
XV. Project Listings by State

Alabama

- IV.D.1 Toray Composites America: Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks

Arizona

- II.C.1 Arizona State University: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- V.C.9 Amsen Technologies LLC: Low-Cost Proton Conducting Membranes for PEM Fuel Cells

Arkansas

- III.6 Ashok Saxena, Consultant: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap

California

- II.C.1 Sandia National Laboratories: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- II.C.1 Stanford University: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- II.D.2 Lawrence Livermore National Laboratory: Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting
- II.D.2 Stanford University: Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting
- II.D.3 University of California, Irvine: Tandem Particle-Slurry Batch Reactors for Solar Water Splitting
- II.D.3 California Institute of Technology: Tandem Particle-Slurry Batch Reactors for Solar Water Splitting
- II.D.3 Lawrence Berkeley National Laboratory: Tandem Particle-Slurry Batch Reactors for Solar Water Splitting
- II.E.1 Lawrence Berkeley National Laboratory: Biomass to Hydrogen
- II.F.2 University of California, Irvine: Reformer-Electrolyzer-Purifier (REP) for Production of Hydrogen [CO₂ Pump]
- III.2 Sandia National Laboratories: Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service
- III.3 Ben C. Gerwick, Inc.: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.5 Bevilacqua Knight Inc.: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.5 LightSail: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.6 Structural Integrity Associates, Inc.: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- III.15 Lawrence Livermore National Laboratory: Cryo-Compressed Pathway Analysis (2016)
- IV.B.1 California Institute of Technology: Hydrogen Storage Engineering Center of Excellence
- IV.B.1 Jet Propulsion Laboratory: Hydrogen Storage Engineering Center of Excellence
- IV.C.1 Sandia National Laboratories: HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
- IV.C.2 Sandia National Laboratories: Hydrogen Storage Materials Advanced Research Consortium: Sandia Effort
- IV.C.3 Lawrence Livermore National Laboratory: HyMARC: Hydrogen Storage Materials Advanced Research Consortium (LLNL Effort)
- IV.C.4 Lawrence Berkeley National Laboratory: HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
- IV.C.4 Lawrence Livermore National Laboratory: HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
- IV.C.4 Sandia National Laboratories: HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
- IV.C.5 Lawrence Livermore National Laboratory: Improving the Kinetics and Thermodynamics of Mg(BH₄)₂ for Hydrogen Storage
- IV.C.5 Sandia National Laboratories: Improving the Kinetics and Thermodynamics of Mg(BH₄)₂ for Hydrogen Storage
- IV.C.7 Lawrence Berkeley National Laboratory: H₂ Storage Characterization and Optimization Research Efforts

California (Continued)

- IV.C.8 California Institute of Technology: Design and Synthesis of Materials with High Capacities for Hydrogen Physisorption
- IV.C.8 Lawrence Livermore National Laboratory: Design and Synthesis of Materials with High Capacities for Hydrogen Physisorption
- IV.C.12 Ardica Technologies, Inc.: Low-Cost α -Alane for Hydrogen Storage
- IV.C.12 SRI International: Low-Cost α -Alane for Hydrogen Storage
- IV.D.2 Lawrence Livermore National Laboratory: Thermomechanical Cycling of Thin Liner High Fiber Fraction Cryogenic Pressure Vessels Rapidly Refueled by Liquid Hydrogen Pump to 700 Bar
- IV.D.2 Linde LLC: Thermomechanical Cycling of Thin Liner High Fiber Fraction Cryogenic Pressure Vessels Rapidly Refueled by Liquid Hydrogen Pump to 700 Bar
- IV.D.2 Spencer Composites Corporation: Thermomechanical Cycling of Thin Liner High Fiber Fraction Cryogenic Pressure Vessels Rapidly Refueled by Liquid Hydrogen Pump to 700 Bar
- IV.D.4 Materia, Inc.: Next Generation Hydrogen Storage Vessels Enabled by Carbon Fiber Infusion with a Low Viscosity, High Toughness System
- IV.D.4 Spencer Composites Corporation: Next Generation Hydrogen Storage Vessels Enabled by Carbon Fiber Infusion with a Low Viscosity, High Toughness System
- IV.D.8 Sandia National Laboratories: Innovative Development, Selection and Testing to Reduce Cost and Weight of Materials for BOP Components
- V.A.4 Lawrence Berkeley National Laboratory: Tailored High Performance Low-PGM Alloy Cathode Catalysts
- V.B.1 Lawrence Berkeley National Laboratory: Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview
- V.B.3 Lawrence Berkeley National Laboratory: FC-PAD: Electrode Layer Integration
- V.B.4 Lawrence Berkeley National Laboratory: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.5 Lawrence Berkeley National Laboratory: FC-PAD: Modeling, Evaluation, Characterization
- V.B.6 Lawrence Berkeley National Laboratory: Multiscale Modeling of Fuel Cell Membranes
- V.C.7 Lawrence Berkeley National Laboratory: Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells
- V.D.1 Lawrence Berkeley National Laboratory: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.F.8 Lawrence Berkeley National Laboratory: A Total Cost of Ownership Model for Design and Manufacturing Optimization of Fuel Cells in Stationary and Emerging Market Applications
- V.F.8 University of California, Berkeley: A Total Cost of Ownership Model for Design and Manufacturing Optimization of Fuel Cells in Stationary and Emerging Market Applications
- VI.1 Lawrence Berkeley National Laboratory: Fuel Cell MEA Manufacturing R&D
- VI.2 National Fuel Cell Research Center: Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
- VII.A.4 Hydrogenics USA: Fuel Cell Hybrid Electric Delivery Van Project
- VII.B.2 Linde Gas, LLC: Performance Evaluation of Delivered Hydrogen Fueling Stations
- VII.B.4 California State University, Los Angeles: CSULA Hydrogen Refueling Facility Performance Evaluation and Optimization
- VII.C.2 Sandia National Laboratories: Development of the Hydrogen Station Equipment Performance (HyStEP) Device
- VII.C.3 Worthington Cylinder Corporation: Advanced Hydrogen Fueling Station Supply: Tube Trailers
- VII.C.4 Lawrence Livermore National Laboratory: Performance and Durability Testing of Volumetrically Efficient Cryogenic Vessels and High Pressure Liquid Hydrogen Pump
- VII.C.4 Linde LLC: Performance and Durability Testing of Volumetrically Efficient Cryogenic Vessels and High Pressure Liquid Hydrogen Pump
- VII.C.4 Spencer Composites Corporation: Performance and Durability Testing of Volumetrically Efficient Cryogenic Vessels and High Pressure Liquid Hydrogen Pump

