

Sunday, September 14

7:00 am – 7:00 pm Registration..... Noresco Foyer

Tutorials Group 1 • 8:00 am – 12:00 pm

323	324	325	326	327	328
T1-1: Design Challenges of High-power Converters with Low Switching Frequencies	T1-2: Predictive Control — a Simple and Powerful Method to Control Power Converters and Drives	T1-3: The Technology and Market Issues of Magnetic Materials	T1-4: Electromechanical Power Loss Analysis in Design and Optimisation of Electrical Machines: Practical Aspects of Accurate Loss Estimation and Mitigation Techniques	T1-5: Power Semiconductor Modules: Design, Applications, Manufacturing & Reliability	T1-6: Electrification of Subsea Process Plants, Why and How

12:00 pm – 1:00 pm Lunch on Own

Tutorials Group 2 • 1:00 pm – 5:00 pm

323	324	325	326	327	328
T2-1: Feedback-loop Design Issues of DC-DC Converters in High-power Energy Harvesting Applications	T2-2: Design for Reliability of Power Electronic Systems	T2-3: Impedance-based Modeling and Analysis of 3-phase Grid-connected Converters	T2-4: GaN Transistors for Efficient Power Conversion	T2-5: The Rediscovery of Synchronous Reluctance and Ferrite PM Motors as Valid Competitors to Induction and Rare-earth PM Motors	T2-6: Soft Crystalline Magnetic Materials

4:00 pm – 5:00 pm Newcomers Session..... Room 335

5:00 pm – 7:00 pm Opening Reception..... 4th Floor North Terrace

Monday, September 15

7:00 am – 7:00 pm Registration..... Noresco Foyer

8:00 am – 10:00 am Plenary Session..... Spirit of Pittsburgh Ballroom A

10:00 am – 10:20 am AM Break..... Noresco Foyer

Oral Sessions • 10:20 am – 12:00 pm

323	324	325	326	327	328	329	330	333	334	335
S1: MPPT for Solar PV Systems	S2: Power Converters for Photovoltaic Applications	S3: Microgrid Control I	S4: Widebandgap Devices I	S5: Reliability and Diagnostics in Grid Converters	S6: Telecom Power Supplies	S7: Modulation for Power Converters	S8: Control and Modulation of Multi-level Converters I	S9: Assorted Issues in Electric Drives I	S10: Induction Machines	S11: Flux-switching Machines

12:00 pm – 1:00 pm Lunch on Own

Oral Sessions • 1:30 pm – 3:35 pm

323	324	325	326	327	328	329	330	333	335	334
S12: Power Converters for Transportation Applications I	S13: Control of Power Converters in Renewable Energy	S14: Utility-scale Battery Systems	S15: Widebandgap Devices II	S16: Modular Multi-level Converters for HVDC	S17: Control of 3-phase Converters	S18: AC-AC Converters	S19: Single-phase PFC Converters	S20: Diagnostics of Electric Machines	S21: Inductive Power Transfer I	SS1: US Government Power Electronics and Electric Motors Research for Electric Motors

4:00 pm – 6:30 pm Exhibit Hall Open..... Exhibit Hall C

4:00 pm – 6:30 pm Student Demonstrations..... Exhibit Hall C

4:00 pm – 6:30 pm Expo Reception *Supported by Ingersoll Rand*..... Exhibit Hall C

5:00 pm – 6:30 pm Poster Session I..... Exhibit Hall C

Tuesday, September 16

7:00 am – 6:00 pm Registration..... Noresco Foyer

Oral Sessions • 8:00 am – 9:40 am

323	324	325	326	328	329	330	333	334	335	336	327
S22: Wind Energy: Control and Operation I	S23: Power Converters for Smart Grid and Utility Applications	S24: Grid Stability	S25: Widebandgap Devices III	S26: Modular Multi-level Converters I	S27: Resonant Control in Power Converters	S28: Switched-capacitor Converters	S29: Voltage Control Issues in Electric Drives	S30: Synchronous Machines	S31: Inductive Power Transfer II	S32: Losses in Electrical Machines	SS2: Wide Band Gap (WBG) Power Switch Modules — Requirements and Challenges

9:00 am – 6:00 pm Exhibit Hall Open..... Exhibit Hall C

9:40 am – 10:00 am AM Break..... Exhibit Hall C

10:00 am – 11:30 am Poster Session II..... Exhibit Hall C

Town Hall Meetings • 10:00 am – 12:00 pm

329	330
Wide Band Gap Devices — Potentials versus Reality	Hybrid/Electric Vehicles — Today and Tomorrow

12:00 pm – 2:00 pm Lunch..... Exhibit Hall C

2:00 pm – 2:30 pm Powerex, Inc. Industrial Seminar..... Exhibit Hall Stage

2:30 pm – 3:00 pm Keysight Technologies Industrial Seminar..... Exhibit Hall Stage

3:00 pm – 3:30 pm Ford Motor Company Industrial Seminar..... Exhibit Hall Stage

3:30 pm – 5:00 pm Poster Session III..... Exhibit Hall C

5:00 pm – 5:30 pm Ingersoll Rand Industrial Seminar — *Announcement of Industry Student Game Winner*..... Exhibit Hall Stage

Tuesday, September 16 (Continued)

