SusTech 2017 Sessions Program

"Sustainability Futures"

This fifth IEEE Conference on Technologies for Sustainability (SusTech 2017), on November 12-14, 2017, explores the development and application of science, engineering, and technology to promote sustainability. SusTech features a combination of academic papers and invited speakers with specialties that are making an impact in the environment sustainability.

The SusTech 2017 Program features:

Eight paper tracks:

- Ecological Sustainability and Conservation
- Energy Efficiency
- Internet of Things - IOT for sustainability
- Intelligent Transportation Systems
- Renewable / Alternate Energy
- Smart Grid
- Societal Implications / Quality of Life
- Water Resources Management

Invited Speakers Tracks:

- Green Business
- Microgrid
- Renewable / Alternate Energy
- Smart Grid
- Societal Implications / Quality of Life
- Solar Technology
- Transportation
- Water Resource Management

Workshops:

- Mobile Microgrid Training Platform Workshop
  The Mobile Microgrid Training Platform offers a plug-and-play environment for education with various microgrid configurations to be wired and tested including a generator, solar PV, battery storage, inverters, grid connection, and a microgrid controller. PDHs available.
- Makers & Sustainability Workshop II
  In this four hour workshop, you will learn the basics of using maker platforms and tools to create proof of concept solutions to sustainability problems. Requires laptop and hardware (parts list provided).

Panels:

- IEEE's role in UN SDGs (Sustainable Development Goals)
- Sustainability Policy (As the U.S. Government Pulls Back on Energy Efficiency, How Will State Governments and the Private Sector React?)
- Sustainability Industry Forum (views from iNEMI, Buildings, Water, & Autonomous Vehicles)

Keynotes:

- Earth Observation Processing by Lauryn Gutowski, EOS Data Analytics, Inc
- Energy Infrastructure of the Future, by Joshua D. Rhodes, Webber Energy Group and the Energy Institute at UT Austin
- The Central Arizona Project, by Theodore C. Cooke, General Manager, Central Arizona Water Conservation District

Invited talks include:

- Grid Project Impacts Quantification (GridPIQ) Tool (Pacific Northwest National Laboratory)
- Social Implications of Technology – Creating Sustainable Interventions in Resource Constrained Environments (IEEE SSIT)
- Draft IEEE Standard for DC Microgrids
- On-Site Biomass Co-Gen Case Study: Unleashing Power to Create Value for the Wood Products Industry (Eaton)
- Utility-Scale Photovoltaics: Increasing Capacity Growth, Grid Penetration, and Grid Stability Challenges (Burns & McDonnell)
- Ocean Sustainability and Resources (IMT Atlantique)
- Global Future of Water (International Research Center)
- The Terawatt Challenge for Photovoltaics (Arizona State University)
- Powering Innovation in Global Development (Arizona State University)
- Sustain & Gain: Growing a business that multiplies your impact! (ER2)
- Sustainable Economic Development to Overcome Local Pollution and Global Climate Change Damages
- Autonomous Vehicles for a Sustainable World (NXP Semiconductors)
- Green Incentives & Green Company Positioning for Funding and Growth (Rodman CPAs)
- Cloud-based Charging Management of Electric Vehicles and Democratizing Energy Trading in the Era of Blockchain (University of New Mexico)
- Solar Nights: The Economics of Large Utility Scale Hybrid Solar Storage Systems (ViZn Energy Systems)
- Wireless Power – Improving Lives and Our Environment (NXP Semiconductors)

Sunday, November 12

Sunday, November 12, 13:00 - 17:00

W1: Makers & Sustainability Workshop II
Teresa Gomez & Alan Tu, Intel Corporation
Room: Palo Verde

Receive hands on experience with the Arduino 101, sensors, and Bluetooth LE. In this four hour workshop, you will learn the basics of using maker platforms and tools to create proof of concept solutions to sustainability problems.

The first half of the course will cover the basics of the popular Arduino environment and its use for simplified embedded programming. We will then incorporate a gas sensor and explore the integrated features of the Arduino 101 microcontroller, including data collection, on-board computation, and connectivity.