California (Continued)

- VII.C.6 California Fuel Cell Partnership: Station Operational Status System (SOSS) 3.0 Implementation, SOSS 3.1 Upgrade, and Station Map Upgrade Project
- VII.D.3 Humboldt State University: Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation
- VIII.1 Branded by Media: National Codes and Standards Deployment and Outreach
- VIII.2 Sandia National Laboratories: R&D for Safety, Codes and Standards: Materials and Components Compatibility
- VIII.3 Smart Chemistry: Hydrogen Fuel Quality
- VIII.5 Sandia National Laboratory: Hydrogen Quantitative Risk Assessment
- VIII.6 Bki: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.6 City of Santa Fe Springs: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.6 Fluor, Inc.: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.10 Sandia National Laboratory: Enabling Hydrogen Infrastructure Through Science-Based Codes and Standards
- IX.4 Sandia National Laboratories: Hydrogen Analysis with the Sandia ParaChoice Model
- X.3 Sandia National Laboratories: Maritime Fuel Cell Generator Project

Colorado

- II.B.1 National Renewable Energy Laboratory: Renewable Electrolysis Integrated System Development and Testing
- II.B.1 Spectrum Automation Controls: Renewable Electrolysis Integrated System Development and Testing
- II.B.2 National Renewable Energy Laboratory: High-Performance, Long-Lifetime Catalysts for Proton Exchange Membrane Electrolysis
- II.C.1 Colorado School of Mines: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- II.C.2 University of Colorado Boulder: Flowing Particle Bed Solarthermal RedOx Process to Split Water
- II.C.2 National Renewable Energy Laboratory: Flowing Particle Bed Solarthermal RedOx Process to Split Water
- II.C.4 University of Colorado Boulder: NSF/DOE Solar Hydrogen Fuel: Accelerated Discovery of Advanced RedOx Materials for Solar Thermal Water Splitting to Produce Renewable Hydrogen
- II.D.1 National Renewable Energy Laboratory: High-Efficiency Tandem Absorbers for Economical Solar Hydrogen Production
- II.D.2 National Renewable Energy Laboratory: Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting
- II.E.1 National Renewable Energy Laboratory: Biomass to Hydrogen
- III.2 Colorado School of Mines: Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service
- III.9 National Renewable Energy Laboratory: Improved Hydrogen Liquefaction through Heisenberg Vortex Separation of Para- and Orthohydrogen
- III.11 National Renewable Energy Laboratory: 700 bar Hydrogen Dispenser Hose Reliability Improvement
- III.11 Spectrum Automation Controls: 700 bar Hydrogen Dispenser Hose Reliability Improvement
- III.12 National Renewable Energy Laboratory: Cryogenically Flexible, Low Permeability H₂ Delivery Hose
- III.14 National Renewable Energy Laboratory: H2FIRST--Consolidation
- IV.B.1 National Renewable Energy Laboratory: Hydrogen Storage Engineering Center of Excellence
- IV.B.2 National Renewable Energy Laboratory: Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements
- IV.C.7 National Renewable Energy Laboratory: H₂ Storage Characterization and Optimization Research Efforts
- IV.D.5 Composite Technology Development, Inc.: Optimizing the Cost and Performance of Composite Cylinders for H₂ Storage using a Graded Construction
- V.A.6 National Renewable Energy Laboratory: Extended Surface Electrocatalyst Development
- V.A.6 ALD Nanosolutions: Extended Surface Electrocatalyst Development

Colorado (Continued)

