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

AccerlorMittal

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

ACI Services

III.4 Hydrogen Compression Application of the Linear Motor Reciprocating Compressor (LMRC)

Adaptive Intelligent Systems LLC

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

Adherent Technologies, Inc.

IV.D.5 Optimizing the Cost and Performance of Composite Cylinders for H_2 Storage using a Graded Construction

Advent Technologies Inc.

V.D.5 Facilitated Direct Liquid Fuel Cells with High Temperature Membrane Electrode Assemblies

Air Liquide

III.5 Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage
VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Air Products and Chemicals, Inc.

VII.B.3 Validation of an Advanced High Pressure PEM Electrolyzer and Composite Hydrogen Storage, with Data Reporting, for SunHydro Stations
VII.C.3 Advanced Hydrogen Fueling Station Supply: Tube Trailers
VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

ALD Nanosolutions

V.A.6 Extended Surface Electrocatalyst Development

Ames Laboratory

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

Amsen Technologies LLC

V.C.9 Low-Cost Proton Conducting Membranes for PEM Fuel Cells

Anderson Burton

VII.B.5 Brentwood Case Study

AOC, LLC

IV.D.1 Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks

Ardica Technologies, Inc.

IV.C.12 Low-Cost α-Alane for Hydrogen Storage

Argonne National Laboratory

III.1 Hydrogen Delivery Infrastructure Analysis

III.13 Hydrogen Fueling Station Precooling Analysis

IV.A.1 System Analysis of Physical and Materials-Based Hydrogen Storage

IV.C.9 High-Capacity and Low-Cost Hydrogen-Storage Sorbents for Automotive Applications

V.A.4 Tailored High Performance Low-PGM Alloy Cathode Catalysts

V.A.7 Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports

V.B.1 Fuel Cell-Performance and Durability (FC-PAD) Consortium Overview

V.B.2 FC-PAD Fuel Cell-Performance and Durability Electrocatalysts and Supports

V.B.3 FC-PAD: Electrode Layer Integration

V.B.4 FC-PAD: Ionomer, GDLs, Interfaces

V.B.5 FC-PAD: Modeling, Evaluation, Characterization

V.C.6 Advanced Materials for Fully-Integrated MEAs in AEMFCs

V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications

V.D.3 Rationally Designed Catalyst Layers for PEMFC Performance Optimization

V.F.5 Performance and Durability of Advanced Automotive Fuel Cell Stacks and Systems with Nanostructured Thin Film Catalyst Based Membrane Electrode Assemblies

VII.A.3 Fuel Cell Electric Truck (FCET) Component Sizing

IX.1 Employment Impacts of Hydrogen and Fuel Cell Technologies

IX.2 Life-Cycle Analysis of Water Consumption for Hydrogen Production

IX.3 Impact of Fuel Cell and H_2 Storage Improvements on FCEVs

IX.5 Life Cycle Analysis of Emerging Hydrogen Production Technologies

Arizona State University

II.C.1 High Efficiency Solar Thermochemical Reactor for Hydrogen Production

ASTM International

VIII.3 Hydrogen Fuel Quality

Automated Dynamics

VI.5 Continuous Fiber Composite Electrofusion Coupler

A.V. Tchouvelev & Associates

VIII.1 National Codes and Standards Deployment and Outreach

Ballard Power Systems

V.B.7 The Effect of Airborne Contaminants on Fuel Cell Performance and Durability

X.4 Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

Battelle

V.F.7 Stationary and Emerging Market Fuel Cell System Cost Analysis—Primary Power and Combined Heat and Power Applications

Becht Engineering

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Ben C. Gerwick, Inc.

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

Bevilacqua Knight Inc.

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

Birch Studio

VI.3 Fuel Cell and Hydrogen Opportunity Center, www.hfcnexus.com

Bki

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Bloomfield Automation

VIII.7 NREL Hydrogen Sensor Testing Laboratory

BMW

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

Bowen Liu

VI.4 U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis

Branded by Media

VIII.1 National Codes and Standards Deployment and Outreach

Breakthrough Technologies Institute

VI.3 Fuel Cell and Hydrogen Opportunity Center, www.hfcnexus.com

Brookhaven National Laboratory

V.A.5 Platinum Monolayer Electrocatalysts

V.G.1 Structure and Function in Electrocatalysis of Reactions for Direct Energy Conversion

V.G.2 Catalysis and Electrocatalysis for Advanced Fuel Synthesis: Hydrogen Production and the Water-Gas Shift

