. Universitas Sebelas Maret (UNS), Surakarta	169. Effat University
22. SUST	99. University of Indonesia	170. King Abdulaziz University (KAU)
23. University of Chittagong	100. Universitas Sumatera, Utara Medan	171. King Abdulaziz University, Rabigh
24. World University Bangladesh (WUB)	101. Narotama University, Surabaya	172. King Fahd Univ of Petroleum and Minerals (KFUPM)
25. BAUST	102. Universitas Pakuan, Bogor	173. King Khalid University, Abha
26. AIUB	103. Trilogi University	174. King Saud University (KSU)
Botswana	Iran	175. Umm Al-Qura University (UQU)
27. University of Botswana	104. MehrAstAn University, Guilan	176. Princes Nourah University (PNU)
Brazil	105. University of Eyvanekey	177. Prince Sattam Bin Abdulaziz University
28. Federal University of Sao Carlos (UFSCar)	106. Technical and Vocational University (TVU)	178. Prince Sultan University (PSU)
29. Federal University of Santa Catarina (UFSC)	Iraq	179. Taibah University
30. University of Sao Paulo (USP) – Sao Carlos	107. Babylon University	180. University of Tabuk
31. Federal Institute of Sao Paulo, Sorocaba	Israel	181. Taibah University
32. FACENS University, Sorocaba	108. Sapir Academic College	182. University of Business and Technology
Canada	109. Shamoan College of Engineering (SCE), Ashdod	183. King Khalid University, Abha
33. Concordia University	Italy	184. University of Bisha
34. Humber Institute of Tech and Adv Learning	110. University of Bologna	185. Taif University
35. Polytechnic Montreal	111. University of Salento	South Africa
36. University of New Brunswick at Fredericton	Japan	186. Durban University of Technology (DUT)
37. University of Waterloo	112. Ashikaga University	187. Tshwane University of Technology (TUT)
38. University of Windsor	Jordan	188. University of Johannesburg (UJ)
Colombia	113. Hashemite University	189. University of South Africa (UNISA)
39. Fundación Univ. Tecn. Comfenalco, Cartagena, Bolivar	Kenya	190. Vaal University of Technology (VUT)
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42. Universidad de San Buenaventura, Cali, Valle	115. Libyan Academy	192. University of Peradeniya
Costa Rica	Malaysia	Sudan
43. University of Costa Rica	116. Universiti Malaysia Sabah (UMS)	193. Sudan University of Science and Tech Khartoum
Czech Republic	117. Universiti Putra Malaysia (UPM)	Thailand
44. University of West Bohemia, Pilsen	118. Universiti Teknologi Malaysia (UTM)	194. Chulalongkorn University, Bangkok
Ecuador	119. Universiti Tun Hussein Onn Malaysia (UTHM)	195. Chiang Mai University
45. Technical University of Ambato	120. Universiti Utara Malaysia (UUM)	Turkey
Egypt	Mexico	196. Turkish-German University
46. Zagazig University	121. Instituto Politécnico Nacional (IPN), Mexico	UAE
47. Fayoum University	122. Universidad del Caribe, Cancun	197. University of Science & Technology of Fujairah
Ethiopia	Morocco	UK
48. Bahir Dar Institute of Technology	123. Akhawayn University	198. University of Derby
Finland	124. Ecole Mohammadia d'Ingénieurs (EMI)	199. University of the West of England, Bristol
49. University of Vaasa	125. Sidi Mohamed Ben Abdellah University of Fez	USA
France	126. N. School of Appl Sci. Kenitra, Ibn Tofail Univ	200. Central Connecticut State University
50. IESEG School of Management	127. Ecole Supérieure De Technologie, Fez	201. Eastern Michigan University
51. Lorraine University, Metz	Mozambique	202. Lawrence Technological University, Michigan
Ghana	128. Eduardo Mondlane University	203. University of the District of Columbia
52. Technological Education Institute (TEI), Thessaly, Larissa	Namibia	204. Indiana State University
Greece	129. National Univ. of Sci. and Tech. in Windhoek	205. Florida Polytechnic University
53. Accra Technical University	Nepal	206. Buffalo State College
Haiti	130. Kathmandu University	207. Southern Arkansas University
54. Université Quisqueya	131. Tribhuvan University	208. Western Michigan University
India	Nigeria	209. Loyola University Chicago
55. College of Eng and Tech, Bhubaneswar, Odisha, India	132. Covenant University	210. Minnesota State University, Mankato
56. College of Engineering Guindy, Chennai	133. University of Ibadan	Venezuela
57. Guru Nanak Dev Engineering College	134. University of Nigeria, Nsukka	211. Catholic University Andrés Bello, Caracas
58. Pandit Dendayal Petroleum Univ., Gujrat	135. University of Benin	Vietnam
59. P.D.A. College of Engineering, Gulbarga	136. Olabisi Onabanjo University	212. CFVG, Ho Chi Minh City, Vietnam
60. Vellore Institute of Technology	Oman	Zambia
61. Vidya Jyothi Institute of Technology, Hyderabad	137. Sultan Qaboos University	213. University of Zambia
62. Universal College of Eng & Tech (UCET), Guntur	138. Middle East College	214. Copperbelt University
63. National Institute of Technology (NIT), Warangal	Pakistan	215. Evelyn Hone College
64. Jawaharlal Nehru Technological University Hyderabad	139. Dawood University of Eng and Technology, Karachi	Zimbabwe
65. IITS, India	140. Government College University Faisalabad	216. University of Zimbabwe, Harare
66. Birla Institute of Tech & Sciences (BITS Pilani)	141. Mehran University of Eng and Tech, Jamshoro, Sindh	217. National University of Science and Technology
67. Amrita School of Business – Bangalore	142. Riphah International University, Lahore Campus	218. Harare Institute of Technology (HIT)
68. Amrita school of Arts and Sciences, Mysuru	143. University of Engineering and Technology, Lahore	219. Women's University in Africa (WUA)
69. Amrita School of Business, Coimbatore	144. UOT – Nowshera	220. Chinhoyi University of Technology (CUT)
70. Aligarh Muslim University, Aligarh	145. Information Technology Univ. of the Punjab, Lahore	High School Chapters
71. Mahant Bachittar Singh College Eng & Tech, Jammu	Papua New Guinea	221. Bay Area of San Francisco & San Jose, CA
72. Baba Banda Singh Bahadur Eng College	146. Papua New Guinea University of Technology	222. Arongghata, Khulna, Bangladesh
73. Ramaiah University of Applied Sciences	Paraguay	
74. Nawab Shah Alam Khan College Eng & Tech (NSAKCET)	147. National University of Asuncion	
	148. Universidad del Cono Sur de las Américas	
	Peru	

