

# Draft: Subject to Change

Thursday, June 13, Oral Presentations

Time	Advanced Combustion Engines (ACE)	Fuel and Lubricant Technologies (FT)	
7:00AM	<b>Continental Breakfast</b>		
8:00 AM			
8:15 AM			
8:30 AM	ACE001: Heavy-Duty Diesel Combustion Mark Musculus, SNL		
8:45 AM			
9:00 AM	ACE131: Ducted Fuel Injection (DFI) for Heavy-Duty Engines Charles Mueller, SNL		
9:15 AM			
9:30 AM	ACE132: Heavy-Duty Gasoline Compression Ignition Chris Kolodziej, ANL		
9:45 AM			
10:00 AM	ACE133: Next-Generation Heavy-Duty Powertrains Scott Curran, ORNL		FT079: Expanding the Knock/Emissions/Misfire Limits for the Realization of Ultra-Low Emissions, High-Efficiency, Heavy-Duty Natural Gas Engines Dan Olsen, Colorado State University
10:15 AM			
10:30 AM	<b>Break</b>		
11:00 AM	ACE121: A High Specific Output, Gasoline, Low-Temperature Combustion Engine Hanho Yun, General Motors	FT086: On-Demand Reactivity Enhancement to Enable Low-Temperature Combustion of Natural Gas Will Northrop, University of Minnesota	
11:15 AM			
11:30 AM	ACE123: Temperature-Following Thermal Barrier Coatings for High-Efficiency Engines Tobias Schaedler, HRL Laboratories	FT080: Fundamental Advancements in Pre-Chamber Ignition and Emissions Control for Natural Gas Engines Brad Zigler, NREL	
11:45 AM			
12:00 PM		FT081: Direct Injection 4.3 L Propane Engine Research, Development, and Testing Brad Zigler, NREL	
12:15 PM			

<b>12:30 PM</b>	<b>Lunch</b>	
<b>2:00 PM</b>	<p>ACE100: Improving Transportation Efficiency through Integrated Vehicle, Engine, and Powertrain Research - SuperTruck II Justin Yee, Daimler Trucks North America</p>	<p>FT082: High-Performance Fluids and Coatings for Off-Road Hydraulic Components George Fenske, ANL</p>
<b>2:15 PM</b>		
<b>2:30 PM</b>	<p>ACE101: Volvo SuperTruck II: Pathway to Cost-Effective Commercialized Freight Efficiency Pascal Amar, Volvo Trucks North America</p>	<p>FT083: Efficient, Compact, and Smooth Variable Propulsion Motor James Van de Ven, University of Minnesota</p>
<b>2:45 PM</b>		
<b>3:00 PM</b>	<p>ACE102: Cummins-Peterbilt SuperTruck II Michael Ruth, Cummins-Peterbilt</p>	<p>FT084: Individual Electro-Hydraulic Drives for Off-Road Vehicles Andrea Vacca, Purdue University</p>
<b>3:15 PM</b>		
<b>3:30 PM</b>	<b>Break</b>	
<b>4:00 PM</b>	<p>ACE103: Development and Demonstration of a Fuel-Efficient Class 8 Tractor and Trailer SuperTruck Russell Zukouski, Navistar</p>	<p>FT085: Hybrid Hydraulic-Electric Architecture for Mobile Machines Perry Li, University of Minnesota</p>
<b>4:15 PM</b>		
<b>4:30 PM</b>	<p>ACE124: SuperTruck II - PACCAR Carl Hergart, PACCAR</p>	
<b>4:45 PM</b>		
<b>5:00 PM</b>		
<b>5:15 PM</b>		
<b>5:30</b>		