Bucknell University

II.C.1 High Efficiency Solar Thermochemical Reactor for Hydrogen Production

California Fuel Cell Partnership

VII.C.6 Station Operational Status System (SOSS) 3.0 Implementation, SOSS 3.1 Upgrade, and Station Map Upgrade Project

California Institute of Technology

II.D.3 Tandem Particle-Slurry Batch Reactors for Solar Water Splitting

IV.B.1 Hydrogen Storage Engineering Center of Excellence

IV.C.8 Design and Synthesis of Materials with High Capacities for Hydrogen Physisorption

California State University, Los Angeles

VII.B.4 CSULA Hydrogen Refueling Facility Performance Evaluation and Optimization

Carnegie Mellon University

V.A.1 Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design

V.A.8 Highly-Accessible Catalysts for Durable High-Power Performance

Center for Transportation and the Environment

IV.D.3 Conformable Hydrogen Storage Pressure Vessel Project

VII.A.4 Fuel Cell Hybrid Electric Delivery Van Project

Central Michigan University

V.G.14 Element Specific Atomic Arrangement of Binary and Ternary Alloy Nanosized Catalysts in As-Prepared and Active State

City of Santa Fe Springs

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Colorado School of Mines

II.C.1 High Efficiency Solar Thermochemical Reactor for Hydrogen Production

III.2 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service

V.A.6 Extended Surface Electrocatalyst Development

V.B.4 FC-PAD: Ionomer, GDLs, Interfaces

V.C.2 Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications

V.C.7 Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells

VI.1 Fuel Cell Membrane Electrode Assembly Manufacturing R&D

Commissariat a l'energie atomique et aux energies alternatives

VIII.3 Hydrogen Fuel Quality

Composite Technology Development, Inc.

IV.D.5 Optimizing the Cost and Performance of Composite Cylinders for H_2 Storage using a Graded Construction

Connecticut Center for Advanced Technology

VI.2 Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies

Cornell University

V.A.8 Highly-Accessible Catalysts for Durable High-Power Performance

CP Industries

III.6 Low Cost Hydrogen Storage at 875 bar Using Steel Liner and Steel Wire Wrap

CSA Group

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Dason Technology

II.F.1 Monolithic Piston-Type Reactor for Hydrogen Production through Rapid Swing of Reforming/Combustion Reactions

DJW Technology, LLC

VI.2 Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies

VI.4 U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis

Drexel University
V.A.8 Highly-Accessible Catalysts for Durable High-Power Performance

e4tech
VI.4 U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis

ElectroChem, Inc.
V.C.11 Novel Nanocomposite Polymer Electrolyte Membranes for Fuel Cells

Element One
VIII.7 NREL Hydrogen Sensor Testing Laboratory

Emerald Energy NW LLC
III.10 Magnetocaloric Hydrogen Liquefaction

Energetics, Inc.
IX.1 Employment Impacts of Hydrogen and Fuel Cell Technologies

Excelsior Design, Inc.
VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Federal Express Corporation
X.5 FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles

Firexplo
VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Florida State University
VII.D.3 Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation

Fluer, Inc.
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Ford Motor Company
IV.B.1 Hydrogen Storage Engineering Center of Excellence
IV.C.10 Hydrogen Adsorbents with High Volumetric Density: New Materials and System Projections
IV.D.1 Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks
VIII.9 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure

Forterra Water Pipe
III.5 Steel Concrete Composite Vessel for 875 bar Stationary Hydrogen Storage

Fuel Cell & Hydrogen Energy Association
VIII.8 Fuel Cell & Hydrogen Energy Association Codes and Standards Support

FuelCell Energy
II.B.5 Solid Oxide Based Electrolysis and Stack Technology with Ultra-High Electrolysis Current Density (>3 A/cm^2) and Efficiency
II.F.2 Reformer-Electrolyzer-Purifier (REP) for Production of Hydrogen [CO_2 Pump]
V.A.3 Innovative Non-PGM Catalysts for High-Temperature PEMFCs
V.C.3 Smart Matrix Development for Direct Carbonate Fuel Cell

Gas Technology Institute

III.7 Compressor-Less Hydrogen Refueling Station Using Thermal Compression

VII.B.2 Performance Evaluation of Delivered Hydrogen Fueling Stations

General Motors Company

IV.B.1 Hydrogen Storage Engineering Center of Excellence

V.A.1 Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design

V.A.8 Highly-Accessible Catalysts for Durable High-Power Performance

V.C.1 New Fuel Cell Membranes with Improved Durability and Performance

V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications

VI.1 Fuel Cell Membrane Electrode Assembly Manufacturing R&D

Georgia Institute of Technology

II.B.6 Economical Production of Hydrogen Through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis

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

VI.1 Fuel Cell Membrane Electrode Assembly Manufacturing R&D

Giner, Inc.

