



**IEOM Society**

*"Achieving and Sustaining Operational Excellence"*

[www.ieomsociety.org](http://www.ieomsociety.org)

---

## 2015 IEOM Awards

### 1. Distinguished Service Awards

- **Syed Mohammed Aumir**, Senior Executive Vice President, Siemens Middle
- **Dr. Chris Backhouse**, Professor of Product Innovation, School of Mechanical and Manufacturing Engineering, Loughborough University, Leicestershire, UK
- **Dr. Leland Blank**, Professor and Dean of Engineering, American University of Sharjah, UAE
- **Dr. Chris Smith**, Vice President & Managing Director of Boeing Saudi Arabia
- **Dr. Don Taylor**, Charles O. Gordon Professor and Department Head, Grado Department of Industrial and Systems Engineering, Virginia Tech, Blacksburg, VA, USA
- **Moraya S. AlGahtani**, Division Head, Operational Excellence Department, Saudi Aramco

### 2. Distinguished Educator Awards

- **Dr. Umar Al-Turki**, Dean, College of Computer Science and Engineering and Professor at Systems Engineering Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
- **Dr. Kudret Demirli**, Professor and Chair, Department of Industrial and Systems Engineering, Khalifa University, Abu Dhabi, UAE
- **Dr. Funso Falade**, Professor at University of Lagos, Nigeria and President, African Engineering Education Association
- **Dr. Hans-Juergen Hoyer**, Secretary General of the International Federation for Engineering Education Societies (IFEES), Executive Secretary of Global Engineering Dean Council (GEDC) and Resident Scholar in Global Engineering, Marquette University, Milwaukee, Wisconsin, USA
- **Dr. Abu Masud**, Interim Dean of Graduate School, Boeing Global Engineering Professor, Wichita State University, Wichita, Kansas, USA
- **Dr. Ho Thanh Phong**, Rector, International University – VNUHCM, Ho Chi Minh City, Vietnam
- **Dr. Rupy Sawhney**, Heath Fellow in Business and Engineering, and Professor, Industrial and Systems Engineering, University of Tennessee, Knoxville, USA
- **Dr. Venkata Seshachala Sarma Yadavalli**, University of Pretoria, South Africa

### 3. Outstanding Service Awards

- **Dr. Fouad Al-Sunni**, Chairman of Systems Engineering Department, King Fahd University of Petroleum & Minerals, Saudi Arabia

## 2015 IEOM Society Awards

---

- **Dr. Abdul Talib Bon**, Faculty of Technology Management, Business and Entrepreneurship, Universiti Tun Hussein Onn Malaysia (UTHM), Johor, Malaysia
- **Dr. Mir Mehdi Seyed Esfahani**, Head of Iran Institute of Industrial Engineering, Tehran, Iran
- **Dr. Ravi Gor**, Director, Dr. Babasaheb Ambedkar Open University, Ahmedabad, Gujarat, India
- **Dr. Moncer Abdelhamid Hariga**, Department Head, Department of Industrial Engineering, American University of Sharjah, UAE
- **Dr. Ali Mostafaeipour**, Yazd University, Iran
- **Kavitha Prabhu**, Director- ASQ MENA (Middle East and North Africa), World Trade Center, Dubai, United Arab Emirates
- **Dr. Ahm Shamsuzzoha**, Department of Mechanical and Industrial Engineering, Sultan Qaboos University, Muscat, Oman
- **Dr. Md. Shamsuzzaman**, Industrial Engineering and Engineering Management Department, University of Sharjah, UAE
- **Representative** of IEEE-UAE Section

### 4. Community Leadership Award

- **King Hulas**, Director GO PLM & Global Community Relations, SIEMENS Software

### 5. Outstanding Industry Awards

- **Resh Plaha**, Crystal Quality, United Kingdom
- **Majid Abab**, Industrial Engineering Manager, The Boeing Company, Seattle, Washington, USA
- **Dr. Zain Tahboub**, Dubai Aviation Engineering Projects (DAEP), UAE
- **Abdulrahman A. Al-Jabr**, Business Manager, Environmental Protection Development, Saudi Aramco, Dhahran, Saudi Arabia