W2: Mobile Microgrid Training Platform Workshop
Nathan Johnson, Alexander Mobley and Samantha Janko, Arizona State University
Room: Amphitheater

Global demand for microgrids is expected to grow 5x by 2025. This rapid growth will occur from technical innovation, increased need for reliable power, decreased cost of renewables, and objectives to improve electrical access around the world.
The Laboratory for Energy And Power Solutions (LEAPS) at Arizona State University (ASU) has created workforce development programs to train a new wave of engineers, technicians, and managers needed for the microgrid industry. Hands-on technician training is delivered on-site at ASU and through an extension service using the Mobile Microgrid Training Platform. This platform offers a plug-and-play environment for education with various microgrid configurations to be wired and tested including a generator, solar PV, battery storage, inverters, grid connection, and a microgrid controller. Participants are guided through topics including basic electrical concepts, component integration, safety, and microgrid operation and control. In the related effort, ASU's Vocational Training and Education for Clean Energy (VOCTEC) has successfully delivered solar PV training to over 20 countries. VOCTEC and LEAPS are working together to accomplish a similar goal in delivering microgrid training around the world.

Sunday, November 12, 15:00 - 19:00
PC: Poster Contest
Prof. Michael Goryll and Dr. Phani Vallabhajosyula, Poster Contest Chairs
Room: Ballroom
Student Poster Contest

View the posters from 3:00-7:00 pm
Judging will occur from 5:30-6:00 pm.
Winners to be announced at 7:00 pm.

Sunday, November 12, 18:00 - 19:00
OR: Opening Reception
Room: Ballroom
Cash bar and Poster Viewing

Monday, November 13

Monday, November 13, 08:00 - 09:00
OK: Opening Remarks and Keynote
Room: Ballroom

Conference Welcome by Vivek Gupta, General Chair
Program Overview, Ed Perkins, Program Chair
Opening Remarks with Kathleen Kramer, IEEE Region 6 Director

Keynote: "Earth Observation Processing and Analytics Services"
Lauryn Gutowski, Project Manager, EOS Data Analytics, Inc.

Monday, November 13, 09:00 - 10:00
MP: Panel-UN SDG (Sustainable Development Goals) challenges & IEEE's response
Room: Ballroom

What is the role of technical professional societies like IEEE in responding to the UN SDG? Is it part of their mission? Or it is best left to their members? Should IEEE et al strive to play a key role as a technology innovator?

Panel:

- Vin Piuri (moderator)
- Rene Garello, IEEE Environmental Engineering Initiative
- Paul Cunningham, 2017-2018 President, IEEE SSIT
- Jim Jefferies, 2017 IEEE President-elect

Monday, November 13, 10:00 - 10:20
MBA: Break

Monday, November 13, 10:20 - 12:00
--Parallel Sessions--

M1-ECO: Ecological Sustainability and Conservation I
Session 1
Room: Sagauro I

Chair: Julanne McCulley (Weber State University, USA)

10:20 *Use of Time-varying Carbon Intensity Estimation to Evaluate GHG Emission Reduction Opportunities in Electricity Sector*
Imran Khan, Michael W. Jack and Janet Stephenson (University of Otago, New Zealand)

10:40 *A Study of the Monthly Insolation in Libya*
Abdulmunim Guwaeder and Rama Ramakumar (Oklahoma State University, USA)

11:00 *Assessment of the Technical Effectiveness of SIRES in a Rural Setting*
Zeel Maheshwari and Rama Ramakumar (Oklahoma State University, USA)

11:20 *A Novel Integration of Hyper-spectral Imaging and Neural Networks to Process Waste Electrical and Electronic Plastics*
Alimohammad Tehrani and Hamid Karbasi (Conestoga College, Canada)

11:40 *Sustainable Development Through Climate Change Mitigation and Biomass Agriculture: India's Perspective*
Adil Usman (Indian Institute of Technology Mandi, India)

M2-EFF: Energy Efficiency I
Session 2
Room: Palo Verde

Chairs: Debbie Horn (IBM, USA), Youngil Kim (Ajou University, Korea & The George Washington University, USA)

