Project Listings by Organization

Section Key

H2F	Hydrogen Fuel R&D
FC	Fuel Cell R&D
INS	Infrastructure and Systems R&D
SCS	Safety, Codes and Standards

3M Company

FC Highly Active, Durable, and Ultra-Low-Platinum-Group-Metal Nanostructured Thin Film Oxygen Reduction Reaction Catalysts and Supports

FC Novel Ionomers and Electrode Structures for Improved Polymer Electrolyte Membrane Fuel Cell Electrode Performance at Low Platinum Group Metal Loadings

INS Low-Cost, High-Performance Catalyst Coated Membranes for Proton Exchange Membrane Water Electrolyzers

Advent Technologies, Inc.

FC Facilitated Direct Liquid Fuel Cells with High-Temperature Membrane Electrode Assemblies

Argonne National Laboratory

H2F HydroGEN Seedling: Platinum-Group-Metal-Free Oxygen Evolution Reaction Catalysts for Proton Exchange Membrane Electrolyzers

H2F System Analysis of Physical and Materials-Based Hydrogen Storage

FC Tailored High-Performance Low-Platinum-Group-Metal Alloy Cathode Catalysts

FC Lab Call FY19: Polymer Electrolyte Fuel Cell Electrode Structures with Encased Catalysts to Eliminate Ionomer Adsorption on Catalytic Sites

FC ElectroCat (Electrocatalysis Consortium)

FC Highly Efficient and Durable Cathode Catalyst with Ultralow Platinum Loading through Synergetic Platinum/Platinum-Group-Metal-Free Catalytic Interaction

FC Performance and Durability of Advanced Automotive Fuel Cell Stacks and Systems with State-of-the-Art d-PtCo/C Cathode Catalyst in Membrane Electrode Assemblies

INS Analysis of Fuel Cells for Trucks

INS Cost Benefit Analysis of Technology Improvements in Medium- and Heavy-Duty Fuel Cell Vehicles

INS Analysis of Cost Impacts of Integrating Advanced On-Board Storage Systems with Hydrogen Delivery

INS Hydrogen Demand Analysis for H2@Scale

Arizona State University

H2F HydroGEN Seedling: Mixed Ionic Electronic Conducting Quaternary Perovskites: Materials by Design for Solar Thermochemical Hydrogen

Brookhaven National Laboratory

FC Platinum Monolayer Electrocatalysts

Carnegie Mellon University

FC ElectroCat: Advanced Platinum-Group-Metal-Free Cathode Engineering for High Power Density and Durability

Center for Transportation and the Environment

INS Fuel Cell Hybrid Electric Delivery Van

Clemson University

INS Laser 3-D Printing of Highly Compacted Protonic Ceramic Electrolyzer Stack

Colorado School of Mines

H2F HydroGEN Seedling: Accelerated Discovery of Solar Thermochemical Hydrogen Production Materials via High-Throughput Computational and Experimental Methods

Drexel University

FC Polymerized Ionic Liquid Block Copolymer/Ionic Liquid Composite Ionomers for High Current Density Performance

Electricore

INS Innovative Advanced Hydrogen Mobile Fueler

Ford Motor Company

FC Vapor Deposition Process for Engineering of Dispersed Polymer Electrolyte Membrane Fuel Cell Oxygen Reduction Reaction Pt/NbOx/C Catalysts

FuelCell Energy, Inc.

H2F Proton-Conducting Ceramic Electrolyzers for High-Temperature Water Splitting

INS Modular Solid Oxide Electrolysis Cell System for Efficient Hydrogen Production at High Current Density

General Engineering & Research, LLC

INS Low-Cost Magnetocaloric Materials Discovery

General Motors

FC Highly Accessible Catalysts for Durable High-Power Performance

FC Durable High-Power Membrane Electrode Assemblies with Low Platinum Loading

Georgia Institute of Technology

FC Durable, High-Performance Unitized Reversible Fuel Cells Based on Proton Conductors

Giner ELX, Inc.

INS Electrochemical Compression

Giner, Inc.