- V.A.6 Colorado School of Mines: Extended Surface Electrocatalyst Development
- V.A.6 University of Colorado Boulder: Extended Surface Electrocatalyst Development
- V.A.8 National Renewable Energy Laboratory: Highly-Accessible Catalysts for Durable High-Power Performance
- V.B.1 National Renewable Energy Laboratory: Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview
- V.B.2 National Renewable Energy Laboratory: FC-PAD Fuel Cell-Performance and Durability Electrocatalysts and Supports
- V.B.3 National Renewable Energy Laboratory: FC-PAD: Electrode Layer Integration
- V.B.4 Colorado School of Mines: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.4 National Renewable Energy Laboratory: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.5 National Renewable Energy Laboratory: FC-PAD: Modeling, Evaluation, Characterization
- V.C.2 Colorado School of Mines: Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications
- V.C.2 National Renewable Energy Laboratory: Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications
- V.C.5 National Renewable Energy Laboratory: Highly Stable Anion-Exchange Membranes for High-Voltage Redox-Flow Batteries
- V.C.7 National Renewable Energy Laboratory: Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells
- V.C.7 Colorado School of Mines: Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells
- V.D.6 National Renewable Energy Laboratory: Advanced Catalysts and Membrane Electrode Assemblies (MEAs) for Reversible Alkaline Membrane Fuel Cells
- V.E.1 National Renewable Energy Laboratory: Regenerative Fuel Cell System
- V.F.4 National Renewable Energy Laboratory: Fuel Cell Technology Status: Degradation
- V.G.8 University of Colorado Boulder: Analysis of the Mechanisms of Electrochemical Oxygen Reduction and Development of Ag-alloy and Pt-alloy Electrocatalysis for Low Temperature Fuel Cells
- V.G.17 National Renewable Energy Laboratory: Hydroxide Conductors for Energy Conversion Devices
- VI.1 National Renewable Energy Laboratory: Fuel Cell Membrane Electrode Assembly Manufacturing R&D
- VI.1 Colorado School of Mines: Fuel Cell Membrane Electrode Assembly Manufacturing R&D
- VI.2 National Renewable Energy Laboratory: Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
- VI.6 National Renewable Energy Laboratory: In-line Quality Control of PEM Materials
- VI.7 National Renewable Energy Laboratory: Manufacturing Competitiveness Analysis for Hydrogen Refueling Stations
- VII.A.1 National Renewable Energy Laboratory: Fuel Cell Electric Vehicle Evaluation
- VII.A.2 National Renewable Energy Laboratory: Technology Validation: Fuel Cell Bus Evaluations
- VII.B.1 National Renewable Energy Laboratory: Hydrogen Station Data Collection and Analysis
- VII.B.5 National Renewable Energy Laboratory: Brentwood Case Study
- VII.B.5 Anderson Burton: Brentwood Case Study
- VII.C.1 National Renewable Energy Laboratory: Hydrogen Component Validation
- VII.C.1 Spectrum Automation Controls: Hydrogen Component Validation
- VII.C.5 National Renewable Energy Laboratory: Hydrogen Meter Benchmark Testing
- VII.C.5 Spectrum Automation Controls: Hydrogen Meter Benchmark Testing
- VII.D.1 National Renewable Energy Laboratory: Stationary Fuel Cell Evaluation
- VII.D.2 National Renewable Energy Laboratory: Material Handling Equipment Data Collection and Analysis
- VIII.1 National Renewable Energy Laboratory: National Codes and Standards Deployment and Outreach
- VIII.4 Sandia National Laboratories: R&D for Safety, Codes and Standards: Hydrogen Behavior
- VIII.7 National Renewable Energy Laboratory: NREL Hydrogen Sensor Testing Laboratory

Colorado (Continued)

- VIII.7 Bloomfield Automation: NREL Hydrogen Sensor Testing Laboratory
- VIII.7 Element One: NREL Hydrogen Sensor Testing Laboratory
- IX.7 National Renewable Energy Laboratory: Sustainability Analysis of Hydrogen Supply and Stationary Fuel Cell Systems Using the Hydrogen Regional Sustainability (HyReS) Framework
- IX.8 National Renewable Energy Laboratory: Evaluation of Technology Status Compared to Program Targets
- IX.9 National Renewable Energy Laboratory: Expanded Capabilities for the Hydrogen Financial Analysis Scenario Tool
- IX.11 National Renewable Energy Laboratory: National FCEV and Hydrogen Refueling Station Scenarios
- IX.11 Lexidyne, LLC: National FCEV and Hydrogen Refueling Station Scenarios

Connecticut

- II.B.3 Proton OnSite: High Performance Platinum Group Metal Free Membrane Electrode Assemblies Through Control of Interfacial Processes
- II.B.5 FuelCell Energy: Solid Oxide Based Electrolysis and Stack Technology with Ultra-High Electrolysis Current Density (>3 A/cm²) and Efficiency
- II.B.6 Proton OnSite: Economical Production of Hydrogen Through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis
- II.B.7 Proton OnSite: New Approaches to Improved PEM Electrolyzer Ion Exchange Membranes
- II.F.2 FuelCell Energy: Reformer-Electrolyzer-Purifier (REP) for Production of Hydrogen [CO₂ Pump]
- IV.B.1 United Technologies Research Center: Hydrogen Storage Engineering Center of Excellence
- V.A.3 FuelCell Energy: Innovative Non-PGM Catalysts for High-Temperature PEMFCs
- V.B.7 University of Connecticut: The Effect of Airborne Contaminants on Fuel Cell Performance and Durability
- V.B.7 WPCSOL: The Effect of Airborne Contaminants on Fuel Cell Performance and Durability
- V.C.3 FuelCell Energy: Smart Matrix Development for Direct Carbonate Fuel Cell
- V.C.3 University of Connecticut: Smart Matrix Development for Direct Carbonate Fuel Cell
- V.D.3 United Technologies Research Center: Rationally Designed Catalyst Layers for PEMFC Performance Optimization
- V.G.6 University of Connecticut: Room Temperature Electrochemical Upgrading of Methane to Oxygenate Fuels
- VI.2 Connecticut Center for Advanced Technology: Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
- VII.B.3 Proton OnSite: Validation of an Advanced High Pressure PEM Electrolyzer and Composite Hydrogen Storage, with Data Reporting, for SunHydro Stations
- VII.B.3 SunHydro LLC: Validation of an Advanced High Pressure PEM Electrolyzer and Composite Hydrogen Storage, with Data Reporting, for SunHydro Stations
- VII.B.5 Proton OnSite: Brentwood Case Study
- VIII.6 GWS Solutions of Tolland, LLC: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.6 Proton OnSite: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Delaware

- V.A.6 University of Delaware: Extended Surface Electrocatalyst Development
- V.B.4 University of Delaware: FC-PAD: Ionomer, GDLs, Interfaces
- V.C.5 University of Delaware: Highly Stable Anion-Exchange Membranes for High-Voltage Redox-Flow Batteries