10:20 *Valuation Diagramming and Accounting of Transactive Energy Systems*
Atefe Makhmalbaf (University of Texas - Arlington, USA); Donald Hammerstrom (Pacific Northwest National Laboratory, USA); Qiuhua Huang (PNNL, USA); Yingying Tang (Pacific Northwest National Laboratory, USA)

10:40 *Progression of Product Energy Efficiency Requirements in the European Union*
Debbie Horn (IBM, USA)

11:00 *Occupant Engagement Leads to Substantial Energy Savings for Plug Loads*
Moira Hafer and Wes Howley (Stanford University, USA); Mindy Chang, Kristin Ho, Jennifer Tsau and Hedi Razavi (Keewi Inc., USA)

11:20 *Reliability Analysis of Power System Using a Frequency Domain Analytical Method*
Salman Kahrobaee (SCE, USA); Bamdad Falahati (SEL, USA); Sohrab Asgarpoor (University of Nebraska-Lincoln, USA); Ali Halimi (ETAP, USA)

11:40 *Power Management Strategy for Residential Housing Connected to the Rooftop Solar PV*
Youngil Kim (Ajou University, Korea); Junda Zhao (The George Washington University, USA); Sungjin Kim (Samsung Advanced Institute of Technology (SAIT), Korea); Robert Harrington (The George Washington University, USA)

M3-RNW: Renewable / Alternate Energy I
Session 3
Room: Mesquite

Chair: Maxx Patterson (IEEE Sus Tech, Arizona State University, USA)

10:20 *Increasing Economic Viability and Safety Through Structural Health Monitoring of Wind Turbines*
Daniel Schwahlen (University of Applied Sciences Ruhr West, Germany); Jens Fey and Christoph Nieß (Hochschule Ruhr West, Germany); Martin Reimann and Uwe Handmann (University of Applied Sciences Ruhr West, Germany)

10:40 *Assessing Social Sustainability for Biofuel Supply Chains: The Case of Jet Biofuel in Brazil*
Zhizhen Wang (Technical University of Delft, The Netherlands)

11:00 *Sustainable Maximum Power Extraction from Urban Solid Waste Incineration*
Matias Munoz (UFPR, Brazil); Jose Vargas (Federal University of Parana, Brazil); Wellington Balmant (UFPR, Brazil); Alejandro Arena (UTN-FRM, Argentina); Juan Ordonez (Florida State University, USA); Andre Mariano (Federal University of Parana, Brazil)

11:20 *The Emissions Impacts of Varied Energy Storage Operational Objectives Across Regions*
Emily L Barrett, Brandon Thayer, Karen Studarus and Seemita Pal (Pacific Northwest National Laboratory, USA)

11:40 *Investigating Time-Varying Drivers of Grid Project Emissions Impacts*
Emily L Barrett, Brandon Thayer, Seemita Pal and Karen Studarus (Pacific Northwest National Laboratory, USA)

M4-SG: Smart Grid I
Session 4
Room: Amphitheater

Chairs: Bishnu P. Bhattarai (Idaho National Laboratory, USA), Jake P. Gentle (Idaho National Laboratory & DOE, USA)

10:20 *Estimating the Impacts of Direct Load Control Programs Using GridPIQ, a Web-Based Screening Tool*
Seemita Pal, Brandon Thayer, Emily L Barrett and Karen Studarus (Pacific Northwest National Laboratory, USA)

10:40 *Hierarchical Droop Controlled Frequency Optimization and Energy Management of a Grid-Connected Microgrid*
Poria Fajri, Sima Aznavi and Mohammed Ben-Idris (University of Nevada, Reno, USA); Bamdad Falahati (SEL, USA)

11:00 *Development of Smart Microgrid Research and Educational Testbed*
Kourosh Sedghisigarchi and Cris Sicat (California State University, Northridge (CSUN), USA)