II.B.2 High-Performance, Long-Lifetime Catalysts for Proton Exchange Membrane Electrolysis

II.B.4 High Temperature, High Pressure Electrolysis

V.C.4 Ionomer Dispersion Impact on Fuel Cell and Electrolyzer Performance and Durability

V.C.8 Dimensionally Stable High Performance Membranes

V.D.6 Advanced Catalysts and Membrane Electrode Assemblies (MEAs) for Reversible Alkaline Membrane Fuel Cells

V.E.1 Regenerative Fuel Cell System

Global Engineering and Technology, LLC

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

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

GLWN, Westside Industrial Retention & Expansion Network

VI.4 U.S. Clean Energy Hydrogen and Fuel Cell Technologies: A Competiveness Analysis

GVD Corporation

III.8 Advanced Barrier Coatings for Harsh Environments

GWS Solutions of Tolland, LLC

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Hanson Pressure Pipe

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

Harris Thermal Transfer Products

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

Hawaii Natural Energy Institute

V.B.7 The Effect of Airborne Contaminants on Fuel Cell Performance and Durability

X.1 Hydrogen Energy Systems as a Grid Management Tool

Hexagon Lincoln

IV.B.1 Hydrogen Storage Engineering Center of Excellence

IV.D.1 Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks

IV.D.6 Achieving Hydrogen Storage Goals through High-Strength Fiber Glass

High Energy Coil Reservoirs, LLC

IV.D.3 Conformable Hydrogen Storage Pressure Vessel Project

Humboldt State University

VII.D.3 Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation

Hydrogenics

VII.A.4 Fuel Cell Hybrid Electric Delivery Van Project

VII.B.4 CSULA Hydrogen Refueling Facility Performance Evaluation and Optimization

X.3 Maritime Fuel Cell Generator Project

Hy-Performance Materials Testing, LLC

III.6 Low Cost Hydrogen Storage at 875 bar Using Steel Liner and Steel Wire Wrap

IV.D.8 Innovative Development, Selection and Testing to Reduce Cost and Weight of Materials for BOP Components

Idaho National Laboratory

VII.D.3 Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation

Illinois Institute of Technology

V.A.9 Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs

V.C.3 Smart Matrix Development for Direct Carbonate Fuel Cell

Indiana University-Purdue University Indianapolis

V.D.3 Rationally Designed Catalyst Layers for PEMFC Performance Optimization

IRD Fuel Cells

V.A.1 Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design

V.A.2 Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media

Japan Automotive Research Institute

VIII.3 Hydrogen Fuel Quality

Jet Propulsion Laboratory

IV.B.1 Hydrogen Storage Engineering Center of Excellence

Johns Hopkins University

V.A.7 Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports

V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications

V.G.3 Control of Reactivity in Nanoporous Metal/Ionic Liquid Composite Catalysts

Johnson Matthey Fuel Cells

V.D.3 Rationally Designed Catalyst Layers for PEMFC Performance Optimization

Kobe Steel, LTD.

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

Lawrence Berkeley National Laboratory

II.D.3 Tandem Particle-Slurry Batch Reactors for Solar Water Splitting
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IV.C.4 HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
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V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
V.F.8 A Total Cost of Ownership Model for Design and Manufacturing Optimization of Fuel Cells in Stationary and Emerging Market Applications
VI.1 Fuel Cell Membrane Electrode Assembly Manufacturing R&D

Lawrence Livermore National Laboratory

II.D.2 Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting
III.15 Cryo-Compressed Pathway Analysis (2016)
IV.C.3 HyMARC: Hydrogen Storage Materials Advanced Research Consortium (LLNL Effort)
IV.C.4 HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials
IV.C.5 Improving the Kinetics and Thermodynamics of $Mg(BH_4)_2$ for Hydrogen Storage
IV.C.8 Design and Synthesis of Materials with High Capacities for Hydrogen Physisorption
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Lexidyne, LLC

IX.11 National FCEV and Hydrogen Refueling Station Scenarios

LightSail

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

Linde LLC

IV.D.2 Thermomechanical Cycling of Thin Liner High Fiber Fraction Cryogenic Pressure Vessels Rapidly Refueled by LH_2 Pump to 700 bar
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Los Alamos National Laboratory

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V.A.5 Platinum Monolayer Electrocatalysts
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V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications
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V.F.3 Technical Assistance to Developers
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Mainstream Engineering

VI.1 Fuel Cell Membrane Electrode Assembly Manufacturing R&D
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Materia, Inc.

