Fiscal Year 2019 Advanced Vehicle Technologies Research

FOA # DE-FOA-0002014

Applicant	Location city, state	Project Title	Federal Share
1A: DEVELOPMENT OF MATERIALS TO ENABLE SOLID STATE BATTERIES			
University of Maryland, College Park	College Park, MD	Lithium Dendrite-Free Solid Electrolytes for High Energy Lithium Batteries	$1,000,000
Solid Power, Inc	Louisville, CO	All Solid State Batteries Enabled by Multifunctional Electrolyte Materials	$999,982
Iowa State University of Science and Technology	Ames, IA	Development of Thin, Robust, Lithium-Impenetrable, High-Conductivity, Electrochemically Stable, Scalable, and Low-Cost Glassy Solid Electrolytes for Solid State Lithium Batteries	$1,000,000
University of Michigan	Ann Arbor, MI	Physical and Mechano-Electrochemical Phenomena of Thin Film Lithium-Ceramic Electrolyte Constructs	$1,000,000
University of Maryland, College Park	College Park, MD	Low Impedance Cathode/Electrolyte Interfaces for High Energy Density Solid-State Batteries	$1,000,000
Virginia Polytechnic Institute and State University	Blacksburg, VA	Molecular Ionic Composites: A New Class of Polymer Electrolytes to Enable All Solid-State and High Voltage Lithium Batteries	$1,000,000
General Motors LLC	Warren, MI	Hot Pressing of Reinforced All-solid-state Batteries with Sulfide Glass Electrolyte	$1,000,000
West Virginia University Research Corporation	Morgantown, WV	Single-Ion Conducting Electrolyte Extended to Cathode for All-Solid-State Lithium-Ion Batteries	$1,000,000
Pennsylvania State University	University Park, PA	Developing Materials for High-Energy-Density Solid State Lithium-Sulfur Batteries	$1,000,000
Board of Regents of the University of Wisconsin System on behalf of the University of Wisconsin-Milwaukee	Milwaukee, WI	Developing an In-situ Formed Dynamic Protection Layer to Mitigate Lithium Interface Shifting: Preventing Dendrite Formation on Metallic Lithium Surface to Facilitate Long Cycle Life of Lithium Solid State Batteries	$1,000,000
Wildcat Discovery Technologies	San Diego, CA	Composite Solid Ion Conductor with Engineered Lithium Interface	$1,223,833
1B: SOLID STATE BATTERY DIAGNOSTIC TOOL DEVELOPMENT			
General Motors LLC	Warren, MI	Fundamental Understanding of Interfacial Phenomena in Solid State Batteries	$1,000,000
University of Houston	Houston, TX	Multidimensional Diagnostics of the Interface Evolutions in Solid-State Lithium Batteries	$1,000,000
1C: SOLID STATE BATTERY MODELING DEVELOPMENT			
Virginia Commonwealth University	Richmond, VA	First-Principles Modeling of Cluster-Based Solid Electrolytes	$793,040
University of Louisville	Louisville, KY	Predictive Engineering of Interfaces and Cathodes for High-Performance All Solid-State Lithium-Sulfur Batteries	$1,000,000