11:20 *A Highly Efficient Non-Isolated DC-DC Buck-Boost Converter with a Cascode GaN-FET and SiC-Schottky Diode*
Salah S. Alharbi, Saleh S. Alharbi, Ali M. S. Al-bayati and Mohammad Matin (University of Denver, USA)

Monday, November 13, 12:00 - 13:30
ML: Lunch & Keynote
Room: Ballroom

Keynote: "Energy Infrastructure of the Future"
Joshua D. Rhodes, Webber Energy Group and the Energy Institute at The University of Texas at Austin

Monday, November 13, 13:30 - 15:00
--Parallel Sessions--

I1: Solar Technology Invited
Invited 1
Room: Sagauro I

Chair: Maxx Patterson (IEEE Sus Tech, Arizona State University, USA)
13:30 “The Terawatt Challenge for Photovoltaics”
Steve Goodnick, Arizona State University

14:00 “Utility-Scale Photovoltaics: Increasing Capacity Growth, Grid Penetration, and Grid Stability Challenges”
(Ken Ekstrom, Burns & McDonnell

14:30 “Solar Nights: The Economics of Large Utility Scale Hybrid Solar Storage Systems”
Paul Siblerud, ViZn Energy Systems

I2: Renewable / Alternate Energy Invited
Invited 2
Room: Mesquite

Chair: Julanne McCulley (Weber State University, USA)

13:30 “On-Site Biomass Co-Gen Case Study: Unleashing Power to Create Value for the Wood Products Industry”
Dave Durocher, Eaton Corp.

14:00 “Sustainable Economic Development to Overcome Local Pollution and Global Climate Change Damages”
Roy McAlister, P.E., McAlister Technologies, LLC

14:30 TBA

I3: Transportation Invited
Invited 3
Room: Palo Verde

Chair: Babak Barazandeh (Virginia Tech, USA)

13:30 “Wireless Power - Improving Lives and Our Environment”
Steven Tateosian, NXP Semiconductors

14:00 “Autonomous Vehicles for a Sustainable World”
Sergio Pacheco, NXP Semiconductors

14:30 “Cloud-based Charging Management of Electric Vehicles and Democratizing Energy Trading in the Era of Blockchain”
Bhaskar Prasad Rimal, University of New Mexico

I4: Smart Grid Invited
Invited 4
Room: Amphitheater

Chairs: Bishnu P. Bhattarai (Idaho National Laboratory, USA), Jake P. Gentle (Idaho National Laboratory & DOE, USA)

13:30 "Draft IEEE Standard for DC Microgrids"
Joe Decuir, IEEE Seattle Section, USA

14:00 "Grid Project Impacts Quantification (GridPIQ) Tool"
Emily Barrett & Brandon Thayer, Pacific Northwest National Laboratory [60 minutes]

Monday, November 13, 15:00 - 15:30
MBP: Break

Monday, November 13, 15:30 - 17:10
--Parallel Sessions--

M5-ECO: Ecological Sustainability and Conservation II
Session 5
Room: Sagauro I

Chair: Julanne McCulley (Weber State University, USA)

3:30 *Support of Distributed Ecological Experiments via Closed-Loop Environmental Control*
Jonathan Knapp (Northern Arizona University & Real-Time Intelligent Systems Lab, USA); Michael Middleton, Paul G. Flikkema, Paul Heinrich and Amy Whipple (Northern Arizona University, USA)

3:50 *Remote Structural Health Monitoring of Existing Concrete Bridges with AASHTO Type IV Girder Using SmartBridge Sensor Nodes*
Francis Aldrine Uy and Jan Aldrich R Gaviña (Mapua Institute of Technology, Philippines); John Paul Carreon (Mapua University, Philippines)

4:10 *Data Calibration of the Actual Versus the Theoretical Micro Electro Mechanical Systems (MEMS) Based Accelerometer Reading Through Remote Monitoring of Padre Jacinto Zamora Flyover*
John Mark Payawal and Francis Aldrine Uy (Mapua Institute of Technology, Philippines); John Paul Carreon (Mapua University, Philippines)