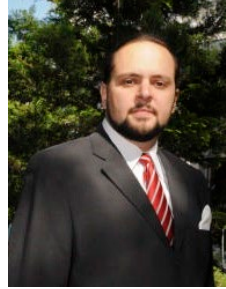
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6th Industrial Engineering and Operations Management Bangladesh Conference
Dhaka, Bangladesh, Dec. 26-28, 2023
 Venue: Krishibid Institution, KIB, Farmgate + Virtual



Chittagong University of Engineering & Technology (CUET)



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Nov. 14-16, 2023, Melbourne
 Venue: Batman's Hill Hotel on Collins



14th International Conference on Industrial Engineering and Operations Management
February 12-14, 2024, Dubai, UAE
 Venue: Hyatt Regency Dubai, Host: Khalifa University



5th African International Conference on Industrial Engineering & Operations Management
Johannesburg/Pretoria, South Africa
 April 23-25, 2024, Venue: CSIR ICC



5th South American Conference on Industrial Engineering & Operations Management
Bogota, Colombia, May 7-9 2024
 Host: Fundación Universitaria UNIR Colombia



9th North American Conference on Industrial Engineering and Operations Management
Washington, DC, USA, June 4-6, 2024
 Host: University of the District of Columbia (UDC)
 Venue: UDC Campus, 4200 Connecticut Ave NW



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 July 16-18, 2024
 Host: Augsburg Technical University



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