

# SusTech 2013

## Conference Program Preliminary Timetable

(Subject to change)

Thursday August 1, 2013			
7:00am	Registration Opens & Speakers' continental breakfast & load talks		
	MORNING - CONTRIBUTED PAPERS		
	Ross Island/Morrison	Hawthorne/Sellwood	Broad/Weidler
	SMART GRID I  Track Co-Chairs: Bob Bass Annabelle Pratt	ALTERNATIVE ENERGY I  Track Co-Chairs: Mohamed Osman Quentin Ming	ENERGY EFFICIENCY I  Track Co-Chairs: Dan Donahoe Michael O'Keefe
8:30am	Residential Water Heaters as a Grid-Scale Energy Storage Solution Using Model Predictive Control	Optimal Generation Expansion Planning with Integration of Variable Renewables and Bulk Energy Storage Systems	A Long-Term Case Study of Improved Residential Sustainability
8:50am	Active Power Control of Photovoltaic Power Systems	On the Usage of Storage Systems in the Presence of Ramping Costs and High Penetration of Renewables	Hybrid Calibration Methodology for Building Energy Models Coupling Sensor Data and Stochastic Modeling
9:10am	Load Modeling Methodologies for Cascading Outage Simulation Considering Power System Stability	Variable Energy Resource Induced Power System Imbalances: Mitigation by Increased System Flexibility, Spinning Reserves and Regulation	Reliability-Driven Optimum Standby Electric Storage Allocation for Power Distribution Systems
9:30am	Smart Grid Distribution Prediction and Control Using Computational Intelligence	<del>Power Control and LVRT of Wind Farms with HVDC interconnection</del>  -Withdrawn-	Information and Communications Technology based Solutions in Achieving Building Energy Efficiency
9:50am	Multi-agent residential demand response based on load forecasting	Constrained Support Vector Machines for Photovoltaic In-Feed Prediction	Advancing Industrial Sustainability Through Energy Efficiency Improvements in Motors and Motor-driven Systems

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Thursday August 1, 2013			
10:10am MORNING BREAK (Exhibits Area)			
	<b>SMART GRID II</b>  <b>Track Co-Chairs:</b> <b>Bob Bass</b> <b>Annabelle Pratt</b>	<b>ALTERNATIVE ENERGY II</b>  <b>Track Co-Chairs:</b> <b>Mohamed Osman</b> <b>Quentin Ming</b>	<b>QUALITY of LIFE I</b>  <b>Track Co-Chairs:</b> <b>Guru Madhavan</b> <b>Jim Morris</b>
10:40am	Look-ahead Economic Dispatch of Microgrids with Energy Storage, Using Linear Programming	DC Arc Flash Calculations for Solar Farms	Server Sky - Computation and Power in Orbit
11:00am	A Motor-Generator and Supercapacitor Based System for Micro-Grid Frequency Stabilization	Wave Energy Converter Modeling in the Time Domain: A Design Guide	Piezoelectric Sensors for Taxiway Airport Traffic Control System
11:20am	Optimal Demand Response Bidding and Pricing Mechanism: Application for a Virtual Power Plant	Mobile Elemental Power Plant (MEPP)	Effects of Salinity and Feed Temperature on Permeate Flux of an Air Gap Membrane Distillation Unit for Sea Water Desalination
11:40am	Characterizing Energy Usage of Chevrolet Volt Versus Speed	Novel Wireless Performance Monitoring for Small Wind Turbines	Our Environmental Handprint -- The Good We Do
Noon	The Effect of Demand Side Management on Reliability of Automated Distribution Systems	Development of low-profile piezoelectric energy harvester for high load application	OPEN
12:30pm	<b>LUNCH (Holladay)</b>  <b>Keynote: Systems Thinking for Sustainability</b> <b>Thomas P Seager, Arizona State University</b>		

