



Industry Conference & NSF/DOE Annual Site Visit

November 14-17, 2017

PRE-CONFERENCE EVENT

Monday, November 13, 2017

Downtown Hilton, 501 W. Church Ave., Knoxville, TN 37902

6:00 - 9:00	Reception (informal event for industry/SAB guests) (Ocoee)
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INDUSTRY CONFERENCE

Tuesday, November 14, 2017

Downtown Hilton, Knoxville, TN

7:00 - 8:00	Registration and Breakfast (Mezzanine, Salons D & E, overflow in Sequoyah 3)
8:00 - 8:15	Opening & Welcome - Kevin Tomsovic, <i>Center Director</i> (Salons A, B & C)
8:15 - 12:00	Invited Speakers Presentations
8:15 - 8:45	<i>Situational Awareness Signals in Grid Frequency</i> , Terry Bilke, Consulting Advisor , Midcontinent ISO (MISO)
8:45 - 9:15	<i>Total Industrial Awareness: is it physical or cyber?</i> , Sterling Rooke, Director-Elect ISA Communications Division , Brixon, Inc.
9:15 - 9:45	<i>Navy Application of Silicon Carbide (SiC) Wide Bandgap (WBG) Semiconductors Enabling Future Power and Energy Systems</i> , CAPT Lynn J. Petersen USN (ret), Program Officer , Office of Naval Research
9:45 - 10:00	Break
10:00 - 10:30	<i>California Environmental Initiatives and Electricity Industry Transformation</i> , Joseph Yan, Principal Manager of Price Forecasting & Modeling , Southern California Edison
10:30 - 11:00	<i>Power Electronics for Resilient Distributed Generation Grids</i> , Allen Hefner, DOE Technology Manager , DOE/NIST
11:00 - 11:30	<i>Applied Research Projects and Programs at NRECA</i> , Venkat Banunarayanan, Associate Director - Distributed Generation, Business & Technology Strategies , NRECA
11:30 - 12:00	<i>Advanced Software Tools for Enhancing Power System Reliability and Resiliency</i> , Marianna Vaiman, Executive Vice President , V&R Energy
12:00 - 1:00	Lunch (Salons D & E, and Sequoyah 3)

1:00 - 4:00	Technical Paper Presentations (Parallel Sessions in Salons C and A & B)	
1:00 - 2:10	Power System Modeling and Estimation (Salons A&B) Session Chair: Hanoch Lev-Ari	Power Electronics and Renewable Energy (Salon C) Session Chair: Kennedy Aganah
1:00 – 1:10	Robust Transformer Tap Estimation Yuzhang Lin, NEU	Dead-Time Optimization for SiC Based VSI Using Online Condition Monitoring Jacob Dyer, UTK
1:10 – 1:20	Tracking Three Phase Untransposed Transmission Line Parameters Using Synchronized Measurements Pengxiang Ren, NEU	Investigation of Power Electronics Systems at Cryogenic Temperatures Handong Gui, UTK
1:20 – 1:30	A Fast and Robust Linear State Estimator for Very Large Scale Interconnected Power Grids Chenxi Xu, NEU	Characterization and Modeling of a SiC MOSFET's Turn-off Overvoltage Wen Zhang, UTK
1:30 – 1:40	An Optimal Thévenin Equivalent Estimation Method and its Application to the Voltage Stability Analysis of a Wind Hub Daniel Douglas, RPI	Impact of DC Fault in Multi-terminal DC Grid on Connected AC System Stability Shuoting Zhang, UTK
1:40 – 1:50	Stochastic Power System Simulation Using the Adomian Decomposition Method Nan Duan, UTK	A Game Theoretic Approach for Automated PID Controller Parameter Tuning Cristopher Luciano, TU
1:50 – 2:00	Hybrid Genetic Algorithm based Sensor Placement for Distribution System State Estimation Jiaojiao Dong, UTK	Battery Chemistry Identification for a Multi-Chemistry Battery Energy Storage System Mitchell Smith, UTK
2:00 – 2:10	Hybrid Power System State Estimation with Time Stamping, Communication Irregularities and Co-simulation Vanja Švenda, TFU	Improving Grid Stability Using HVDC Controls Lakshmi Sundaresh, UTK
2:10-2:40	Break	
2:40-4:00	Power System Control Session Chair: Hector Pulgar	Power Monitoring and Operations Session Chair: Meng Wang
2:40 – 2:50	Wide-Area Automatic Generation Control between Control Regions with High Renewable Penetration Christoph Lackner, RPI	Real-Time Event Identification Through Low-Dimensional Subspace Characterization of High-Dimensional Synchrophasor Data Wenting Li, UTK
2:50 – 3:00	A Hybrid Dynamic Demand Control Strategy for Power System Frequency Regulation Qingxin Shi, UTK	Impact of High PV Penetration on the InterArea Oscillations in the U.S. Eastern Interconnection Shutang You, UTK
3:00 – 3:10	Oscillation Energy Based Sensitivity Analysis and Control for Multi-Mode Oscillation Systems Horacio Silva Saravia, UTK	Development of Fast Response Synchrophasor Jiecheng Zhao, UTK