Florida

- VI.1 Mainstream Engineering: Fuel Cell Membrane Electrode Assembly Manufacturing R&D
- VI.6 Mainstream Engineering: In-line Quality Control of PEM Materials

Florida (Continued)

- VII.D.3 Florida State University: Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation
- VIII.6 Witte Engineered Gases: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Georgia

- II.B.6 Georgia Institute of Technology: Economical Production of Hydrogen Through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis
- II.E.2 University of Georgia: Sweet Hydrogen: High-Yield Production of Hydrogen from Biomass Sugars Catalyzed by in vitro Synthetic Biosystems
- IV.D.3 Center for Transportation and the Environment: Conformable Hydrogen Storage Pressure Vessel Project
- V.G.10 Georgia Institute of Technology: Atomic-Scale Design of Metal and Alloy Catalysts: A Combined Theoretical and Experimental Approach
- VI.1 Georgia Institute of Technology: Fuel Cell Membrane Electrode Assembly Manufacturing R&D
- VII.A.4 Center for Transportation and the Environment: Fuel Cell Hybrid Electric Delivery Van Project
- VII.A.4 United Parcel Services: Fuel Cell Hybrid Electric Delivery Van Project

Hawaii

- II.D.1 University of Hawaii: High-Efficiency Tandem Absorbers for Economical Solar Hydrogen Production
- II.D.2 University of Hawaii: Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting
- IV.C.7 University of Hawaii: H₂ Storage Characterization and Optimization Research Efforts
- V.B.7 Hawaii Natural Energy Institute: The Effect of Airborne Contaminants on Fuel Cell Performance and Durability
- V.D.2 University of Hawaii: Novel Structured Metal Bipolar Plates for Low Cost Manufacturing
- X.1 Hawaii Natural Energy Institute: Hydrogen Energy Systems as a Grid Management Tool

Idaho

- VII.D.3 Idaho National Laboratory: Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation

Illinois

- II.C.1 Northwestern University: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- III.1 Argonne National Laboratory: Hydrogen Delivery Infrastructure Analysis
- III.7 Gas Technology Institute: Compressor-Less Hydrogen Refueling Station Using Thermal Compression
- III.13 Argonne National Laboratory: Hydrogen Fueling Station Precooling Analysis
- IV.A.1 Argonne National Laboratory: System Analysis of Physical and Materials-Based Hydrogen Storage
- IV.C.9 Argonne National Laboratory: High-Capacity and Low-Cost Hydrogen-Storage Sorbents for Automotive Applications
- V.A.4 Argonne National Laboratory: Tailored High Performance Low-PGM Alloy Cathode Catalysts
- V.A.7 Argonne National Laboratory: Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports
- V.A.9 Illinois Institute of Technology: Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs
- V.B.1 Argonne National Laboratory: Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview
- V.B.2 Argonne National Laboratory: FC-PAD Fuel Cell-Performance and Durability Electrocatalysts and Supports
- V.B.3 Argonne National Laboratory: FC-PAD: Electrode Layer Integration
- V.B.4 Argonne National Laboratory: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.5 Argonne National Laboratory: FC-PAD: Modeling, Evaluation, Characterization
- V.C.3 Illinois Institute of Technology: Smart Matrix Development for Direct Carbonate Fuel Cell
- V.C.6 Argonne National Laboratory: Advanced Materials for Fully-Integrated MEAs in AEMFCs

Illinois (Continued)

- V.D.1 Argonne National Laboratory: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.D.3 Argonne National Laboratory: Rationally Designed Catalyst Layers for PEMFC Performance Optimization
- V.F.5 Argonne National Laboratory: Performance and Durability of Advanced Automotive Fuel Cell Stacks and Systems with Nanostructured Thin Film Catalyst Based Membrane Electrode Assemblies
- V.G.16 University of Chicago: Computer Simulation of Proton Transport in Fuel Cell Membranes
- VII.A.3 Argonne National Laboratory: Fuel Cell Electric Truck (FCET) Component Sizing
- VII.B.2 Gas Technology Institute: Performance Evaluation of Delivered Hydrogen Fueling Stations
- IX.1 Argonne National Laboratory: Employment Impacts of Hydrogen and Fuel Cell Technologies
- IX.1 RCF Economic and Financial Consulting, Inc.: Employment Impacts of Hydrogen and Fuel Cell Technologies
- IX.2 Argonne National Laboratory: Life-Cycle Analysis of Water Consumption for Hydrogen Production
- IX.3 Argonne National Laboratory: Impact of Fuel Cell and H₂ Storage Improvements on FCEVs
- IX.5 Argonne National Laboratory: Life Cycle Analysis of Emerging Hydrogen Production Technologies
- IX.10 University of Chicago: The Business Case for Hydrogen-powered Passenger Cars: Competition and Solving the Infrastructure Puzzle

Indiana

- III.5 AccerlorMittal: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- IV.D.3 High Energy Coil Reservoirs, LLC: Conformable Hydrogen Storage Pressure Vessel Project
- V.A.7 Purdue University: Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports
- V.D.3 Indiana University Purdue University: Rationally Designed Catalyst Layers for PEMFC Performance Optimization

Iowa

- IV.C.6 Ames Laboratory: High-capacity Hydrogen Storage Systems via Mechanochemistry

Kentucky

- III.5 Adaptive Intelligent Systems LLC: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage