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

MegaStir Technologies LLC

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage
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Michigan Technological University

V.D.1 High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications

Montana State University

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

N&R Engineering

III.6 Low Cost Hydrogen Storage at 875 bar Using Steel Liner and Steel Wire Wrap

NanoSonic, Inc.

III.12 Cryogenically Flexible, Low Permeability H_2 Delivery Hose
V.C.10 Novel Hydrocarbon Ionomers for Durable Proton Exchange Membranes

National Fuel Cell Research Center

VI.2 Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies

National Institute of Standards and Technology

III.2 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service
IV.C.7 H_2 Storage Characterization and Optimization Research Efforts
V.F.2 Neutron Imaging Study of the Water Transport in Operating Fuel Cells

National Renewable Energy Laboratory

II.B.1 Renewable Electrolysis Integrated System Development and Testing
II.B.2 High-Performance, Long-Lifetime Catalysts for Proton Exchange Membrane Electrolysis
II.C.2 Flowing Particle Bed Solarthermal RedOx Process to Split Water
II.D.1 High-Efficiency Tandem Absorbers for Economical Solar Hydrogen Production
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II.E.1 Biomass to Hydrogen
III.9 Improved Hydrogen Liquefaction through Heisenberg Vortex Separation of Para- and Orthohydrogen
III.11 700 bar Hydrogen Dispenser Hose Reliability Improvement
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V.E.1 Regenerative Fuel Cell System
V.F.4 Fuel Cell Technology Status: Degradation
V.G.17 Hydroxide Conductors for Energy Conversion Devices
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VI.2 Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies
VI.6 In-line Quality Control of PEM Materials
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VII.A.1 Fuel Cell Electric Vehicle Evaluation
VII.A.2 Technology Validation: Fuel Cell Bus Evaluations
VII.B.1 Hydrogen Station Data Collection and Analysis
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VII.D.1 Stationary Fuel Cell Evaluation
VII.D.2 Material Handling Equipment Data Collection and Analysis
VIII.1 National Codes and Standards Deployment and Outreach
VIII.7 NREL Hydrogen Sensor Testing Laboratory
IX.7 Sustainability Analysis of Hydrogen Supply and Stationary Fuel Cell Systems Using the Hydrogen Regional Sustainability (HyReS) Framework

National Renewable Energy Laboratory (Continued)

IX.8 Evaluation of Technology Status Compared to Program Targets

IX.9 Expanded Capabilities for the Hydrogen Financial Analysis Scenario Tool

IX.11 National FCEV and Hydrogen Refueling Station Scenarios

NEI Corporation

V.C.11 Novel Nanocomposite Polymer Electrolyte Membranes for Fuel Cells

New England Wire Technologies, Inc.

III.12 Cryogenically Flexible, Low Permeability H_2 Delivery Hose

Nissan Technical Center, North America

V.A.9 Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs

V.C.2 Advanced Hybrid Membranes for Next Generation PEMFC Automotive Applications

Northeastern University

II.B.3 High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes

V.A.3 Innovative Non-PGM Catalysts for High-Temperature PEMFCs

Northwestern University

II.C.1 High Efficiency Solar Thermochemical Reactor for Hydrogen Production

NOV Fiberglass Systems

VI.5 Continuous Fiber Composite Electrofusion Coupler

Nuvera Fuel Cells

X.4 Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

Oak Ridge National Laboratory

III.2 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service

III.3 Vessel Design and Fabrication Technology for Stationary High-Pressure Hydrogen Storage

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

III.6 Low Cost Hydrogen Storage at 875 bar Using Steel Liner and Steel Wire Wrap

IV.D.5 Optimizing the Cost and Performance of Composite Cylinders for H_2 Storage using a Graded Construction

IV.D.7 Melt Processable PAN Precursor for High Strength, Low-Cost Carbon Fibers (Phase II)

V.A.1 Non-Precious Metal Fuel Cell Cathodes: Catalyst Development and Electrode Structure Design

V.A.4 Tailored High Performance Low-PGM Alloy Cathode Catalysts

V.A.7 Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports

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V.B.5 FC-PAD: Modeling, Evaluation, Characterization

