U.S. Department of ENERGY | Office of Energy Efficiency & Renewable Energy

AMMTO Stakeholder Listening Event

POSTER SHOW & NETWORKING RECEPTION, *SALON D & E*

Energy Technology Manufacturing & Workforce

Battery Manufacturing and Energy Storage

1. Forge Nano, Inc.; *Reducing the Cost and Energy of Lithium-ion Battery Manufacturing using High Throughput Atomic Layer Deposition Processes*

2. ORNL; *From materials to cells: streamlining battery manufacturing*

3. NREL; *High throughput laser processing and acoustic diagnostics for enhanced battery performance and manufacturing*

4. ANL; *Advanced Brine Processing to Enable U.S. Lithium Independence*

5. ORNL; *Reducing the Cost and Energy of Lithium-ion Battery Manufacturing using High Throughput Atomic Layer Deposition Processes*

6. ANL; *Lithium recovery from Process Water*

7. ANL and Sylvatex; *Advanced Manufacturing of Cathode Materials for Lithium-ion Battery*

8. PNNL; *An Innovative Drop-in Approach for Single Crystal Ni-rich Cathode Materials Manufacturing*

9. NREL; *Upcycling for Remanufacturability: Morphological Engineering of Graphite for High-Rate Performance*

10. Largo Clean Energy; *Innovative Manufacturing Processes to Enable Flow Batteries with Unmatched Capital Costs*

11. PNNL and TreadStone Technologies, Inc.; *R2R Manufacturing of Metallic Electrode and Bipolar Plates for Flow Batteries*

12. ANL; *Hydrothermal Production of Single Crystal Ni-rich Cathodes with Extreme Rate Capability*

13. ORNL; *High-Energy and High-Power NMP-Free, Designer NMC 811 Cathodes with Ultra-Thick Architectures Processed by Electrophoretic Deposition*

14. ANL; *Low-Carbon Electrified Aerosol Manufacturing of Advanced Concentration-Gradient Cathode Materials*

15. Available

Entrepreneurial Ecosystems

16. ANL, LBNL, NREL, ORNL; Lab Embedded Entrepreneurship Program (LEEP): Nodes

17. ANL, LBNL, NREL, ORNL; Lab Embedded Entrepreneurship Program (LEEP): Innovator Successes

18. PNNL; AMMTO Project Technology Impacts Tracking

Semiconductors, Power Electronics

19. North Carolina State University; *Power America*

20. NREL; *Grid Application Development, Testbed, and Analysis for Medium-Voltage Silicon Carbide*

Semiconductors, Microelectronics & Other Technologies

21. PseudolithIC; *THz Heterogeneous Integration for Next Generation Communications (THINC)*

22. Alphacore; *In-Sensor Analog Neural Network Framework for Analog to Information Conversion*

23. *Carbon Technology, Inc.* CTI; *Atomic Precision Manufacturing for CNTFETS for 10X EES2 (Carbon Technology, Inc.)*

24. Zyvex Labs; *A Platform Technology for High-throughput Atomically Precise Manufacturing: Mechatronics at the Atomic Scale*

25. ANL; *Microelectronic Devices Enabled by Atomic Layer Deposition for Ultra-low Power Architectures*

26. Available

27. SNL; *Band-to-band Epitaxial Area tunneling Transistors (BEATS)*

28. SLAC; *Roadmap Support for Energy Efficiency Scaling for 2 Decades (EES2) for Microelectronics*

Readahead Materials

Secure & Sustainable Materials

Circular Economy

29. Iowa State University; *Modular Catalytic Reactors for Single-Use Polyolefin Conversion to Lubricating Oils from Upcycled Plastic (LOUPs)*

30. Iowa State University of Science and Technology; *A closed loop upcycling of single-use plastic films to biodegradable polymers*

31. Univ. of Mass. Lowell; *Integrated Chemolytic Delamination and Plasma Carbonization for the Upcycling of Single-Use Multi-layer Plastic Films*

32. Case Western Reserve University; *Hybrid Chemical-Mechanical Separation and Upcycling of Mixed Plastic Waste*

33. LanzaTech Inc.; *Upscaling of non-recyclable plastic waste into CarbonSmartTM monomers*

34. Llink Technologies, LLC; *Remanufactured Headlights: Illuminating the Path*

35. Michigan State University; *All-Polyester Multilayer Plastics (All-Polyester MLP): A Redesign for Inherently Recyclable Plastics*

36. University of Delaware - Center for Composite Materials; *Circular Economy of Composites enabled by TUFF Technology*

37. NREL; *Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment (BOTTLE)*

38. Available

39. Sustainable Manufacturing Innovation Alliance Corp; *Clean Energy manufacturing Innovation Institute for Reducing EMbodied-energy And Decreasing Emissions (REMADE) in Materials Manufacturing*

40. AMES; *Infrastructure for Midwest Regional E-waste Circularity (IMREC)*

41. Regents of the University of Michigan; *A Midwest Circular Economy in Automotive Extrusions through Innovations in Alloy Design for Recycling and Low-Energy Scrap Processing*