4:30 *Strike-Alert: Towards Real-time, High Resolution Navigational Software for Whale Avoidance*
Benedicte Madon (Université de Bretagne Occidentale, France); René Garello (IMT Atlantique & CNRS LabSTICC, France); Romain David (IMBE, France); Linwood Pendleton (UBO, France); Ronan Fablet (IMT Atlantique, France)

4:50 *Sustainability Models for 3D Printed Woodwinds*
Charles Jackson (Northrop Grumman, USA)

M6-EFF: Energy Efficiency II
Session 6
Room: Palo Verde

Chair: Youngil Kim (Ajou University, Korea & The George Washington University, USA)

3:30 *A PID Inspired Feature Extraction Method for HVAC Terminal Units*
Maitreyee Dey (London South Bank University); Manik Gupta, Soumya Prakash Rana, Mikdam Turkey and Sandra Dudley (London South Bank University, United Kingdom (Great Britain))

3:50 *The Occupant Comfort Challenge of Building Energy Savings Through HVAC Control*
Alexander Brissette (ABB Inc., USA); Joseph Carr (ABB, USA); Philip Juneau (ABB Inc., USA)

4:10 *Simulation of Retrofitting of Ligthing System of an Academic Building for Energy Savings*
Daniel Fernando Espejel-Blanco, Jose Hoyo-Montano, Jesús Tarín-Fontes, Hilario Mayboca-Araujo, Diego Schurch-Sanchez and Diana González-Guerrero (Instituto Tecnológico de Hermosillo, Mexico)

4:30 *Applying Innovations in Circulator Pump Technology for Commercial Building Applications*
Baskar Vairamohan and Marek Samotyj (EPRI, USA); Nick Pournaras (Southern Company Services, Inc., USA); Brian Harrison (Southern Company, USA)

M7-RNW: Renewable / Alternate Energy II
Session 7
Room: Mesquite

Chair: Maxx Patterson (IEEE Sus Tech, Arizona State University, USA)

3:30 *Adequacy Considerations in Concentrated Solar Thermal Integrated Electric Power System*
Ahmad Alferidi and Rajesh Karki (University of Saskatchewan, Canada)

3:50 *Load-match-driven Design Improvement of Solar PV Systems and Its Impact on the Grid with a Case Study*
Hadia Awad and Mustafa Gul (University of Alberta, Canada); Haitao Yu (Landmark Group of Companies, Canada)

4:10 *Cost Analysis of an Improved Z-Source-Based Power Processing System for Photo-Voltaic Applications*
Arash Torkan (Megger Company, USA); Mehrdad Ehsani (Texas A&M University, USA)

4:30 *Solar Playgrounds: A Design Feasibility Study*
Jordan Ellsworth, Ivyann Oveson and John Salmon (Brigham Young University, USA)

4:50 *Using Earth's Magnetic Field as a Power Source*
Dennis McCrady (Dynaspot, USA)

M8-SG: Smart Grid II
Session 8
Room: Amphitheater

Chairs: Bishnu P. Bhattarai (Idaho National Laboratory, USA), Jake P. Gentle (Idaho National Laboratory & DOE, USA)

3:30 *A Novel Distributed Approach Based Reactive Power Support in Microgrids*
Bharat Chetry (University of Porto & Tribhuwan University, Portugal); Adriano Carvalho (University of Porto, Portugal); Rui Brito (Instituto Superior de Engenharia do Porto, Portugal)

3:50 *Performance Evaluation of a DC-DC Boost Converter with Wide Bandgap Power Devices*
Saleh S. Alharbi, Ali M. S. Al-bayati, Salah S. Alharbi and Mohammad Matin (University of Denver, USA)

4:10 *3D Model of Dispatchable Renewable Energy for Smart Microgrid Power System*
Fred Chiou and Richard Fry (Weber State University, USA); Jake P. Gentle (Idaho National Laboratory & DOE, USA); Timothy McJunkin (Idaho National Laboratory, USA)