### 6. Outstanding Student Awards

- **Ms. Abrar AlAmoudi**, department of Industrial Engineering, KING ABDULAZIZ UNIVERSITY, SAUDI ARABIA
- **Sharfuddin Ahmed Khan**, Department of Industrial Engineering & Engineering Management, UNIVERSITY OF SHARJAH, UNITED ARAB EMIRATES

### 7. Outstanding Dissertation Award

- **Abbas Mahmoudabadi**, Developing Sustainable Model of Hazardous Material Routing Problem under Emergency Environment, Payam-Noor University, Iran

### 8. Industry Best Practice Awards

- **Masaru Tezuka**, Manager of Research and Development, HITACHI SOLUTIONS EAST JAPAN, LTD., SENDAI, JAPAN

### 9. Outstanding Track Chair Awards

- **Dr. Shao Hung Goh**, Singapore Institute of Management (SIM) University, Singapore
- **Dr. Peter Toth**, Trefort Agoston Centre for Engineering Education. Obuda University, Hungary

### 10. Student Paper Competition Winner Awards

#### **1<sup>st</sup> Place**

#### **A Novel Application of System Survival Signature in Supply Chain Risk Management**

Abroon Qazi, John Quigley and Alex Dickson  
University of Strathclyde, Glasgow, Scotland, United Kingdom

## 2015 IEOM Society Awards

---

### **2<sup>nd</sup> Place**

#### **A Recommended Approach to Improve Utilization of Local Workforce in the Middle East Megaprojects**

Omar Galil and Troy Nguyen  
Florida Institute of Technology, Melbourne, Florida, USA

### **3<sup>rd</sup> Place**

#### **Cybersecurity Investment Optimization with Risk: Insights for Resource Allocation**

Yueran Zhuo and Senay Solak  
University of Massachusetts Amherst, Massachusetts, USA

### **Honorable Mention**

#### **Applying Variance Performance Measures for Variable Service-Rate Queueing Simulation Models**

Paul D. Babin, Department of Industrial and Systems Engineering, Mississippi State University, USA  
Allen G. Greenwood, Prince Sultan Univ., Riyadh, KSA and Miss. State Univ., USA

### **Honorable Mention**

#### **Design of X-bar&R Control Charts for Monitoring Quality of Care for Hypertension**

Tamador Abloushi, Aisha Suwaidi, Noura Zarouni, Asma Abdelrahman and Mohammad Shamsuzzaman  
University of Sharjah, United Arab Emirates

## 11. Senior Design Project Poster Competition Winner Awards

### **1<sup>st</sup> Place**

#### **Identify KPIs to Improve Dealership Sales and Profitability**

Xiang Li, Zhehui Wang, Han Lin Yeo, and Yunyan Zhang  
Industrial and Operations Engineering, University of Michigan, Ann Arbor, USA

### **2<sup>nd</sup> Place**

#### **Containership Routine Problem: Modeling and Optimization using Traveling Salesman Problem**

Hanan Abdullah, Nasim Najieb, and Razan Ashour  
Department of Industrial Engineering and Management, University of Sharjah, UAE

## 12. Best Poster Awards

### **1<sup>st</sup> place**

#### **Developing a Patient Transfer Device Prototype Using Human Factors Techniques and Human Digital Modeling**

Brittney Jimerson, Eui Park, and Steven Jiang  
North Carolina A&T State University, Greensboro, NC, USA

### **2<sup>nd</sup> place:**

#### **Fuzzy Modelling of Uncertain Data in the Layers of Protection Analysis**

Nouara Ouazraoui  
University of Batna, Algeria

### **3<sup>rd</sup> place:**

#### **Zonal Analysis of PHEVs/EVs Penetration: A Mean to Mitigate Vehicle Emissions**

Lena Ahmadi, Pedram Yazdan Panah, Ali Elkamel, Sabah Abdul-Wahab, Eric Croiset, Peter Douglas, University of Waterloo, Canada  
Suad Al-Adwani, Department of Environmental Technology Management, Kuwait University  
Evgeniy Entchev, Energy Technology Centre, Natural Resource Canada, Ottawa, Canada

## 13. Outstanding Chapter Award

IEOM Saudi Chapter

## 14. Best Track Papers Awards

Because of the diversity of the research, entries of real case examples and quality reporting in the papers, it was a very hard decision to select the finalists in each track by our panel of judges. After considering all entries the following papers were awarded for the IEOM 2015 Track Best Papers Awards. The awards will be presented at the award dinner of the IEOM Conference in Dubai on Wednesday, March 4, 2015.