2: ELECTRIC MOTOR RESEARCH INCREASING POWER DENSITY			
Magna Services of America, Inc.	Troy, MI	Wound Field Synchronous Machine System Integration towards Increased Power Density and Commercialization	$700,000
United Technologies Research Center	East Hartford, CT	Motor with Advanced Concepts for High Power Density and Integrated Cooling for Efficiency MACHINE	$699,800
University of Illinois at Urbana-Champaign	Urbana, IL	Ultra-High-Speed, High-Temperature Motor	$700,000
University of North Carolina at Charlotte	Charlotte, NC	Cost Effective Rare-Earth-Free Flux Doubling, Torque Doubling, Increased Power Density Traction Motor with Near-Zero Open-Circuit Back-Electro-magnetic Field (EMF) and No Cogging Torque	$600,000
Carnegie Mellon University	Pittsburgh, PA	Amorphous Metal Ribbons and Metal Amorphous Nanocomposite Materials Enabled High Power Density Vehicle Motor Applications	$700,000
3: ENERGY EFFICIENT MOBILITY SYSTEMS RESEARCH			
The Regents of the University of California (Berkeley)	Berkeley, CA	CIRCLES: Congestion Impact Reduction via CAV-in-the-loop Lagrangian Energy Smoothing	$3,499,906
Southwest Research Institute	San Antonio, TX	Energy Efficient Maneuvering of Connected Autonomous Vehicles with Situational Awareness at Intersections	$3,207,135
4: PREDICTIVE MODELING CAPABILITIES FOR THE CO-OPTIMIZATION OF FUELS AND ENGINES			
Auburn University	Auburn, AL	Enabling Low-Temperature Plasma (LTP) Ignition Technologies for Multi-Mode Engines through the Development of a Validated High-Fidelity LTP Model for Predictive Simulation Tools	$1,199,978
Stanford University	Stanford, CA	Development of High-Fidelity and Efficient Modeling Capabilities for Enabling Co-Optimization of Fuels and Multi-Mode Engines	$1,220,000
Purdue University	West Lafayette, IN	Hierarchically Informed Engineering Models for Predictive Modeling of Turbulent Premixed Flame Propagation in Pre-chamber Turbulent Jet Ignition	$875,000
5: NEW MATERIALS AND ENGINE TECHNOLOGIES FOR HIGH EFFICIENCY POWERTRAINS			
General Motors LLC	Pontiac, MI	Low Mass and High Efficiency Engine for Medium-Duty Truck Applications	$7,007,878
Ford Motor Company	Dearborn, MI	Next Generation High Efficiency Boosted Engine Development	$7,566,731
6A: ALTERNATIVE FUEL VEHICLES (AFVS) AND INFRASTRUCTURE FOR RESILIENCY AND EMERGENCY PREPAREDNESS			
Florida Department of Agriculture and Consumer Services, Office of Energy	Tallahassee, FL	Statewide Alternative Fuel Resiliency Plan	$700,000
E4 Carolinas, Inc.	Charlotte, NC	Carolina Alternative Fuel Infrastructure Plan for Storm Resilience Planning	$826,592
6B: NEW MOBILITY SERVICES IN RURAL AMERICA			

University of California: Davis	Davis, CA	Integration of Smart Ride-Sharing into an Existing Electric Vehicle Carsharing Service in the San Joaquin Valley	$750,000
Forth	Portland, OR	Clean Rural Shared Electric Mobility: The CRuSE Project	$548,540
Carnegie Mellon University	Pittsburgh, PA	Holistic and Energy-efficient Rural County Mobility Platform RAMP	$999,997
Rural Action	The Plains, OH	ROADMAP: Rural Open Access Development Mobility Action Plan	$900,524
Lone Star Clean Fuels Alliance (Central Texas Clean Cities Coalition)	Austin, TX	Electric first/last mile on-demand shuttle service for rural communities in Central Texas	$811,588
6C: ALTERNATIVE FUEL (E.G. NATURAL GAS) PROOF-OF-CONCEPT IN NEW COMMUNITIES AND FLEETS			
Tennessee Technological University	Cookeville, TN	Developing an EV Demonstration Testbed in the Upper Cumberland Region of Tennessee, an Economy Distressed Rural Region	$779,823
Utah Clean Cities Coalition	Salt Lake City, UT	East Zion National Park Electric Vehicle Shuttle System Plan	$780,000
Metropolitan Energy Center	Kansas City, MO	Electrifying Terminal Trucks in Un-incentivized Markets	$780,000
Clean Fuels Ohio	Columbus, OH	Heavy-Duty EV Demonstrations for Freight & Mobility Solutions	$779,011
6D: EV DATA COLLECTION			
CALSTART, Inc.	Pasadena, CA	Medium and Heavy-Duty EV Deployment - Data Collection	$2,166,871
Akimeka, LLC	Columbia, MD	EV-WATTS: Electric Vehicle Widescale Analysis for Tomorrow's Transportation Solutions	$3,999,370
6E: OPEN TOPIC			
Clean Fuels Ohio	Columbus, OH	Decentralized Mobility Ecosystem: Market Solutions for 21st Century Electrified Mobility	$669,999
Virginia Clean Cities in care of James Madison University	Harrisonburg, VA	Mid-Atlantic Electric School Bus Experience Project	$670,000
Utah Clean Cities	Salt Lake City, UT	Supporting Electric Vehicle Infrastructure Deployment along Rural Corridors in the Intermountain West	$670,000