Maryland

- III.2 National Institute of Standards and Technology: Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service
- IV.C.7 National Institute of Standards and Technology: H₂ Storage Characterization and Optimization Research Efforts
- V.A.7 John Hopkins University: Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports
- V.D.1 John Hopkins University: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.D.4 Redox Power Systems: Affordable, High Performance, Intermediate Temperature Solid Oxide Fuel Cells
- V.D.4 University of Maryland: Affordable, High Performance, Intermediate Temperature Solid Oxide Fuel Cells
- V.F.2 National Institute of Standards and Technology: Neutron Imaging Study of the Water Transport in Operating Fuel Cells
- V.G.3 John Hopkins University: Control of Reactivity in Nanoporous Metal/Ionic Liquid Composite Catalysts
- IX.1 Energetics, Inc.: Employment Impacts of Hydrogen and Fuel Cell Technologies

Massachusetts

- II.B.2 Giner, Inc.: High-Performance, Long-Lifetime Catalysts for Proton Exchange Membrane Electrolysis
- II.B.3 Northeastern University: High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes

Massachusetts (Continued)

- II.B.4 Giner, Inc.: High Temperature, High Pressure Electrolysis
- III.8 GVD Corporation: Advanced Barrier Coatings for Harsh Environments
- V.A.3 Northeastern University: Innovative Non-PGM Catalysts for High-Temperature PEMFCs
- V.B.4 Tufts University: FC-PAD: Ionomer, GDLs, Interfaces
- V.C.4 Giner, Inc.: Ionomer Dispersion Impact on Fuel Cell and Electrolyzer Performance and Durability
- V.C.8 Giner, Inc.: Dimensionally Stable High Performance Membranes
- V.C.11 ElectroChem, Inc.: Novel Nanocomposite Polymer Electrolyte Membranes for Fuel Cells
- V.D.5 Advent Technologies Inc.: Facilitated Direct Liquid Fuel Cells with High Temperature Membrane Electrode Assemblies
- V.D.6 Giner, Inc.: Advanced Catalysts and Membrane Electrode Assemblies (MEAs) for Reversible Alkaline Membrane Fuel Cells
- V.E.1 Giner, Inc.: Regenerative Fuel Cell System
- V.G.9 University of Massachusetts Amherst: Computational Design of Graphene-Nanoparticle Catalysts
- VIII.6 Firexplo: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- X.4 Nuvera Fuel Cells: Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

Michigan

- IV.B.1 Ford Motor Company: Hydrogen Storage Engineering Center of Excellence
- IV.B.1 General Motors Company: Hydrogen Storage Engineering Center of Excellence
- IV.B.1 University of Michigan: Hydrogen Storage Engineering Center of Excellence
- IV.C.5 University of Michigan: Improving the Kinetics and Thermodynamics of $Mg(BH_4)_2$ for Hydrogen Storage
- IV.C.10 University of Michigan: Hydrogen Adsorbents with High Volumetric Density: New Materials and System Projections
- IV.C.10 Ford Motor Company: Hydrogen Adsorbents with High Volumetric Density: New Materials and System Projections
- IV.D.1 Ford Motor Company: Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks
- V.A.1 General Motors Company: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design
- V.A.8 General Motors Company: Highly-Accessible Catalysts for Durable High-Power Performance
- V.A.9 Nissan Technical Center, North America: Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs
- V.C.1 General Motors Company: New Fuel Cell Membranes with Improved Durability and Performance
- V.C.2 Nissan Technical Center, North America: Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications
- V.D.1 General Motors Company: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.D.1 Michigan Technological University: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.G.7 Wayne State University: Nanostructured, Targeted Layered Metal Oxides as Active and Selective Heterogeneous Electrocatalysts for Oxygen Evolution
- V.G.8 University of Michigan: Analysis of the Mechanisms of Electrochemical Oxygen Reduction and Development of Ag-alloy and Pt-alloy Electrocatalysis for Low Temperature Fuel Cells
- V.G.14 Central Michigan University: Element Specific Atomic Arrangement of Binary and Ternary Alloy Nanosized Catalysts in As-Prepared and Active State
- VI.1 General Motors Company: Fuel Cell Membrane Electrode Assembly Manufacturing R&D
- VIII.9 Ford Motor Company: Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure

Minnesota

- V.A.7 3M Company: Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports
- V.A.8 3M Company: Highly-Accessible Catalysts for Durable High-Power Performance
- V.B.4 3M Company: FC-PAD: Ionomer, GDLs, Interfaces
- V.C.1 3M Company: New Fuel Cell Membranes with Improved Durability and Performance
- V.C.2 3M Company: Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications
- V.C.7 3M Company: Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells
- V.D.1 3M Company: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- VI.1 3M Company: Fuel Cell Membrane Electrode Assembly Manufacturing R&D

Missouri

- II.B.6 Washington University: Economical Production of Hydrogen Through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis
- IV.C.6 University of Missouri: High-capacity Hydrogen Storage Systems via Mechanochemistry
- VIII.6 Becht Engineering: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Montana

- IV.D.4 Montana State University: Next Generation Hydrogen Storage Vessels Enabled by Carbon Fiber Infusion with a Low Viscosity, High Toughness System

Nebraska

- IV.B.1 Hexagon Lincoln: Hydrogen Storage Engineering Center of Excellence
- IV.D.1 Hexagon Lincoln: Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks
- IV.D.6 Hexagon Lincoln: Achieving Hydrogen Storage Goals through High-Strength Fiber Glass

Nevada

- II.D.1 University of Nevada: High-Efficiency Tandem Absorbers for Economical Solar Hydrogen Production
- II.D.2 University of Nevada: Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting

New Hampshire

- III.5 Sustain X: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.12 New England Wire Technologies, Inc.: Cryogenically Flexible, Low Permeability H₂ Delivery Hose

New Jersey

- V.C.11 NEI Corporation: Novel Nanocomposite Polymer Electrolyte Membranes for Fuel Cells
- V.D.2 TreadStone Technologies, Inc.: Novel Structured Metal Bipolar Plates for Low Cost Manufacturing