Monday, November 13, 18:00 - 19:00
MR: Reception
Room: Ballroom

Monday, November 13, 19:00 - 20:30
MD: Dinner & Keynote
Room: Ballroom

Keynote: "The Central Arizona Project"
Theodore C. Cooke, General Manager, Central Arizona Water Conservation District

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Tuesday, November 14

Tuesday, November 14, 08:00 - 09:00
TP: Sustainability Policy Panel
Room: Ballroom

Moderator: Ed Perkins (IEEE SusTech)
Panelists:

- Katie Reilly, Consumer Technology Association (producer of CES)
- Mark Hartman, Chief Sustainability Officer, City of Phoenix (Arizona)
- Patricia Reiter, Executive Director, Rob and Melani Walton Sustainability Solutions Initiatives, Arizona State University

Tuesday, November 14, 09:15 - 10:15
--Parallel Sessions--

I5: Water Resource Management Invited
Invited 5
Room: Hohokam

Chair: René Garello (IMT Atlantique & CNRS LabSTICC, France)

9:15 “Global Future of Water”
Mark Goldstein, President, International Research Center

9:45 “Ocean Sustainability and Resources”
René Garello, Professor, IMT Atlantique

I6: Microgrid Invited
Invited 6
Room: Palo Verde

Chairs: Bishnu P. Bhattarai (Idaho National Laboratory, USA), Jake P. Gentle (Idaho National Laboratory & DOE, USA)

9:15 “Powering Innovation in Global Development”
Nathan Johnson, Assistant Professor and Director of the Laboratory for Energy and Power Solutions (LEAPS), Arizona State University

I7: Societal Implications Invited
Invited 7
Room: Mesquite

Chair: James J Stewart (University of Maryland University College, USA)

9:15 “Social Implications of Technology – Creating Sustainable Interventions in Resource Constrained Environments”
Paul Cunningham, 2017-2018 President, IEEE SSIT

9:45 “Sustain & Gain: Growing a business that multiplies your impact!”
Chris Ko, ER2 - Electronic Responsible Recyclers

I8: Green Business Invited
Invited 8
Room: Amphitheater

Chair: Mike Andrews

9:15 "Green Incentives & Green Company Positioning for Funding and Growth"
Kathy Parker, Rodman CPAs [60 minutes]

A comprehensive overview for renewable energy and cleantech companies to address the following questions:
- What does this mean to me?
- What are the extenders?
- How should we utilize the tax credits?
- How can we attract investors, and what investment structures are investors looking for?
- What should we look for when modeling a project?

Tuesday, November 14, 10:15 - 10:30
TB: Break

Tuesday, November 14, 10:30 - 12:10
--Parallel Sessions--

T1-IOT: Internet of Things - IOT for sustainability
Session 9
Room: Amphitheater

Chair: Jason K. Hui (BAE Systems, USA)

10:30 *Wireless Power Transfer Integrated Board for Low Power IoT Applications*
Colin Pardue, Anto Davis and Mohamed Bellaredj (Georgia Tech, USA); Madhavan Swaminathan (, USA)

10:50 *Evaluating the Differences Between Direct and Indirect Interdependencies and Their Impact on Reliability in Cyber-Power Networks*
Bamdad Falahati (SEL, USA); Salman Kahrobaee (SCE, USA); Omid Ziaee (University of Nebraska-Lincoln, USA); Pedram Gharghabi (Mississippi State University, USA)

11:10 *Cloud-based Smart Device for Environment Monitoring*
Biao Jiang (The City University of New York, USA); Christian Huacón (CUNY Hostos Community College, USA)

T2-IV: Intelligent Transportation Systems
Session 10
Room: Palo Verde

Chair: Charles Jackson (Northrop Grumman, USA)

10:30 *Examining the Impact of PHEVs on GHG Emissions Based on Various Objectives*
Bamdad Falahati (SEL, USA); Masood Shahverdi (California State University, USA); Saeed Mohajeryami (University of North Carolina, USA); Poria Fajri (University of Nevada, Reno, USA)