42. INL; *TCF project on cellulose insulation*

Secure & Sustainable Materials

Critical Materials

43. AMES; *Critical Materials Hub - Overview*

44. Critical Materials Innovation Hub: CMI: *Enhancing and Diversifying Supply*

45. Critical Materials Innovation Hub; *CMI – Developing Substitutes*

46. Critical Materials Innovation Hub; *CMI – Building a Circular Economy*

47. Critical Materials Innovation Hub; *CMI – Crosscutting Research*

48. General Atomics; *Rare Earth Element (REE) Separation And Processing Demonstration Project*

49. American Battery Technology Company; *Field Demonstration of Selective Leaching, Targeted Purification, and Electro-Chemical Production of Battery Grade Lithium Hydroxide Precursor from Domestic Claystone Resources*

50. Available

51. New Mexico Institute of Mining and Technology; *Development of a highly efficient and novel distillation-assisted membrane for direct lithium extraction from geothermal brines*

52. TdVib LLC; *Value Recovery of Rare Earth and Other Critical Elements from EV sources*

53. Technology Holding LLC; *Novel Method for Rare Earths Recovery*

54. 525 Solutions, Inc.; *Ultra-High Capacity Adsorbent Nanofibrous Mats for the Recovery of Lithium from Seawater, Geothermal Brines, and Beyond*

55. LBL; *Technology for the Domestic Lithium Supply-Chain*

56. LLNL; *Continuous Electrosynthesis of Lithium Minerals from Geothermal Brines with a Flow-Electrochemical Reactor*

57. NREL; *Advanced Mineral Separations with Novel Simulated Moving Beds*

Next Generation Materials & Manufacturing

High Performance Materials (HPM)

58. TS Conductor Corporation; *Long Term High Ampacity Performance Validation and Concept Demonstration of Encapsulated Smart Composite Conductor*

59. PNNL; *Aluminum Ultra-Conductors for Energy-Efficient Aerospace Busbar Applications*

60. ANL; *Metal-MXene Composites with Increased Conductivity,Tensile Strength, and Corrosion Resistance*

61. Solar Synergies INC; *Multi-Gigawatt Electric Highway*

62. Available

63. DexMat, Inc; *Lightweight, High-Conductivity CNT Core Conductor for Power Transmission Lines*

64. AMES; *Restringing America: Efficient Sharing of Renewable Energy*

Harsh Environmental Materials

65. Edison Welding Institute, Inc.; *Edison Welding Institute (EWI)In-Process Monitoring for Reduced EB-DED NDT Costs*

66. Notre Dame University; *Optimizing Additive Manufacturing of Thermoelectric Materials using Bayesian Optimization-Enhanced Transfer Learning*

67. University of Southern California; *H2 Gas Turbine Thermal Barrier Coating Durability and Process Enhancement with Revolutionary Probabilistic Machine Learning (H2ThERMaL)*

68. University of North Texas; *Solid-State Additive Manufacturing of Durable Aluminum-Cerium Alloys for High-Temperature Aerospace Structural Applications*

69. General Atomics; *Efficient Silicon Carbide (SiC) Fiber Manufacture: Continuous Processing of Novel Precursors via Modified Material Handling*

Near Net Shape

70. GE Research; *Development of Advanced Casting Cell and Digital Foundry to Enable Cost Effective Domestic Manufacturing of Large Clean Energy Castings*

71. ORNL-MDF; *Rapid Runners: Net Shape Multi-Agent Robotic Hybrid Additive Manufacturing for Large-Scale Metal*

Composite Materials

72. Ford Motor Company; *Multi-Functional Smart Structures for Smart Vehicles*

73. ORNL - MDF; *Advanced Materials: Industry Insights from AMMTO Study of Hydrogen, Wind, Automotive, and Sustainable Composites*

74. ORNL - MDF; *Carbon Fiber Test Facility (CTFC)*

75. IACMI; *IACMI Workforce: Revitalizing American Manufacturing*

76. IACMI; *IACMI's Impact 2015-2025: A Decade of Innovation*

Advanced Manufacturing Processes & Systems (AMPS), High Performance Computing

77. LLNL; *High Performance Computing for Industry (HPC4Mfg)*

AMPS, Smart Manufacturing & Cybersecurity

78. Manufacturing USA Institute; *CESMII: Impacting Energy and Operational Performance Through Smart Manufacturing Technology, Innovation and Knowledge*

79. Manufacturing USA Institute; *CESMII: Smart Manufacturing of Cement*

80. Available

81. Manufacturing USA Institute; *Cybersecurity Manufacturing Innovation Institute (CYMANII)*

82. Manufacturing USA Institute; *Cybersecurity Manufacturing Innovation Institute (CYMANII)*

83. ORNL - MDF; *Smart Manufacturing*

84. ORNL - MDF; *SM2ART Tech Collaboration*

85. ORNL - MDF; *Innovation Ecosystem*

86. ORNL - MDF; *Materials and Systems*

87. ORNL - MDF; *MDF Tech Collaboration*

88. ORNL - MDF; *SM2ART Overview*