New Mexico

- II.B.3 University of New Mexico: High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes
- II.B.6 Pajarito Powder: Economical Production of Hydrogen Through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis
- II.E.1 Sandia National Laboratories: Biomass to Hydrogen
- IV.B.1 Los Alamos National Laboratory: Hydrogen Storage Engineering Center of Excellence
- IV.D.5 Adherent Technologies, Inc.: Optimizing the Cost and Performance of Composite Cylinders for H₂ Storage using a Graded Construction
- V.A.1 Los Alamos National Laboratory: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development & Electrode Structure Design

New Mexico (Continued)

- V.A.1 IRD Fuel Cells: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development & Electrode Structure Design
- V.A.2 University of New Mexico: Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media
- V.A.2 IRD Fuel Cells: Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media
- V.A.2 Los Alamos National Laboratory: Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media
- V.A.2 Pajarito Powder: Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media
- V.A.3 Pajarito Powder: Innovative Non-PGM Catalysts for High-Temperature PEMFCs
- V.A.3 University of New Mexico: Innovative Non-PGM Catalysts for High-Temperature PEMFCs
- V.A.4 Los Alamos National Laboratory: Tailored High Performance Low-PGM Alloy Cathode Catalysts
- V.A.5 Los Alamos National Laboratory: Platinum Monolayer Electrocatalysts
- V.A.9 University of New Mexico: Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs
- V.B.1 Los Alamos National Laboratory: Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview
- V.B.2 Los Alamos National Laboratory: FC-PAD Fuel Cell-Performance and Durability Electrocatalysts and Supports
- V.B.3 Los Alamos National Laboratory: FC-PAD: Electrode Layer Integration
- V.B.4 Los Alamos National Laboratory: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.5 Los Alamos National Laboratory: FC-PAD: Modeling, Evaluation, Characterization
- V.C.4 Los Alamos National Laboratory: Ionomer Dispersion Impact on Fuel Cell and Electrolyzer Performance and Durability
- V.C.6 Los Alamos National Laboratory: Advanced Materials for Fully-Integrated MEAs in AEMFCs
- V.C.6 Sandia National Laboratories: Advanced Materials for Fully-Integrated MEAs in AEMFCs
- V.D.1 Los Alamos National Laboratory: High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
- V.D.5 Los Alamos National Laboratory: Facilitated Direct Liquid Fuel Cells with High Temperature Membrane Electrode Assemblies
- V.F.3 Los Alamos National Laboratory: Technical Assistance to Developers
- V.G.13 University of New Mexico: Sub Nanometer Sized Clusters for Heterogeneous Catalysis
- VIII.3 Los Alamos National Laboratory: Hydrogen Fuel Quality
- VIII.5 Sandia National Laboratories: Hydrogen Quantitative Risk Assessment
- VIII.10 Sandia National Laboratories: Enabling Hydrogen Infrastructure Through Science-Based Codes and Standards

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- V.A.1 University of Rochester: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design
- V.A.5 Brookhaven National Laboratory: Platinum Monolayer Electrocatalysts
- V.A.8 Cornell University: Highly-Accessible Catalysts for Durable High-Power Performance
- V.C.6 Rensselaer Polytechnic University: Advanced Materials for Fully-Integrated MEAs in AEMFCs
- V.C.8 Rensselaer Polytechnic University: Dimensionally Stable High Performance Membranes
- V.D.6 University at Buffalo-SUNY: Advanced Catalysts and Membrane Electrode Assemblies (MEAs) for Reversible Alkaline Membrane Fuel Cells
- V.G.1 Brookhaven National Laboratory: Structure and Function in Electrocatalysis of Reactions for Direct Energy Conversion
- V.G.2 Brookhaven National Laboratory: Catalysis and Electrocatalysis for Advanced Fuel Synthesis: Hydrogen Production and the Water-Gas Shift
- VI.5 Automated Dynamics: Continuous Fiber Composite Electrofusion Coupler
- VII.A.4 Unique Electric Solutions: Fuel Cell Hybrid Electric Delivery Van Project

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- X.2 Plug Power: Ground Support Equipment Demonstration
- X.5 Plug Power: FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles

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- III.4 ACI Services: Hydrogen Compression Application of the Linear Motor Reciprocating Compressor (LMRC)
- III.6 N&R Engineering: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- III.12 Swagelok: Cryogenically Flexible, Low Permeability H₂ Delivery Hose
- V.E.1 pH Matter, LLC: Regenerative Fuel Cell System
- V.F.7 Battelle: Stationary and Emerging Market Fuel Cell System Cost Analysis—Primary Power and Combined Heat and Power Applications
- VI.2 Ohio Fuel Cell Coalition: Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
- VI.2 DJW Technology, LLC: Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
- VI.4 GLWN, Westside Industrial Retention & Expansion Network: U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis
- VI.4 DJW Technology, LLC: U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis
- X.5 Workhorse Technologies Inc.: FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles

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- II.E.3 Oregon State University: Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass
- III.3 Harris Thermal Transfer Products: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.6 Hy-Performance Materials Testing, LLC: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- IV.B.1 Oregon State University: Hydrogen Storage Engineering Center of Excellence
- IV.D.8 Hy-Performance Materials Testing, LLC: Innovative Development, Selection and Testing to Reduce Cost and Weight of Materials for BOP Components