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Thursday August 1, 2013			
AFTERNOON - INVITED SPEAKERS			
	ALTERNATIVE ENERGY III  Track Co-Chairs: Mohamed Osman Quentin Ming	ELECTRIC VEHICLES  Track Co-Chairs: Dan Hammerstrom Lee Stogner	ELECTRONIC MATERIALS  Track Co-Chairs: Chuck Bauer Ning-Cheng Lee
2:00pm	Overview of SCE Solar Programs	Electric Transportation: Trends and Opportunities	Aluminum: A Sustainable Substrate Alternative to FR4 in PCB Assemblies
2:30pm	Meeting the Technical Challenges of Integrating Wind Power Plants with the Grid	CONFESSIONS OF AN E.V. ADVOCATE: Thinking back on the past 5 years; Mind surfing ahead on the next 5 years	Optimization of Material Resource Conservation in Electronics Through Design of Products and EoL Systems
3:00pm	Energy harvesting technologies for structural health monitoring application	IEEE's Transportation Electrification Initiative	Green Design: Field lessons in repairable consumer electronics engineering
3:30pm	<b>AFTERNOON BREAK (Exhibits Area)</b>		
4:00pm	The role of the fuel cell system in sustainable power generation	Driving to Net Zero with full performance	Highlights from 2013 iNEMI Environmentally Sustainable Electronics Roadmap Chapter
4:30pm	Modeling and simulation of the microalgae derived hydrogen process in compact photobioreactors	Lithium-ion battery pack research and development at Brammo Inc	<b>DIAMOND Patron Presentation:</b> Transparency in Electronics: Going Above and Beyond
5:00pm	Oregon State University's Small Modular Nuclear Reactor Experimental Program	Batteries: The Search for a Perfect Chemistry	
5:30pm	<b>UL SPONSORED RECEPTION with SUSTECH POSTERS (Multnomah)</b>		
7:00pm	[IEEE-USA Annual Meeting Attendees - Opening Dinner]		

# SusTech 2013

Friday August 2, 2013			
6:30am	Registration Opens/Breakfast (Holladay) & Speakers' load talks		
<b>INVITED SPEAKERS</b>			
	Ross Island/Morrison	Hawthorne/Sellwood	Broad/Weidler
	<b>SMART GRID III</b>  <b>Track Co-Chairs:</b> <b>Bob Bass</b> <b>Annabelle Pratt</b>	<b>ENERGY EFFICIENCY II</b>  <b>Track Co-Chairs:</b> <b>Dan Donahoe</b> <b>Michael O'Keefe</b>	<b>QUALITY of LIFE II</b>  <b>Track Co-Chairs:</b> <b>Guru Madhavan</b> <b>Jim Morris</b>
8:30am	Transactive Control in the Pacific Northwest Smart Grid Demonstration Project	Progress in Technology for Energy Efficiency	Wastewater – Sustainability Issues
9:00am	Insights gained on residential energy usage from the Pecan Street smart grid demonstration Project	Green Data Center Technologies Case Study: Using as Little as Possible, as Efficiently as Possible	Sustainability As A Key Component To Addressing The Sanitation Crisis In The Developing World
9:30am	Smart Grid Research at the National Renewable Energy Laboratory	The Changing Utility Business Model & Challenge For Energy Efficiency	Electromagnetic Green Spaces for Research and Recreation
10:00am	<b>MORNING BREAK (Exhibits Area)</b>		
10:30am	Smart Grid.... A Team Sport	<b>ALTERNATIVE ENERGY SPECIAL PRESENTATION: OCEAN WAVE ENERGY</b>  Advancing Ocean Wave Energy through Research, Development and Testing Including Research on Materials and Technologies for Bio-Fouling Resistant Surfaces	Household Battery Re-use vs. Recycle Technologies, a Life Cycle Analysis Perspective
11:00am	Securing the Modern Grid: The Way Forward		Novel nanomaterials for water desalination technology
11:30am	Configurable PV solutions for high PV penetration		Education for Sustainability
Noon	<b>CLOSING PANEL DISCUSSION (Track Chairs 1 -6) (Multnomah)</b>		
1:00pm	<b>LUNCH (Holladay)</b>  <b>21st Century Engineering – Gordon Day, 2012 IEEE President</b>		
2:30pm	<b>SusTech Adjourn</b>		