### Artificial Intelligence Track

**ID 299 Fuzzy Modelling of Uncertain Data in the Layers of Protection Analysis**  
Nouara Ouazraoui, University of Batna-Algeria, Batna, Algeria

**ID 223 Data Mining Application in Banking Sector with Clustering and Classification Methods**  
Asli Çaliş, Gazi University, Ankara, Turkey  
Ahmet Boyaci, Hitit University, Çorum, Turkey  
Kasim Baynal, Kocaeli University, Kocaeli, Turkey

### Automation and Control Track

**ID 401 Evaluation of Deadlock Control Design s in Automated Manufacturing Systems**  
Abdulrahman M. Al-Ahmari, and Husam Kaid, King Saud University, Riyadh, Saudi Arabia  
Emad Abouel Nasr, King Saud University, Riyadh, Saudi Arabia and Helwan University, Cairo, Egypt  
Abdulaziz El-Tamimi, King Saud University, Riyadh, Saudi Arabia  
Zhiwu Li, Xidian University, Xi'an, China

### Case Studies Track

**ID 100 Simulation Helps Local Grocery Store Compete Effectively Against Large Chains**  
Edward Williams, University of Michigan – Dearborn, USA  
Jared Gruber, Oakwood Healthcare, Dearborn, Michigan, USA  
Renée Smiddy, Henry Ford Health System, Detroit, Michigan, USA  
Jeffrey Watson, Credit Acceptance, Southfield, Michigan, USA

### Computers and Computing Track

**ID 164 Diacritics of Arabic Natural Language**  
Rosziati Ibrahim, Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat, Johor, Malaysia

### Construction Management Track

**ID 259 Mobile On-site Factories – Scalable and Distributed Manufacturing Systems for the Construction Industry**  
Patrick Dallasega, Dominik T. Matt and Erwin Rauch, Free University of Bolzano, Italy

### Energy Track

**ID 446 A Small Hydro Power Plant at Tsanga River (Nyanga) to Feed into a Grid**  
Charles Mbohwa and Loice Gudukeya, University of Johannesburg, South Africa

**ID 347 Wind-Solar Energy Potentials for Three Free Trade and Industrial Zones of Iran**  
Ali Mostafaeipour Yazd University, Yazd, Iran  
Kasra Mohammadi and Majid Sabzpooshan, Kashan, Iran

### Engineering Economy Track

**ID 688 Versatile Multi-Objective Genetic Optimization for Non-Identical Multi- Story Building Projects**  
Fatma Agrama, Menoufia University, Shebien El-Koom, Menoufia, Egypt

### Engineering Education Track

**ID 323 Boosting Students' Proficiency in Thermodynamics via E-Learning**  
Waleed Ahmed and Ali Al Marzouqi, UAE University, Al Ain, Abu Dhabi, United Arab Emirates

### Engineering Management Track

**ID 438 An Alternative Framework for Engineering Change Management**  
Michael Mutingi, University of Botswana, Gaborone, Botswana  
Charles Mbohwa, University of Johannesburg, South Africa  
Herbert Mapfira, Gaborone, South East, Botswana

### Entrepreneurship and Innovation Track

**ID 615 Worldwide Venture Capital, Intellectual Property Rights and Innovation**  
Arslan Safari, Massachusetts Institute of Technology (MIT), Cambridge, MA. USA

# 2015 IEOM Society Awards

---

## Facilities Planning and Management Track

**ID 551 Two Step Facility Layout Optimization of an Indian Bus Body Manufacturing Plant Using Artificial Bee Colony Algorithm and its Variants**