4:15 pm – 4:30 pm **PM Break** Exhibit Hall C

Wednesday, September 17

7:00 am – 7:00 pm **Registration** Noresco Foyer

Oral Sessions • 8:00 am – 9:40 am

323	324	326	327	328	329	330	333	334	335	336	325
S33: Solar PV Technologies	S34: Energy Management in Residential Applications	S35: DC-DC Boost Converters	S36: Stability and Quality I	S37: Modular Multi-level Converters II	S38: Control of DC-DC Converters	S39: Active Power Filters and Power Quality	S40: Fault Diagnostics in Power Converters	S41: Control Issues in Electric Drives II	S42: IPM Machine Design	S43: Induction Motor Drives I	SS3A: Harmonic Resonance in Renewable Energy Systems

9:40 am – 10:00 am **AM Break** Noresco Foyer

Oral Sessions • 10:00 am – 11:40 am

323	324	326	327	328	329	330	334	335	336	325	333
S44: LED Drivers I	S45: LCL Filters for Grid Converters	S46: DC-DC Buck Converters	S47: Stability and Quality II	S48: Control and Modulation of Multi-level Converters II	S49: Modeling and Control of DC-DC Converters	S50: Power Converters for Transportation Applications II	S51: Performance and Reliability Issues in Electric Drives	S52: Switched-reluctance Machines	S53: Induction Motor Drives II	SS3B: Harmonic Regulation and Mitigation	SS4: Optimization of Electric Motors and Multi-physics Analysis

11:40 am – 1:30 pm **Lunch on Own**

Oral Sessions • 1:30 pm – 3:10 pm

323	324	325	326	327	328	329	330	333	334	335	336
S54: Wave and Wind Generation Systems	S55: Power Converters for Smart Grid and Utility Applications II	S56: Microgrid Control II	S57: Battery Models	S58: Grid Emulation	S59: Device Temperature Estimation	S60: Resonant DC-DC Converters I	S61: AC-DC Multi-phase Converters	S62: Control of Power Converters I	S63: Sensorless Control: HF Injection	S64: IPM Analysis	S65: Magnetic Materials

3:10 pm – 3:30 pm **PM Break** Noresco Foyer

Oral Sessions • 3:30 pm – 5:10 pm

323	324	325	326	327	328	329	330	333	334	335	336
S66: Utility Interactive Solar PV System	S67: Power Converters for Renewable Energy Applications	S68: Microgrid Control III	S69: Battery Energy Management	S70: Other Power Electronics Topics for Grid Applications	S71: Power Electronic Modules I (high T and SiC)	S72: Multi-level DC-DC Converters	S73: DC-AC Converters	S74: Control of Power Converters II	S75: Sensorless Control II	S76: IPM Machines for Automotive Applications	S77: Solid State Transformers

7:00 pm – 9:00 pm **ECCE Banquet** Spirit of Pittsburgh Ballroom AB

Thursday, September 18

7:00 am – 3:00 pm **Registration** Noresco Foyer

Oral Sessions • 8:00 am – 9:40 am

323	324	325	326	327	328	329	330	333	334	335	336
S78: Energy Storage Systems	S79: Power Converters for Wind Energy Applications	S80: Microgrid Modeling	S81: Cascaded Converters for Grid Applications	S82: Power Electronic Modules II	S83: Multi-level Converters	S84: Resonant DC-DC Converters II	S85: EMI and Power Converters	S86: Electric Vehicle Technologies	S87: Asymmetry and Forces in Electric Machines	S88: Permanent Magnet Machine Drives I	S89: Non-conventional Electric Machines

9:40 am – 10:00 am **AM Break** Noresco Foyer

Oral Sessions • 10:00 am – 11:40 am

323	324	325	326	327	328	329	330	333	334	335	336
S90: Wind Energy: Control and Operation II	S91: Voltage Control Issues in Renewable Energy Applications	S92: Grid Devices	S93: Power Converters for Grid Applications	S94: Control of Power Converters based on Physical and Virtual Models	S95: DC-AC Multi-phase Converters	S96: Soft-switching Bridge DC-DC Converters	S97: Flux and Direct Torque Control	S98: Synchronous Reluctance Machines	S99: Modeling of Electric Machines	S100: Permanent Magnet Machine Drives II	S101: Magnetic Materials and Design

11:50 am – 1:20 pm **Awards Lunch** Spirit of Pittsburgh Ballroom AB

Oral Sessions • 1:30 pm – 3:10 pm

323	324	325	326	327	328	329	330	333	334	335	336
S102: LED Drivers II	S103: DC-DC Converters for Renewable Energy Applications	S104: Smart Grid Technologies I	S105: HVDC Systems	S106: Dual Active Bridge DC-DC Converters	S107: Multi-level Converter Topologies I	S108: Low-power Resonant Converters	S109: Modulation for Power Converters II	S110: Power Electronics Reliability Assessment	S111: High Power Drives	S112: High Speed Electric Machines	S113: Manufacturing Issues of Electric Machines

3:10 pm – 3:30 pm **PM Break** Noresco Foyer

Oral Sessions • 3:30 pm – 5:10 pm

323	324	325	326	327	328	329	330	333	334	335	336
S114: Converters for Solar PV Systems	S115: Stability Analysis and Power Quality	S116: Smart Grid Technologies II	S117: DC Grids	S118: Gate Drive Techniques	S119: Multi-level Converter Topologies II	S120: DC-DC Converter Applications	S121: Control of Power Converters III	S122: Energy-efficient Motor Drives	S123: Wound-field Machines	S124: Axial-flux Machines	S125: Traction and Heavy-duty Vehicle Systems