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Electrification Technologies (ELT)	Materials Technology (MAT)
<b>Continental Breakfast</b>	
<p>ELT198: Cybersecurity: Securing Vehicle Charging Infrastructure - SNL Jay Johnson, SNL</p>	<p>MAT157: Graphene-Based Solid Lubricant for Automotive Applications Anirudha Sumant, ANL</p>
<p>ELT199: Cybersecurity: Consequence-Driven Cybersecurity for High-Power Charging Infrastructure -INL Richard "Barney" Carlson, INL</p>	<p>MAT126: Room-Temperature Stamping of High-Strength Aluminum Alloys Aashish Rohatgi, PNNL</p>
<p>ELT205: Cybersecurity for Grid Connected eXtreme Fast Charging (XFC) Station (CyberX) Junho Hong, ABB</p>	<p>MAT158: Overcoming the Barriers to Lightweighting by Enabling Low-Cost and High-Performance Structural Automotive Aluminum Castings Aashish Rohatgi, PNNL</p>
<p>ELT206: Cybersecurity Platform and Certification Framework Development for XFC-Integrated Charging Infrastructure Ecosystem Tobias Whitney, EPRI</p>	<p>MAT129: Optimizing Heat-Treatment Parameters for 3rd Generation Advanced High-Strength Steel Using an Integrated Experimental Computational Framework Erin Baker, PNNL</p>
<p>ELT207: Enabling Secure and Resilient XFC: A Software/Hardware Security Co-Design Approach Ryan Gerdes, Virginia Tech</p>	<p>MAT144: Reducing Mass of Steel Auto Bodies Using Thin, Advanced High-Strength Steel with Carbon-Fiber Reinforced Epoxy Coating Dave Warren, ORNL, Gabriel Ilevbare, INL,</p>
<b>Break</b>	
<p>ELT197: High Power and Dynamic Wireless Charging of Electric Vehicles(Evs) Veda Galigeke, ORNL</p>	<p>MAT069: Lightweight High-Temperature Alloys Based on the Aluminum-Iron-Silicon System Michelle Manuel, University of Florida</p>
<p>ELT235: Behind-the-Meter Storage Overview Anthony Burrell, NREL</p>	<p>MAT159: Powertrain Core Program: High-Temperature Lightweight Alloys--Aluminum-/Titanium-Based Alloys Amit Shyam, ORNL</p>
<p>ELT204: Charging Infrastructure Technologies: Development of a Multiport, ≥1 MW Charging System for Medium- and Heavy-Duty Electric Vehicles - NREL Kevin Walkowicz, Representing NREL, ORNL, ANL</p>	<p>MAT160: Powertrain Core Program: Higher Temperature (&gt;550°C) Alloys--Nickel-/Iron-Based Alloys G. Muralidharan, ORNL</p>

Lunch	
ELT239: High-Power Inductive Charging System Development and Integration for Mobility Omer Onar, ORNL	MAT161: Powertrain Core Program: Overview of Exploratory Projects Jerry Gibbs, DOE
	MAT162: Machine Learning and Supercomputing to Predict Corrosion/Oxidation of High-Performance Valve Alloys Dongwon Shin, ORNL
ELT240: Wireless Extreme Fast Charging for Electric Trucks (WXFC-Trucks) Mike Masquelier, WAVE	MAT163: Multi-Scale Modeling of Corrosion and Oxidation Performance and Their Impact on High-Temperature Fatigue of Automotive Exhaust Manifold Components Mei Li, Ford
	MAT164: Multi-Scale Development and Validation of the Stainless Steel Alloy Corrosion (SStAC) Tool for High-Temperature Engine Materials Michael Tonks, University of Florida
ELT241: High-Efficiency, Medium-Voltage-Input, Solid-State-Transformer-Based 400-kW/1000-V/400-A Extreme Fast Charger for Electric Vehicles Charles Zhu, Delta Electronics	MAT057: Applied Computational Methods for New Propulsion Materials Charles Finney, ORNL
Break	
ELT236: DC Conversion Equipment Connected to the Medium-Voltage Grid for Extreme Fast Charging (XFS) Utilizing Modular and Interoperable Architecture Watson Collins, EPRI	
ELT237: Enabling Extreme Fast Charging with Energy Storage Jonathan Kimball, Missouri S&T	
ELT238: Intelligent, Grid-Friendly, Modular Extreme Fast Charging System with Solid-State DC Protection Srdjan Lukic, North Carolina State University	
Panel Discussion: Medium-Voltage Extreme Fast Charging Technologies	
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**Battery R&D (BAT)**