Suman Samanta, Deepu Philip, Rishabh Deo Mall and Amandeep Singh IIT Kanpur, Uttar Pradesh, India

## Healthcare Systems Track

**ID 642 A Multi-Criteria Approach for Nurse Scheduling - Fuzzy Simulated Metamorphosis Algorithm**

Michael Mutingi, University of Botswana, Gaborone, Botswana  
Charles Mbohwa, University of Johannesburg, South Africa

## Human Factors and Ergonomics Track

**ID 559 Design and Construction of an Ergonomic Footrest for an Electric Three Wheeler Vehicle**

Abu Raihan Md. Harunur Rashid, Islamic University of Technology (IUT), Gazipur, Dhaka, Bangladesh

**ID 408 The Musculoskeletal Disorder Effects on the Use of Single and Dual Monitor Workstations**

Rene Estember, Regil Panugot and Angelica Vale, Mapua Institute of Technology, Manila, Philippines

## IE/OM in Asia Track

**ID 524 Multivariate Statistical Process Control for Engine Flatness Using Two-Dimensional Fused LASSO**

Yongting Lu and Yanting Li, Department of Industrial Engineering, Shanghai Jiao Tong University, China

## Information Technology & Information Systems Track

**ID 433 Co-Utility: Self-Enforcing Protocols without Coordination Mechanisms**

Josep Domingo-Ferrer, Jordi Soria-Comas and Oana Ciobotaru, Universitat Rovira i Virgili, Tarragona, Catalonia, Spain

**ID 529 Smart City Logistik Erfurt (SCL): ICT Support for Managing Fully Electric Vehicles in the Domain of Inner City Freight Traffic**

Wilhelm Rossak, Volkmar Schau and Harald Hempel, FSU Jena, Thuringia, Germany  
Steffen Späthe, Navimatix GmbH, Jena, Thuringia, Germany

## Inventory Management Track

**ID 156 To Define Service Level in an Integrated Model for Warehouse and Inventory Planning by Utilizing Heuristic Solution: An Example**

Ömer Faruk and Murat Baskak, YILMAZ, Istanbul, Besiktas, Turkey  
Hikmet Erbiyik, Yalova, Turkey

## Lean and Six Sigma Track

**ID 471 Set-up Time Reduction at Stamping Station 1 of Tri-R Allied Industries Incorporated**

Frenzel Paz S. AVECILLA, Jannine S. Fameronag, Nida C. Polled, Alfredo A. Gatdula and Rachel C. Villanueva, Malayan Colleges Laguna, Pulo Diezmo, Cabuyao City, Laguna, Philippines

**ID 004 A Scheme to Achieve Distribution Agility**

Bernardo Villarreal, Lorena Garzafox and Etna Muraira, Universidad de Monterrey, San Pedro Garza Garcia, Nuevo Leon, Mexico

## Logistics Management Track

**ID 365 Optimum Clustering and Routing Model using CVRP Cluster-First, Route-Second in a 3PL Provider**

Ketut Ayu, Nike Septivani, Ani Ani, Stephanie Xu and Sherly Kwan, Jakarta, Indonesia

## Manufacturing and Design Track

**ID 499 Production and Optimization of Aesthetic Braided Composite Bracket and Archwires by Wear Damages**

Sarder Sadique, Marshall University, Huntington, WV, USA

## Modeling and Simulation Track

**ID 065 Mental Model Moderation, Modification and Managing (5M) framework, a System Dynamics and Brunswikian Lens Model approach to Complex Decision Making**

Ramy Harik, University of South Carolina, Columbia, South Carolina, USA  
Wissam EL Hachem, University of Bergen, Hordaland, Norway  
Joseph Khoury, Methode Electronics Inc., Mriehel, Qormi, Malta

**ID 531 Buoyancy Ratio Effects on Coupled Radiation and Double-Diffusive Convection in Non-Gray Air-H<sub>2</sub>O Mixtures**

Mohammed Cherifi and Siham Laouar-Meftah, University M'Hamed Bougara, Boumerdes, Algeria  
Denis Lemonnier Institut P<sup>2</sup> (UPR 3346), Futuroscope Poitou-Charente, France  
Abderrahmane Benbrik, Boumerdes, Algeria

