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2023 IEOM Detroit Awards

International Conference on Smart Mobility and Vehicle Electrificaiton
Detroit, Michigan, USA, October 10-12, 2023

Venue: Lawrence Technological University

http://ieomsociety.org/ieom/awards/

Distinguished Academic Leadership Award

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

Distinguished Industry Leadership Award

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

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

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

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

Distinguished Industry Achievement Award

Dr. Jorge Arinez
Group Manager
Manufacturing Systems Research Lab
GM Global Research and Development
Warren, Michigan

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

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

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

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

Distinguished Educator Award

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

Woman in Industry and Academia Award

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

Smart Mobility Award

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

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

Outstanding Industry Solutions Award

Nick Skope
Director - Strategic Alliances and Business Development
Electro-Matic Products
Farmington Hills, MI 48335

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

Kayla Buczkowski
Leading Test & Validation
EAVX
Milan, Michigan, United States

IEOM Vehicle Electrification Award

Mary Beth MacDonald
Retired Program Manager – Electrification at General Motors

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

IEOM Global Sustainability Award

Akim Khalef
Sustainable Feedstock & Recycling Manager
FORVIA Faurecia
Auburn Hills, Michigan, United States

Lean Six Sigma Award

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

Diversity and Inclusion Award

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

Distinguished Leadership Award

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

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

Outstanding Professor Award

Dr. Leslie Monplaisir, Associate Dean for Academic and Student Affairs and Professor, Department of Industrial and Manufacturing Engineering, Wayne State University, Detroit, Michigan, USA

Outstanding Teaching Award in Engineering Management

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

STEM Leadership Award

Dr. Chan-Jin (CJ) Chung, Professor of Computer Science and Founder of Robofest & Director of CAR (CS and AI Robotics) Lab, Math + Computer Science Department, Lawrence Technological University, Southfield, Michigan, USA

Competition Winners

Undergraduate Student Paper Competition Sponsored by Siemens

First Place

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

Second Place

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

Third Place

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

Undergraduate Research Competition sponsored by Daikin Applied

First Place

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

Second Place

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

Third Place

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

Human Factors and Ergonomics Competition sponsored by CINTAS

First Place

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

Second Place
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

Third Place

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 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

Simulation Competition

First Place

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

Second Place

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

Third Place

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

Vehicle Electriifcation Competition

First Place

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
George Pappas, Assistant Professor and Director of MSAI program, Department of Electrical and Computer Engineering, Lawrence Technological University, Southfield, MI 48075, USA

Second Place

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

Third Place

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

Masters Thesis Competition

First Place

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
George Pappas, Assistant Professor and Director of MSAI program, Department of Electrical and Computer Engineering, Lawrence Technological University, Southfield, MI 48075, USA

Second Place

ID 138 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, Beaumont, Tx 77710, USA
Fakir Sheik Zihad, Department of Industrial Engineering, Lamar University, Beaumont, Tx 77710, USA

Third Place

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

Graduate Student Paper Competition sponsored by Eaton

First Place

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

Second Place

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
George Pappas, Assistant Professor and Director of MSAI program, Department of Electrical and Computer Engineering
Lawrence Technological University, Southfield, MI 48075, USA

Third Place

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

Smart Mobility Competition

First Place

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

Second Place

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 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

Third Place

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

EV Competition

First Place

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

Second Place

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

Third Place

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 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

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

High School STEM Competition

First Place

ID 208 Self-standing Blind Cane: An Assistive Device for the Visually Challenged
Suhani Dalela, Senior, Saline High School
Muhammad Ahmed, Professor, Game Above College of Engineering, Eastern Michigan University

Second Place

ID 114 Probing a galaxy group with an FRB dispersion measure
Tejaswini Samanta, Army Public School Delhi Cantt, India

Third Place

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

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

Supply Chain and Logisitcs Competition

First Place

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

Second Place

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

Third Place

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

Lean

First Place

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

Second Place

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

Third Place

ID 59 Mitigating the Sustainability Challenge in Lean Healthcare
Eveth Nwobodo-Anyadiegwu, University of Johannesburg, South Africa
Charles Mbohwa, South Africa
Michael Mutingi, Namibia University of Scince and Technology, Namibia