**Energy-Efficient Mobility Systems (EEMS)**

## Continental Breakfast

BAT276: Mechanical Properties at the Protected Lithium Interface  
Nancy Dudney, ORNL

BAT327: Engineering Approaches to Dendrite-Free Lithium Anodes  
Prashant Kumta, University of Pittsburgh

BAT326: Self-Assembling and Self-Healing Rechargeable Lithium Batteries  
Yet-Ming Chiang, MIT

BAT272: Pre-Lithiation of High-Capacity Battery Electrodes  
Yi Cui, SLAC

Panel Discussion: Lithium Metal Protection

BAT330: Electrochemically Responsive, Self-Formed, Lithium-Ion Conductors  
for High-Performance Lithium-Metal Anodes  
Donghai Wang, Penn State University

BAT230: Nanostructured Design of Sulfur Cathode for High-Energy Lithium-  
Sulfur Batteries  
Yi Cui, Stanford University

Panel Discussion: Sulfur Electrodes

EEMS029: Boosting Energy Efficiency of Heterogeneous Connected and  
Automated Vehicle (CAV) Fleets via Anticipative and Cooperative Vehicle  
Guidance  
Ardalan Vahidi, Clemson University

EEMS032: Evaluating Energy-Efficiency Opportunities from Connected and  
Automated Vehicle (CAV) Deployments Coupled with Shared Mobility in  
California  
Matthew Barth, University of California at Riverside

EEMS028: Developing an Eco-Cooperative Automated Control System (Eco-  
CAC)  
Hesham Rakha, Virginia Tech

## Break

BAT312: Advanced Lithium-Ion Battery Technology: High-Voltage Electrolyte  
Joe Sunstrom, Daikin America

BAT322: High Conductivity and Flexible Hybrid Solid-State Electrolyte  
Eric Wachsman, University of Maryland

BAT365: Stabilizing Lithium-Metal Anode by Interfacial Layer  
Zhenan Bao, Stanford University/SLAC

BAT389: Improving the Stability of Lithium Metal Anodes and Inorganic-  
Organic Solid Electrolytes  
Nitash Balsara, LBNL

Panel Discussion: Electrolytes

**Lunch**

BAT054: First Principles Calculations of Existing and Novel Electrode Materials  
Gerbrand Ceder, LBNL

BAT309: Electrode Materials Design and Failure Prediction  
Venkat Srinivasan, ANL

BAT329: Understanding and Strategies for Controlled Interfacial Phenomena in  
Lithium-Ion Batteries and Beyond  
Perla Balbuena, Texas A&M University

BAT091: Predicting and Understanding Novel Electrode Materials from First  
Principles  
Kristin Persson, LBNL

Panel Discussion: Modeling

**Break**

BAT370: Advanced Diagnostics of Nickel-Rich, Layered-Oxide Secondary  
Particles  
William Chueh, Stanford University/SLAC

BAT225: Model System Diagnostics for High-Energy Cathode Development  
Guoying Chen, LBNL

BAT085: Interfacial Processes  
Robert Kostecki, LBNL

BAT226: Microscopy Investigation of the Fading Mechanism of Electrode  
Materials  
Chongmin Wang, PNNL

Panel Discussion: Diagnostics

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## Vehicle Technologies Analysis (VAN)

### Continental Breakfast

VAN000: Overview of VTO Analysis Program  
Jacob Ward, DOE

VAN026: Infrastructure Assessment  
Eric Wood, NREL

VAN028: VTO Program Benefits Analysis  
Alan Jenn, UC Davis

VAN019: ParaChoice Model  
Camron Proctor, SNL

VAN021: Transportation Energy Evolution Modeling (TEEM) Program  
Zhenhong Lin, ORNL

### Break

VAN023: Assessing the Energy and Cost Impact of Advanced Technologies of  
Light-Duty Vehicles  
Aymeric Rousseau, ANL

VAN029: Battery Recycling Supply Chain Analysis  
Margaret Mann, NREL

VAN031: Advanced Vehicle Cost and Energy-Use Model (AVCEM) - Overview,  
Recent Developments, and Preliminary Findings  
Mark Delucchi, LBNL

Lunch

Break