## Operations Management Track

**ID 112 Collaborative Processes within Virtual Manufacturing Business Networks: How SMEs can be benefited?**

AHM Shamsuzzoha, Sultan Qaboos University, Muscat, Oman  
Petri Helo, University of Vaasa, Finland

## Operations Research Track

### ID 075 Metaheuristics for Two-stage No-Wait Flexible Flow Shop Scheduling Problem

Mageed A. Ghaleb, Umar S. Suryahatmaja and Ibrahim M. Alharkan, King Saud University, Riyadh, Saudi Arabia

### ID 295 Analyzing the Effect of Non-normality on the Solution Space for the Economic Statistical Design of X-bar Control Charts

Abdur Rahim, University of New Brunswick, Fredericton, New Brunswick, Canada  
Santiago-Omar Caballero-Morales, Huajuapán de León, Oaxaca, Mexico

## Production Planning and Management Track

### ID 211 Simulation Optimization with GA and OCBA for Semiconductor Back-End Assembly Scheduling

James Lin and Chien-Ming Chen, NTHU, Hsinchu, Taiwan

## Project Management Track

### ID 151 A Fuzzy Linguistic Approach for Human Resource Evaluation and Selection in Software Projects

Vassilis C. Gerogiannis, Elli Rapti, Anthony Karageorgos and Panos Fitsilis, Technological Education Institute of Thessaly, Larissa, Greece

## Quality Control and Management Track

### ID 381 Estimating Sporadic Change Point in the Mean of Polynomial Profiles

Mona Ayoubi and Reza Baradaran Kazemzadeh, Tarbiat Modares University, Tehran, Iran

## Reliability and Maintenance Track

### ID 361 Implementing a Reliability-Centered Maintenance Model for a Power Distribution System: A Case Study in Saudi Arabia

Salem Alshahrani, National Guard, Health Affairs, Dammam, Saudi Arabia  
Laith Al-Hadidi, King Fahd University, Dahrán, Saudi Arabia

## Service Systems and Service Management Track

### ID 067 Efficiently Serving Customers at a Call Center

Chih-Chin Liang, Department of Business Administration, National Formosa University, Huwei Township, Yunlin County, Taiwan

## Supply Chain Management Track

### ID 393 Multi-Criteria Decision Approach for a Sustainable Reverse Logistics Network under Fuzzy Environment

Kuldeep Chaudhary, Amity University, Uttar Pradesh, India  
P.C. Jha, Jyoti Darbari and Vernika Agarwal, University of Delhi, India

## Sustainability and Green Systems Track

### ID 115 Capacitive Deionization based Water Desalination System using an MPPT based Solar Charge Controller

Sai Shankar Balakrishnan, Pranav Pattabi and Kiran Raj R, Chennai, Tamil Nadu, India

### ID 547 A Polynomial Goal Programming Model with Application to Energy Consumption and Emissions in United Arab Emirates

Raja Jayaraman, Khalifa University, Abu Dhabi, United Arab Emirates  
Davide La Torre, Khalifa University, UAE and University of Milan, Italy  
Tufail Malik and Yanthe Pearson, Khalifa University, Abu Dhabi, United Arab Emirates

## Systems Engineering Track

### ID 176 Parallel Implementation of Multiple Linear Regression Algorithm based on MapReduce

Moufida Rehab Adjout and Faouzi Boufares, Laboratory LIPN-UMR 7030-CNRS, Paris 13 University, Villetaneuse, France

## Technology Management Track

### ID 205 Root cause Analysis of the BP Oil Spill in the Gulf of Mexico: Management-Technical Failure or Safety Ignorance

Hatem Oun, University of Nottingham, Nottinghamshire, United Kingdom

## Transportation Track

### ID 43: Dual Cycle Mode Scheduling of Internal Transfer in Container Terminals Using a Genetic Algorithm

M. Nashat Fors, Ghada Elnaggar and Yasmine Abouelseoud, Alexandria University, Alexandria, Egypt