3:10 – 3:20	Control Allocation for Wide Area Coordinated Damping M. Ehsan Raoufat, UTK	Source Location Identification of Power Grid Electromechanical Disturbance Using Computational Intelligence Techniques Yi Cui, UTK
3:20 – 3:30	Hybrid Controller for Wind Turbine Generators to Ensure Adequate Frequency Response in Power Networks Yichen Zhang, UTK	Power Grid Monitoring on Mobile Platform Wenxuan (Will) Yao, UTK
3:30 – 3:40	Nonlinear Modal Decoupling and Control to Prevent Wide-Area Stability Problems Bin Wang, UTK	Integrating a Multi-Microgrid System into Real-Time Balancing Market: Problem Formulation and Solution Technique Yan Du, UTK
3:40 – 3:50	Control and Limit Enforcements for VSC Multi-Terminal HVDC in Newton Power Flow Hantao Cui, UTK	Multi-Objective Optimal Reactive Power Dispatch Using Modified Game Theory Walid Al Misba, TU
4:00-5:00	Industry / Student Mixer (Salons D & E)	
5:30–9:00	Student Orientation and Pizza Dinner (MHK 622, then MHK 647)	
6:30-9:00	Industry / SAB / Faculty Dinner & Meeting (Hiwassee)	
4:00 pm on	SVT airport pick up and check-in to Hilton (Vans will pick SVT up)	
6:00-10:00	SVT Working Dinner and Discussion (Sequoyah 1)	

NSF-DOE SITE VISIT: DAY ONE

Wednesday, November 15, 2017

Downtown Hilton, Knoxville, TN

All sessions – 60% presentation /40% Q&A

7:00-8:00	Registration and Breakfast (Salons D & E, overflow in Sequoyah 3)
8:00-8:20	Welcome – Dr. John Zomchick, <i>Interim Provost</i> ; Kevin Tomsovic, <i>Center Director</i> ; Yichen Zhang, <i>Student Chair</i> ; Deans' Introduction; SVT Introduction (Salons A, B & C)
8:20-9:00	CURRENT Overview
9:00-11:45	Research Thrust Overviews
9:00-9:25	Monitoring Thrust Overview – Yilu Liu, <i>Deputy Director & Thrust Leader</i>
9:25-9:50	Modeling Thrust Overview – Ali Abur, <i>NEU Campus Director & Thrust Leader</i>
9:50-10:05	Break
10:05-10:30	Control Thrust Overview – Joe Chow, <i>RPI Campus Director & Thrust Leader</i>
10:30-10:55	Actuation Thrust Overview – Fred Wang, <i>Technical Director and Thrust Leader</i>
10:55-11:45	CURRENT Engineered Systems Overview – Leon Tolbert, <i>Thrust Leader</i>

11:45-12:30	Site Visit Team Private Session (Sequoyah 1)	Industry Feedback Session (Salons A, B & C)	Dean's Meeting (Boardroom)
12:30-1:30	Lunch (Salons D & E, overflow in Sequoyah 3)		
1:30-2:00	Innovation and Industry Collaboration Program Overview – Lisa Beard, <i>Industry Liaison Officer</i>		
2:00-3:00	SVT Private Session with Industry		
<i>Move to Min H. Kao Building</i>			
3:15-6:00	Lab Tour & Poster Session		
7:00–9:30	Student Awards Dinner (The Foundry)		
7:30-10:00	SVT Working Dinner and Discussion (Bistro at the Bijou)		

NSF-DOE SITE VISIT: DAY TWO
Thursday, November 16, 2017
Downtown Hilton, Knoxville, TN
All sessions – 60% presentation /40% Q&A

7:45-8:15	SVT/University Officials' Breakfast (Salons D & E)	Faculty breakfast (Sequoyah 3)
8:15-9:00	SVT/University Officials' Meeting (Salons D & E)	
9:00-9:45	Diversity and Culture of Inclusivity – Chien-Fei Chen, <i>Director of Education & Diversity</i> (Salons A, B & C)	
9:45-10:15	Infrastructure – Kevin Tomsovic, <i>Center Director</i>	
10:15-10:30	Break	
10:30-11:00	Sustainability Plan – Kevin Tomsovic; <i>Center Director</i>	
11:00-11:45	University Education – Daniel Costinett, <i>Co-Director of Education & Diversity</i>	
11:45- 1:00	SVT/SAB Private Lunch (Smoky)	General Group Lunch (Salons D & E)
1:00-1:30	SVT Executive Session (Sequoyah 1)	Student / Faculty Session (Salons A,B&C)
1:30-2:15	Pre-College Education Chien-Fei Chen, <i>Director of Education & Diversity</i>	
2:15-3:00	SVT/ Student Private Session (Salons A, B & C)	
3:00-3:15	Break	
3:15-4:15	SVT Executive Session (Sequoyah 1)	
4:15-4:45	SVT Question Presentation (Sequoyah 1)	
6:00-10:00	SVT Working Dinner and Discussion (Sequoyah 1)	

NSF-DOE SITE VISIT: DAY THREE

Friday, November 17, 2017

Downtown Hilton, Knoxville, TN

7:30-8:00	SVT Breakfast (Sequoyah 3)	Faculty Breakfast (Sequoyah 2)
8:00-9:00	Question Response Session (SVT and CURENT Faculty)(Sequoyah 3)	
9:00-5:00	SVT Report Writing (Sequoyah 1)	
5:00	SVT Departure (vans transport SVT to airport)	