2025 Vehicle Technologies Office Annual Merit Review
Materials Technology R&D - Composites (MAT) Oral Presentations Detailed Schedule

Tuesday, June 3, 2025	
8:45 AM	**MAT926:** Polymer Composites Portfolio Overview, Felix Wu, Vehicle Technologies Office, DOE
9:00 AM 9:15 AM	**MAT197:** Multi-Functional Smart Structures for Smart Vehicles, Patrick Blanchard, Ford Motor Company
9:30 AM 9:45 AM	**MAT198:** Development of Tailored Fiber Placement, Multi-Functional, High-Performance Composite Material Systems for High Volume Manufacture of Structural Battery Enclosure, Venkat Aitharaju, General Motors Company
10:00 AM 10:15 AM	**MAT265:** Low-Cost Multifunctional Composites from Recycled Materials for Lighter and Smarter Vehicles, Xiaodong Li, University of Virginia
10:30 AM 10:45 AM	**MAT266:** Development and Manufacturing of Multifunctional Energy Storage Composites (MESC) for Automotive Vehicles, Amrita Kumar, Acellent Technologies, Inc
11:00 PM 11:15 PM	**MAT286:** CCP 2.0, Thrust 2.1 - Spatio-temporal Damage Characterization of Multifunctional Composites; Christopher Bowland, Oak Ridge National Laboratory
11:30 PM	**Time Buffer**
11:40 PM	**Lunch Break**
1:10 PM	**MAT281:** Materials and Manufacturing Innovation for Sustainable Automotive Composites: Thrust 2 - Multi-functional Materials and Structures (Overview), Christopher Bowland and Seokpum Kim, Oak Ridge National Laboratory
1:25 PM	**MAT287:** CCP 2.0, Thrust 2.2 - Advanced Discontinuous-Continuous Carbon Composites with Embedded Electronics in High Rate Processes; Uday Vaidya, University of Tennessee at Knoxville
1:40 PM 1:55 PM	**MAT288:** CCP 2.0 Thrust 2.3 - Lightweight Multi-functional Materials for Self-sensing, Powering and Actuation; Seokpum Kim, Oak Ridge National Laboratory
2:10 PM 2:25 PM	**MAT289:** CCP 2.0 Thrust 2.4 - Data-driven Lightweight Multifunctional Composite Design for Improved Thermal Management and Energy Harvesting; Sumit Gupta, Oak Ridge National Laboratory
2:40 PM 2:55 PM	**MAT290:** CCP 2.0, Thrust 1.2 - Next generation carbon fibers for vehicles from waste polyolefins via selective C-H functionalization; Logan Kearney, Oak Ridge National Laboratory
3:10 PM	**Time Buffer**
3:15 PM	**Break**
3:45 PM	**MAT280:** Materials and Manufacturing Innovation for Sustainable Automotive Composites: Thrust 1 - Innovative Low-Cost Carbon Fiber and Alternative Fiber Technologies (Overview) , Amit Naskar and Felix Paulauskas, Oak Ridge National Laboratory
4:00 PM	**MAT291:** CCP 2.0, Thrust 1.4 - High-molecular Weight Polyethylene Fibers for Self-reinforced Composites; Amit Naskar, Oak Ridge National Laboratory
4:15 PM 4:30 PM	**MAT292:** CCP 2.0, Thrust 1.3 - A Viable Route from Acrylic Textiles to Low Cost Carbon Fiber; Felix Paulauskas, Oak Ridge National Laboratory
4:45 PM 5:00 PM	**MAT293:** CCP 2.0, Thrust 1.5 - High-performance Polymer-Fiber-Reinforced Polymer Composites (PFRPs); Yao Qiao, Pacific Northwest National Laboratory
5:15 PM	**Day 1 Ends**