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- II.B.3 Pennsylvania State University: High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes
- II.C.1 Bucknell University: High Efficiency Solar Thermochemical Reactor for Hydrogen Production
- II.E.1 Pennsylvania State University: Biomass to Hydrogen
- III.3 Temple University: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.5 Temple University: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.6 CP Industries: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- III.14 PDC Machines: H2FIRST—Consolidation
- IV.D.6 PPG Industries: Achieving Hydrogen Storage Goals through High-Strength Fiber Glass
- V.A.1 Carnegie Mellon University: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design
- V.A.8 Carnegie Mellon University: Highly-Accessible Catalysts for Durable High-Power Performance
- V.A.8 Drexel University: Highly-Accessible Catalysts for Durable High-Power Performance
- VII.B.3 Air Products and Chemicals, Inc.: Validation of an Advanced High Pressure PEM Electrolyzer and Composite Hydrogen Storage, with Data Reporting, for SunHydro Stations
- VII.C.3 Air Products and Chemicals, Inc.: Advanced Hydrogen Fueling Station Supply: Tube Trailers

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- VIII.3 ASTM International: Hydrogen Fuel Quality
- VIII.3 SAE International: Hydrogen Fuel Quality
- VIII.6 Air Products and Chemicals, Inc.: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

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- II.B.7 Tetramer Technologies, LLC: New Approaches to Improved PEM Electrolyzer Ion Exchange Membranes
- II.C.3 Savannah River National Laboratory: Electrolyzer Component Development for the HyS Thermochemical Cycle
- II.C.3 Savannah River Consulting LLC: Electrolyzer Component Development for the HyS Thermochemical Cycle
- IV.B.1 Savannah River National Laboratory: Hydrogen Storage Engineering Center of Excellence
- IV.B.2 Savannah River National Laboratory: Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements
- IV.B.3 Savannah River National Laboratory: Investigation of Metal and Chemical Hydrides for Hydrogen Storage in Novel Fuel Cell Systems
- IV.B.3 Savannah River Consulting LLC: Investigation of Metal and Chemical Hydrides for Hydrogen Storage in Novel Fuel Cell Systems
- IV.C.11 Savannah River National Laboratory: Electrochemical Reversible Formation of Alane
- VI.5 Savannah River National Laboratory: Continuous Fiber Composite Electrofusion Coupler

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- III.2 Oak Ridge National Laboratory: Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service
- III.3 Oak Ridge National Laboratory: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.5 Oak Ridge National Laboratory: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.6 Oak Ridge National Laboratory: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- IV.D.1 AOC, LLC: Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks
- IV.D.5 Oak Ridge National Laboratory: Optimizing the Cost and Performance of Composite Cylinders for H₂ Storage using a Graded Construction
- IV.D.7 Oak Ridge National Laboratory: Melt Processable PAN Precursor for High Strength, Low-Cost Carbon Fibers (Phase II)
- V.A.1 Oak Ridge National Laboratory: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design
- V.A.4 Oak Ridge National Laboratory: Tailored High Performance Low-PGM Alloy Cathode Catalysts
- V.A.7 Oak Ridge National Laboratory: Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports
- V.B.1 Oak Ridge National Laboratory: Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview
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- V.B.3 Oak Ridge National Laboratory: FC-PAD: Electrode Layer Integration
- V.B.4 Oak Ridge National Laboratory: FC-PAD: Ionomer, GDLs, Interfaces
- V.B.5 Oak Ridge National Laboratory: FC-PAD: Modeling, Evaluation, Characterization
- V.C.1 Vanderbilt University: New Fuel Cell Membranes with Improved Durability and Performance
- V.C.7 Oak Ridge National Laboratory: Advanced Ionomers & MEAs for Alkaline Membrane Fuel Cells
- V.F.1 Oak Ridge National Laboratory: New Fuel Cell Materials: Characterization and Method Development
- V.G.12 Oak Ridge National Laboratory: Fundamentals of Catalysis and Chemical Transformations
- IX.6 University of Tennessee: Policies to Promote Alternative Fuel Vehicles
- X.5 Federal Express Corporation: FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles

Texas

- III.3 Hanson Pressure Pipe: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.4 Southwest Research Institute®: Hydrogen Compression Application of the Linear Motor Reciprocating Compressor (LMRC)
- III.5 Air Liquide: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.5 Forterra Water Pipe: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- IV.C.9 Texas A&M University: High-Capacity and Low-Cost Hydrogen-Storage Sorbents for Automotive Applications
- IV.D.3 University of Texas at Austin: Conformable Hydrogen Storage Pressure Vessel Project
- V.D.3 University of Texas at Austin: Rationally Designed Catalyst Layers for PEMFC Performance Optimization
- V.G.5 Texas A&M University: Modeling Catalyzed Growth of Single Walled Carbon Nanotubes
- V.G.11 University of Houston: Dual Site Requirements for Hydrogen-oxygenation of Model Biomass Compounds
- VI.5 NOV Fiberglass Systems: Continuous Fiber Composite Electrofusion Coupler
- VII.A.4 University of Texas at Austin: Fuel Cell Hybrid Electric Delivery Van Project
- VII.A.4 Valence Technology: Fuel Cell Hybrid Electric Delivery Van Project
- VIII.6 Air Liquide: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

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- III.3 MegaStir Technologies LLC: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.5 MegaStir Technologies LLC: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- V.G.15 University of Utah: Thermodynamic, Kinetic and Electrochemical Studies on Mixed Proton, Oxygen Ion and Electron (Hole) Conductors