10:50 *Evaluating the Environmental Impact of Traffic Congestion Based on Sparse Mobile Crowd-sourced Data*
Peng Hao (Center for Environmental Research & Technology, University of California, Riverside, USA); Chao Wang (University of California, Riverside & CE-CERT, USA); Guoyuan Wu, Kanok Boriboonsomsin and Matthew J Barth (University of California, Riverside, USA)

11:10 *Design and Implementation of a Bootloader in the Context of Intelligent Vehicle Systems*
Daniel Bogdan (Continental Automotive Romania, Romania); Razvan Bogdan (Politehnica University of Timisoara, Romania); Mircea Popa ("Politehnica" University from Timisoara, Romania)

11:30 *MPC-Based Power Management Strategy to Reduce Power Loss in Energy Storage System of a HEV*
Morgan Cook and Justin Bower (California State University Los Angeles, USA); Masood Shahverdi (California State University, USA); Bamdad Falahati (SEL, USA); David Blekhman (California State University Los Angeles, USA)

11:50 *Automation of Ultra-Light Vehicles*
Tyler Folsom (University of Washington, USA); Rob Cotter (Organic Transit, USA)

T3-W: Water Resource Management
Session 11
Room: Hohokam

Chair: René Garello (IMT Atlantique & CNRS LabSTICC, France)

10:30 *Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements*
Joshua Benjamin (University of Florida & University of South Florida, USA); David Kaplan (University of Florida, USA)

10:50 *A Spatially Explicit Assessment of Water Use by the Global Semiconductor Industry*
Kali Frost and Inez Hua (Purdue University, USA)

11:10 *Automated Real-time Monitoring System (ARMS) of Hydrological Parameters for Ambuklao, Binga and San Roque Dams Cascade in Luzon Island, Philippines*
Cris Edward Monjardin (Mapua University, Philippines); Francis Aldrine Uy and Fibor Tan (Mapua Institute of Technology, Philippines); Febus Reidj G. Cruz (Mapua Institute of Technology, Philippines & Chung Yuan Christian University, Taiwan)

T4-SOC: Societal Implications / Quality of Life
Session 12
Room: Mesquite

Chair: James J Stewart (University of Maryland University College, USA)

10:30 *Assessing Government's Solutions for Urban Growth Within a Sustainable Development Approach, the Case of Portland, Oregon*
M. Oussama Laraichi and Tugrul Daim (Portland State University, USA)

10:50 *The TripleRM Global Health Management Model (GHMM): Risk Management of Vector Borne Infectious Diseases to Build Sustainable, Adaptable and Resilient Communities*
Suraj Sheth (Magnova Global, USA)

11:10 *A System Dynamics Model of the Auto Industry: Case Study on Sustainability of Iran's Car Market*
Babak Barazandeh (Virginia Tech, USA); Mohammadhussein Rafieisakhaei (Texas A&M University, USA)

11:30 *A Data Analytics Based Approach for Modeling the Effects of a Carbon Market on the Sustainable Control of CO2 Emissions in Latin America*
Babak Barazandeh (Virginia Tech, USA); Mohammadhussein Rafieisakhaei (Texas A&M University, USA)

11:50 *Interoperable Toolchains in Cyber-physical Systems with a Sustainability Perspective*
Didem Gürdür and Katja Gradin (KTH Royal Institute of Technology, Sweden)

Tuesday, November 14, 12:15 - 13:30
TL: Lunch
Room: Poolside

Tuesday, November 14, 13:30 - 15:00
TF: Industry Forum & Closing
Room: Ballroom

Chair: Vivek Gupta (NXP Semiconductor & IEEE Phoenix Section, USA)

Industry Forum Participants:

- Mark Goldstein (moderator), President, International Research Center
- Bill Bader, International Electronics Manufacturing Initiative (iNEMI): *"The iNEMI 2017 Sustainable Electronics Roadmap"*
- Eric Bill, Autocase*: "The 'Holy Grail': Automating the business case for greener, healthier buildings & sites"*
- Taimur Burki, Intel: *"What it takes to build a smart and green state of the art building"*
- Charles Ross, NXP Semiconductors: "Advanced Driver Assistance Systems (ADAS) and the Future of Driving"