V.C.7 Advanced Ionomers and MEAs for Alkaline Membrane Fuel Cells

V.F.1 New Fuel Cell Materials: Characterization and Method Development

V.G.12 Fundamentals of Catalysis and Chemical Transformations

Ohio Fuel Cell Coalition

VI.2 Clean Energy Supply Chain and Manufacturing Competitiveness Analysis for Hydrogen and Fuel Cell Technologies

Oregon State University

II.E.3 Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass

IV.B.1 Hydrogen Storage Engineering Center of Excellence

Pacific Northwest National Laboratory

II.E.3 Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass

II.F.1 Monolithic Piston-Type Reactor for Hydrogen Production through Rapid Swing of Reforming/Combustion Reactions

III.10 Magnetocaloric Hydrogen Liquefaction

IV.B.1 Hydrogen Storage Engineering Center of Excellence

IV.B.2 Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements

IV.C.7 H_2 Storage Characterization and Optimization Research Efforts

IV.D.1 Enhanced Materials and Design Parameters for Reducing the Cost of Hydrogen Storage Tanks

IV.D.6 Achieving Hydrogen Storage Goals through High-Strength Fiber Glass

V.G.4 Multifunctional Catalysis to Synthesize and Utilize Energy Carriers

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

VIII.9 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure

X.4 Demonstration of Fuel Cell Auxiliary Power Units (APUs) to Power Transport Refrigeration Units (TRUs) in Refrigerated Trucks

Pajarito Powder

II.B.6 Economical Production of Hydrogen through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis

V.A.2 Development of PGM-free Catalysts for Hydrogen Oxidation Reaction in Alkaline Media

V.A.3 Innovative Non-PGM Catalysts for High-Temperature PEMFCs

Paul Scherrer Institute

V.B.4 FC-PAD: Ionomer, GDLs, Interfaces

PDC Machines

III.14 H2FIRST—Consolidation

The Pennsylvania State University

II.B.3 High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes

II.E.1 Biomass to Hydrogen

pH Matter, LLC

V.E.1 Regenerative Fuel Cell System

Plug Power

X.2 Ground Support Equipment Demonstration

X.5 FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles

POSCO

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

Powertech

VII.C.2 Development of the Hydrogen Station Equipment Performance (HyStEP) Device

PPG Industries

IV.D.6 Achieving Hydrogen Storage Goals through High-Strength Fiber Glass

Proton OnSite

II.B.3 High Performance Platinum Group Metal Free Membrane Electrode Assemblies through Control of Interfacial Processes

II.B.6 Economical Production of Hydrogen through Development of Novel, High Efficiency Electrocatalysts for Alkaline Membrane Electrolysis

II.B.7 New Approaches to Improved PEM Electrolyzer Ion Exchange Membranes

VII.B.3 Validation of an Advanced High Pressure PEM Electrolyzer and Composite Hydrogen Storage, with Data Reporting, for SunHydro Stations

VII.B.5 Brentwood Case Study

VIII.6 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources

Purdue University

V.A.7 Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports

RCF Economic and Financial Consulting, Inc.

IX.1 Employment Impacts of Hydrogen and Fuel Cell Technologies

Redox Power Systems

V.D.4 Affordable, High Performance, Intermediate Temperature Solid Oxide Fuel Cells

Rensselaer Polytechnic University

V.C.6 Advanced Materials for Fully-Integrated MEAs in AEMFCs

V.C.8 Dimensionally Stable High Performance Membranes

SAE International

VIII.3 Hydrogen Fuel Quality

Sandia National Laboratories

II.C.1 High Efficiency Solar Thermochemical Reactor for Hydrogen Production

II.E.1 Biomass to Hydrogen

III.2 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service

IV.C.1 HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials

IV.C.2 Hydrogen Storage Materials Advanced Research Consortium: Sandia Effort

IV.C.4 HyMARC: A Consortium for Advancing Solid-State Hydrogen Storage Materials

IV.C.5 Improving the Kinetics and Thermodynamics of $Mg(BH_4)_2$ for Hydrogen Storage

IV.D.8 Innovative Development, Selection and Testing to Reduce Cost and Weight of Materials for BOP Components

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VII.A.4 Fuel Cell Hybrid Electric Delivery Van Project

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V.D.3 Rationally Designed Catalyst Layers for PEMFC Performance Optimization

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Virginia Clean Cities at James Madison University

VI.3 Fuel Cell and Hydrogen Opportunity Center, www.hfcnexus.com

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