H2F High-Temperature Alkaline Water Electrolysis

FC ElectroCat (Electrocatalysis Consortium)

FC Advanced Materials for Fully-Integrated Membrane Electrode Assemblies in Anion Exchange Membrane Fuel Cells

FC Lab Call FY18 (Membrane): High Performing and Durable Pyrophosphate-Based Composite Membranes for Intermediate-Temperature Fuel Cells

FC Membrane Working Group

FC FC-PAD: Fuel Cell Performance and Durability Consortium

FC Lab Call FY18 (Reversible Fuel Cell): Microstructured Electrodes and Diffusion Layers for Enhanced Transport in Reversible Fuel Cells

FC Lab Call FY19: Low-Cost Gas Diffusion Layer Materials and Treatments for Durable High-Performance Polymer Electrolyte Membrane Fuel Cells

SCS Fuel Quality Assurance R&D and Impurity Testing in Support of Codes and Standards

Mainstream Engineering

INS In-Line Quality Control of Polymer Electrolyte Membrane Materials

Nanosonic, Inc.

FC FY17 SBIR II Release 1: Novel Hydrocarbon Ionomers for Durable Polymer Electrolyte Membranes

INS Cryogenically Flexible, Low Permeability Hydrogen Delivery Hose

National Renewable Energy Laboratory

H2F Industrially Scalable Waste CO2 Reduction to Useful Chemicals and Fuels

H2F BioHydrogen (BioH2) Consortium to Advance Fermentative Hydrogen Production

H2F HydroGEN Overview: A Consortium on Advanced Water-Splitting Materials

H2F Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements

H2F HyMARC: A Consortium for Advancing Hydrogen Storage Materials

H2F HyMARC Seedling: Atomic Layer Deposition Synthesis of Novel Nanostructured Metal Borohydrides

FC Advanced Ionomers and Membrane Electrode Assemblies for Alkaline Membrane Fuel Cells

FC Lab Call FY18 (Membrane): Spirocyclic Anion Exchange Membranes for Improved Performance and Durability

FC Membrane Working Group

FC Lab Call FY18 (Reversible Fuel Cell): Bipolar Membrane Development to Enable Regenerative Fuel Cells

INS Dispenser Reliability

INS Membrane Electrode Assembly Manufacturing R&D

INS Material-Process-Performance Relationships in Polymer Electrolyte Membrane Catalyst Inks and Coated Layers

INS Fuel Cell Bus Evaluations

INS Hydrogen Station Data Collection and Analysis

INS Optimal Stationary Fuel Cell Integration and Control (Energy Dispatch Controller)

INS H2@Scale: Experimental Characterization of Durability of Advanced Electrolyzer Concepts in Dynamic Loading

INS Market Segmentation Analysis of Medium- and Heavy-Duty Trucks with a Fuel Cell Emphasis

INS H2@Scale Analysis

INS Energy Storage Analysis

SCS NREL Hydrogen Sensor Testing Laboratory

Northeastern University

H2F HydroGEN Seedling: Developing Novel Platinum-Group-Metal-Free Catalysts for Alkaline Hydrogen and Oxygen Evolution Reactions

FC Developing Platinum-Group-Metal-Free Catalysts for Oxygen Reduction Reaction in Acid: Beyond the Single Metal Site

Northwestern University

H2F HydroGEN Seedling: Degradation Characterization and Modeling of a New Solid Oxide Electrolysis Cell Utilizing Accelerated Life Testing

H2F HydroGEN Seedling: Transformative Materials for High-Efficiency Thermochemical Production of Solar Fuels

FC Efficient Reversible Operation and Stability of Novel Solid Oxide Cells

Oak Ridge National Laboratory

H2F Novel Plasticized Melt Spinning Process of Polyacrylonitrile Fibers Based on Task-Specific Ionic Liquids

Oregon State University

H2F Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass

Pacific Northwest National Laboratory

H2F Materials Challenges for Cryogenic Hydrogen Storage Technologies

FC ElectroCat: Highly Active and Durable Platinum-Group-Metal-Free Oxygen Reduction Reaction Electrocatalysts through the Synergy of Active Sites

FC Lab Call FY19: Solid Phase Processing for Reduced Cost and Improved Efficiency of Bipolar Plates

INS Magnetocaloric Hydrogen Liquefaction

SCS Hydrogen Safety Panel, Safety Knowledge Tools, and First Responder Training Resources

SCS H-Mat Overview: Polymers

Pajarito Powder

FC Active and Durable Platinum-Group-Metal-Free Cathodic Electrocatalysts for Fuel Cell Application

Pennsylvania State University

H2F Developing a New Polyolefin Precursor for Low-Cost, High-Strength Carbon Fiber

FC Advanced Anion Exchange Membranes with Tunable Water Transport for Platinum-Group-Metal-Free Anion Exchange Membrane Fuel Cells

pH Matter LLC

FC FY18 SBIR Phase II Release 1: Multi-Functional Catalyst Support

Proton Energy Systems d/b/a Nel Hydrogen

H2F HydroGEN Seedling: High Efficiency Proton Exchange Membrane Water Electrolysis Enabled by Advanced Catalysts, Membranes, and Processes