Wednesday, June 4, 2025	
9:00 AM 9:15 AM	**MAT310:** Zero-Emission Natural Fiber Composites (ZENC) for Fire-Detecting Fireproof EV Battery Enclosure; Maria Feng, Columbia University
9:30 AM 9:45 AM	**MAT311:** Transforming Carbon Fiber-Reinforced Polymer Wastes into Recyclable Structural Automotive Components; Jinwen Zhang, Washington State University
10:00 AM 10:15 AM	**MAT312:** Cost-effective Circular Manufacturing of Lightweight Vehicle Shells and Battery casing by Recyclable-by-Design Polymer Composites; Chen Wang, University of Utah
10:30 AM 10:45 AM	**MAT313:** Sustainable Circular Manufacturing of Automotive Composites; Jay Keasling, University of California at Berkeley
11:00 PM	**MAT282:** Materials and Manufacturing Innovation for Sustainable Automotive Composites: Thrust 3 - Circularity and Sustainability of Polymer Composites (Overview), Nicholas Rorrer and Caitlyn National Renewable Energy Laboratory and Oak Ridge National Laboratory
11:15 PM	**MAT314:** CCP 2.0 Thrust 3.1 - Waste Plastics to High Value Polymers; Daniel Merkel, Pacific Northwest National Laboratory
11:30 PM	**Time Buffer**
11:40 PM	**Lunch Break**
1:10 PM 1:25 PM	**MAT315:** CCP 2.0 Thrust 3.2 - Circular Economy for Unwanted Shredded Automotive Waste (CE-SAW); Caitlyn Clarkson, Oak Ridge National Laboratory
1:40 PM 1:55 PM	**MAT316:** CCP 2.0 Thrust 3.3 - Materials and Manufacturing Innovation for Sustainable Automotive Composites – Bioderivable and Recyclable Composites; Nicholas Rorrer, National Renewable Energy Laboratory
2:10 PM 2:25 PM	**MAT317:** CCP 2.0 Thrust 3.4 - High Throughput Recycling of Long CF from Cured Thermoset Composites; Wenbin Kuang, Pacific Northwest National Laboratory
2:40 PM	**MAT283:** Materials and Manufacturing Innovation for Sustainable Automotive Composites: Thrust 4 - Polymeric Materials and Their Composites in Additive Manufacturing (Overview), Logan Kearney and Vipin Kumar, Oak Ridge National Laboratory
2:55 PM	**MAT318:** CCP 2.0 Thrust 4.3 - Recyclable Cellulose Fiber Reinforced Vitrimer Composites; Amit Naskar, Oak Ridge National Laboratory
3:10 PM	**Time Buffer**
3:15 PM	**Break**
3:45 PM 4:00 PM	**MAT319:** CCP 2.0 Thrust 4.1 - Precise High-Speed Manufacturing of Thermoplastic composites Using Additive - Compression Molding (AM-CM); Vipin Kumar, Oak Ridge National Laboratory
4:15 PM 4:30 PM	**MAT320:** CCP 2.0 Thrust 4.2 - Designing and Manufacturing Adaptable Large-scale Hierarchical Materials with Tailorable Toughness; Amit Naskar, Oak Ridge National Laboratory
4:45 PM 5:00 PM	**MAT321:** CCP 2.0 Thrust 4.5 - Bio-inspired High-Performance 3D Printed Carbon Composite with Sensing: Surface modification and AI/ML Approaches; Rigoberto Advincula, Oak Ridge National Laboratory
5:15 PM	**Day 2 Ends**

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Materials Technology R&D – Joining, Metals, Propulsion Materials (MAT) Oral Presentations Detailed Schedule