Virginia

- II.A.1 Strategic Analysis, Inc.: Hydrogen Pathways Analysis for H₂ Production via a Monolithic Piston Reforming Reactor and Reformer-Electrolyzer-Purifier Technology
- II.B.4 Virginia Polytechnic Institute and State University: High Temperature, High Pressure Electrolysis
- II.E.2 Virginia Polytechnic Institute and State University: Sweet Hydrogen: High-Yield Production of Hydrogen from Biomass Sugars Catalyzed by in vitro Synthetic Biosystems
- III.5 Wiretough Cylinders: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.6 Wiretough Cylinders: Low Cost Hydrogen Storage at 875 Bar Using Steel Liner and Steel Wire Wrap
- III.12 NanoSonic, Inc.: Cryogenically Flexible, Low Permeability H₂ Delivery Hose
- IV.A.2 Strategic Analysis, Inc.: Hydrogen Storage Cost Analysis
- IV.D.7 Virginia Polytechnic Institute and State University: Melt Processable PAN Precursor for High Strength, Low-Cost Carbon Fibers (Phase II)
- V.C.10 NanoSonic, Inc.: Novel Hydrocarbon Ionomers for Durable Proton Exchange Membranes
- V.F.6 Strategic Analysis, Inc.: Fuel Cell Vehicle and Bus Cost Analysis
- V.F.8 Strategic Analysis, Inc.: A Total Cost of Ownership Model for Design and Manufacturing Optimization of Fuel Cells in Stationary and Emerging Market Applications
- V.G.8 Virginia Polytechnic Institute and State University: Analysis of the Mechanisms of Electrochemical Oxygen Reduction and Development of Ag-alloy and Pt-alloy Electrocatalysis for Low Temperature Fuel Cells
- VI.3 Virginia Clean Cities at James Madison University: Fuel Cell and Hydrogen Opportunity Center, www.hfcnexus.com
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- VIII.6 Consultant: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

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- II.E.3 Pacific Northwest National Laboratory: Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass
- II.F.1 Pacific Northwest National Laboratory: Monolithic Piston-Type Reactor for Hydrogen Production through Rapid Swing of Reforming/Combustion Reactions
- II.F.1 Dason Technology: Monolithic Piston-Type Reactor for Hydrogen Production through Rapid Swing of Reforming/Combustion Reactions
- II.F.1 Washington State University: Monolithic Piston-Type Reactor for Hydrogen Production through Rapid Swing of Reforming/Combustion Reactions
- III.3 Global Engineering and Technology, LLC: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- III.5 Global Engineering and Technology, LLC: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
- III.9 Washington State University: Improved Hydrogen Liquefaction through Heisenberg Vortex Separation of Para- and Orthohydrogen
- III.10 Pacific Northwest National Laboratory: Magnetocaloric Hydrogen Liquefaction
- III.10 Emerald Energy NW LLC: Magnetocaloric Hydrogen Liquefaction
- IV.B.1 Pacific Northwest National Laboratory: Hydrogen Storage Engineering Center of Excellence
- IV.B.2 Pacific Northwest National Laboratory: Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements
- IV.C.7 Pacific Northwest National Laboratory: H₂ Storage Characterization and Optimization Research Efforts
- IV.D.1 Pacific Northwest National Laboratory: Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks
- IV.D.6 Pacific Northwest National Laboratory: Achieving Hydrogen Storage Goals through High-Strength Fiber Glass
- V.G.4 Pacific Northwest National Laboratory: Multifunctional Catalysis to Synthesize and Utilize Energy Carriers
- V.G.13 Washington State University: Sub Nanometer Sized Clusters for Heterogeneous Catalysis
- VIII.6 Pacific Northwest National Laboratory: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.6 Excelsior Design, Inc.: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- VIII.9 Pacific Northwest National Laboratory: Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure
- X.4 Pacific Northwest National Laboratory: Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

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- VI.3 Breakthrough Technologies Institute: Fuel Cell and Hydrogen Opportunity Center, www.hfcnexus.com
- VII.B.5 Werken: Brentwood Case Study
- VIII.8 Fuel Cell & Hydrogen Energy Association: Fuel Cell & Hydrogen Energy Association Codes and Standards Support

Wisconsin

- V.G.10 University of Wisconsin-Madison: Atomic-Scale Design of Metal and Alloy Catalysts: A Combined Theoretical and Experimental Approach

Foreign Countries**Canada**

- II.B.5 Versa Power Systems, Ltd.: Solid Oxide Based Electrolysis and Stack Technology with Ultra-High Electrolysis Current Density (>3 A/cm²) and Efficiency

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- IV.B.1 Universite du Quebec a Trios-Rivieres: Hydrogen Storage Engineering Center of Excellence
- V.A.1 University of Waterloo: Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design
- V.B.7 Ballard Power Systems: The Effect of Airborne Contaminants on Fuel Cell Performance and Durability
- VI.4 Bowen Liu: U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis
- VII.B.4 Hydrogenics: CSULA Hydrogen Refueling Facility Performance Evaluation and Optimization
- VII.C.2 Powertech: Development of the Hydrogen Station Equipment Performance (HyStEP) Device
- VIII.1 A.V. Tchouvelev & Associates: National Codes and Standards Deployment and Outreach
- VIII.6 CSA Group: Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources
- X.3 Hydrogenics: Maritime Fuel Cell Generator Project
- X.4 Ballard Power Systems: Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

Finland

- VIII.3 VTT: Hydrogen Fuel Quality

France

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Germany

- IV.D.2 BMW: Thermomechanical Cycling of Thin Liner High Fiber Fraction Cryogenic Pressure Vessels Rapidly Refueled by Liquid Hydrogen Pump to 700 Bar

Japan

- III.3 Kobe Steel, LTD.: Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
- VIII.3 Japan Automotive Research Institute: Hydrogen Fuel Quality

South Korea

- III.5 POSCO: Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage

Switzerland

- V.B.4 Paul Scherrer Institute: FC-PAD: Ionomer, GDLs, Interfaces
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United Kingdom

- V.D.3 Johnson Matthey Fuel Cells: Rationally Designed Catalyst Layers for PEMFC Performance Optimization