H2F HydroGEN: Benchmarking Advanced Water Splitting Technologies: Best Practices in Materials Characterization

Rensselaer Polytechnic Institute

FC Cyclic Olefin Copolymer-Based Alkaline Exchange Polymers and Reinforced Membranes

Rutgers University

H2F HydroGEN Seedling: Best-in-Class Platinum-Group-Metal-Free Catalyst Integrated Tandem Junction Photoelectrochemical Water Splitting Devices

Saint-Gobain

H2F HydroGEN Seedling: Development of Durable Materials for Cost Effective Advanced Water Splitting Utilizing All Ceramic Solid Oxide Electrolyzer Stack Technology

Sandia National Laboratories

H2F HyMARC: A Consortium for Advancing Hydrogen Storage Materials

FC Lab Call FY19: Electrode Ionomers for High Temperature Fuel Cells

INS H-Mat Overview: Steels

INS Metal Hydride Compression

INS Maritime Fuel Cell Generator Project

INS Hydrogen Stations for Urban Sites

SCS R&D for Safety, Codes and Standards: Materials and Components Compatibility

SCS R&D for Safety, Codes and Standards: Hydrogen Behavior

SCS Hydrogen Quantitative Risk Assessment

Southwest Research Institute

INS Hydrogen Compression Application of the Linear Motor Reciprocating Compressor

Stanford University

H2F HydroGEN Seedling: Protective Catalyst Systems on III-V and Si-Based Semiconductors for Efficient, Durable Photoelectrochemical Water Splitting Devices

Strategic Analysis, Inc.

H2F Analysis of Advanced Hydrogen Production Pathways

H2F Hydrogen Storage Cost Analysis

FC Fuel Cell Systems Analysis

TreadStone Technologies, Inc.

FC Novel Structured Metal Bipolar Plates for Low-Cost Manufacturing

United Technologies Research Center

H2F HydroGEN Seedling: Thin-Film, Metal-Supported High-Performance, and Durable Proton-Solid Oxide Electrolyzer Cell

FC High-Performance Non-Platinum-Group-Metal Transition Metal Oxide Oxygen Reduction Reaction Catalysts of Polymer Electrolyte Membrane Fuel Cells

FC High-Performance Polymer Electrolyte Fuel Cell Electrode Structures

University of Colorado Boulder

H2F HydroGEN Seedling: Computationally Accelerated Discovery and Experimental Demonstration of High-Performance Materials for Advanced Solar Thermochemical Hydrogen Production

University of Connecticut

H2F HydroGEN Seedling: Proton-Conducting Solid Oxide Electrolysis Cells for Large-Scale Hydrogen Production at Intermediate Temperatures

University of Hawaii

H2F HydroGEN Seedling: Novel Chalcopyrites For Advanced Photoelectrochemical Water Splitting

H2F HyMARC Seedling: Development of Magnesium Boride Etherates as Hydrogen Storage Materials

University of Kansas

FC Stationary Direct Methanol Fuel Cells Using Pure Methanol

University of Kentucky Center for Applied Energy Research

H2F Precursor Processing Development for Low-Cost, High-Strength Carbon Fiber for Composite Overwrapped Pressure Vessel Applications

University of Michigan

H2F HydroGEN Seedling: Monolithically Integrated Thin-Film/Silicon Tandem Photoelectrodes for High Efficiency and Stable Photoelectrochemical Water Splitting

H2F HyMARC Seedling: Optimized Hydrogen Adsorbents via Machine Learning and Crystal Engineering

Vanderbilt University

FC Fuel Cell Membrane Electrode Assemblies with Platinum-Group-Metal-Free Nanofiber Cathodes

FC Composite Polymer Electrolyte Membranes from Electrospun Crosslinkable Poly(Phenylene Sulfonic Acid)s

FC Fuel Cell Membrane Electrode Assemblies with Ultra-Low-Platinum Nanofiber Electrodes

Washington University in St. Louis

FC Corrosion-Resistant Non-Carbon Electrocatalyst Supports for Polymer Electrolyte Fuel Cells

West Virginia University

H2F HydroGEN Seedling: Intermediate Temperature Proton-Conducting Solid Oxide Electrolysis Cells with Improved Performance and Delivery

Xergy Inc.

FC Novel Non-Perfluorosulfonic Acid Proton Exchange Membrane for Fuel Cell Application