Tuesday, June 3, 2025	
9:00 AM	**MAT159:** Cost Effective Lightweight Alloys for Electric Vehicle Propulsion: Fundimental Fatigue and Creep in Advanced Lightweight Alloys, Amit Shyam, Oak Ridge National Laboratory
9:15 AM	
9:30 AM	**MAT322:** Printable Creep-Resistant Lightweight Conductors, Alex Plotskowki, ORNL
9:45 AM	
10:00 AM	**MAT242:** Advanced Processing and Additive Manufacturing for EV Propulsion: Novel Ultra High Conductivity Composites for EVs, Tolga Aytug, Oak Ridge National Laboratory
10:15 AM	
10:30 AM	**MAT294:** Bulk-Scale Ultra-Condoctors via Low-C Manufacturing pathways, Keerti Kappagantula , Pacific Northwest National Laboratory
10:45 AM	
11:00 PM	**MAT295:** High Resistivity Fe6SI-X Rolled Steels for Soft Magnetic Cores: Govindarajan Muralidharan, Oak Ridge National Laboratory
11:15 PM	
11:30 PM	
11:40 PM	
1:10 PM	**MAT241:** Advanced Processing and Additive Manufacturing for EV Propulsion: Advanced Ceramics and Processing for Wireless Charging Systems, Beth Armstrong, Oak Ridge National Laboratory
1:25 PM	
1:40 PM	**MAT237:** Materials, Lubricants, and Cooling for Heavy Duty Electric Vehicles, Jun Qu, Oak Ridge National Laboratory
1:55 PM	
2:10 PM	**MAT296:** Near Net Shape High Strength SMCs for Axial Flux Motors: Vineet V. Joshi, Pacific Northwest National Laboratory and Oak Ridge National Laboratory
2:25 PM	
2:40 PM	**MAT297:** Opportunities to support Decarbonization, Rishi Pillal, Oak Ridge National Laboratory
2:55 PM	
3:10 PM	**Time Buffer**
3:15 PM	**Break**
3:45 PM	**MAT236:** Advanced Characterization and Computational Methods, Thomas Watkins, Oak Ridge National Laboratory
4:00 PM	
4:15 PM	**MAT298:** LMCP 2.0 Thrust 1A Flaw Mitigation and Repair in Ultra Large Castings Composed of High Secondary Alloy Content, Saumyadeep Jana & Piyush Upadhayay , Pacific Northwest National Laboratory
4:30 PM	
4:45 PM	**MAT299:** LMCP 2.0 Thrust 1B Post Processing of Castings for Energy Absorption in Crash, Piyush Upadhayay, Pacific Northwest National Laboratory
5:00 PM	
5:15 PM	**Day 1 Ends**

Thursday, June 5, 2025	
9:00 AM	**MAT300:** LMCP 2.0 Thrust 1C Enhancing Mechanical Performance of HPDC Al Castings by In-situ Ultrasonic Processing, Aashish Rohatgi, Pacific Northwest National Laboratory
9:15 AM	
9:30 AM	**MAT301:** LMCP 2.0 Thrust 1D-24 Mechanical Behavior of HPDC Al Alloys with High Secondary Content, Sumit Bahl, Oak Ridge National Laboratory
9:45 AM	
10:00 AM	**MAT302:** LMCP 2.0 Thrust 2A-24: Design of Sustainable Lightweight Cast Alloys for HPDC, Amit Shyam, Oak Ridge National Laboratory
10:15 AM	
10:30 AM	**MAT303:** LMCP 2.0 Thrust 2B-24: Optimization of T5 heat treatments in diecast alloys, Dongwon Shin, Oak Ridge National Laboratory
10:45 AM	
11:00 PM	**MAT304:** LMCP 2.0 Thrust 2C-24. Fundamentals of Solidification for LW Alloys with High Secondary Content, Ying Yang, Oak Ridge National Laboratory
11:15 PM	
11:30 PM	**Time Buffer**
11:40 PM	**Lunch Break**
1:10 PM	**MAT305:** LMCP 2.0 Thrust 2E-24: Upcycling of Secondary LW Alloys using Additive Manufacturing, Jovid Rakhmonov, Oak Ridge National Laboratory
1:25 PM	
1:40 PM	**MAT306:** LMCP 2.0 Thrust 3A-A. Thermo-Mechanical Processing Techniques to Enable a Versatile and Recyclable 6xxx Unialloy, Mert Efe, Pacific Northwest National Laboratory
1:55 PM	
2:10 PM	
2:25 PM	
2:40 PM	**MAT308:** LMCP 2.0 Thrust 3B Solid Phase Processing of Mg Alloys for Improved Performance, Mageshwari Komarasamy, Pacific Northwest National Laboratory
2:55 PM	
3:10 PM	**Time Buffer**
3:15 PM	**Break**
3:45 PM	**MAT309:** LMCP 2.0 Thrust 4A-24: Scalable Surface Alloyed Coatings on Magnesium High Pressure Die Casting Parts, Vineet V. Joshi, Pacific Northwest National Laboratory
4:00 PM	
4:15 PM	**MAT341:** LMCP 2.0 Thrust 2F Sustainable Aluminum Castings as Feedstocks for Wrought Processing Scott Whalen, Pacific Northwest National Laboratory
4:30 PM	
4:45 PM	**MAT342:** LMCP 2.0 Task 5B Residual Stress Effects and Local to Global Property Prediction in Hybrid Property Assemblies Ayoub Soulami, Pacific Northwest National Laboratory
5:00 PM	**AMR Ends**