

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM365827

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
Bloom Energy Corporation		12/15/2015	CORPORATION: DELAWARE
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	U.S. Bank National Association, as Collateral Agent		
<b>Street Address:</b>	633 West Fifth Street, 24th Floor		
<b>City:</b>	Los Angeles		
<b>State/Country:</b>	CALIFORNIA		
<b>Postal Code:</b>	90071		
<b>Entity Type:</b>	CORPORATION: MINNESOTA		
<b>PROPERTY NUMBERS Total: 14</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Serial Number:</b>	77388058	BE	
<b>Serial Number:</b>	86379783	BLOOM BOX	
<b>Serial Number:</b>	85266176	BLOOM ELECTRONICS	
<b>Serial Number:</b>	77005327	BLOOM ENERGY	
<b>Serial Number:</b>	77950803	BLOOM ENERGY	
<b>Serial Number:</b>	85546532	BLOOM ENERGY MY ENERGY	
<b>Serial Number:</b>	86215135	BLOOMCONNECT	
<b>Serial Number:</b>	77005348	BLOOMENERGY	
<b>Serial Number:</b>	78905859	ENERGY SERVER	
<b>Serial Number:</b>	78825024	GRID TO GO	
<b>Serial Number:</b>	86017104	ION AMERICA	
<b>Serial Number:</b>	77298195	POWDER TO POWER	
<b>Serial Number:</b>	85546526	THE BLOOM ENERGY FOUNDATION	
<b>Serial Number:</b>	85546516	THE BLOOM FOUNDATION	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	6504936811		
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>			
<b>Phone:</b>	650-461-6125		

CH \$365.00 77388058

**Email:** qlu@wsgr.com  
**Correspondent Name:** WSGR, c/o Qui Lu, Senior Paralegal  
**Address Line 1:** 650 Page Mill Road  
**Address Line 2:** FH2-1 P12  
**Address Line 4:** Palo Alto, CALIFORNIA 94304

**ATTORNEY DOCKET NUMBER:** 26697.083

**NAME OF SUBMITTER:** Qui Lu

**SIGNATURE:** /Qui Lu/

**DATE SIGNED:** 12/15/2015

**Total Attachments: 37**

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NOTICE OF SECURITY INTEREST IN TRADEMARKS AND PATENTS

This NOTICE OF SECURITY INTEREST IN TRADEMARKS AND PATENTS, effective as of December 15, 2015 (“**Notice**”) is made by Bloom Energy Corporation, a Delaware corporation (the “**Grantor**”), in favor of U.S. Bank National Association, not in its individual capacity but solely as Collateral Agent (the “**Collateral Agent**”) for its own benefit and the benefit of the other Secured Parties (as defined in the Security Agreement referred to below), in consideration of the mutual covenants contained herein and benefits to be derived herefrom.

W I T N E S S E T H:

WHEREAS, Grantor is a party to a Security Agreement, dated as of December 15, 2015, by and among Bloom Energy Corporation, the Guarantors from time to time party thereto and U.S. Bank National Association for the benefit of the Collateral Agent and the Secured Parties (as amended, modified, supplemented or restated and in effect from time to time, the “**Security Agreement**”);

WHEREAS, pursuant to the Security Agreement, Grantor has executed and delivered this Notice for the purpose of recording and confirming the grant of the security interest of the Collateral Agent in the Trademark Collateral and Patent Collateral (each as defined below) with the United States Patent and Trademark Office;

NOW, THEREFORE, in consideration of the mutual conditions and agreements set forth herein and in the Security Agreement, and for good and valuable consideration, the receipt of which is hereby acknowledged, the Grantor and the Collateral Agent, on its own behalf and on behalf of the other Secured Parties (and each of their respective successors or assigns), hereby agree as follows:

SECTION 1 Defined Terms. Unless otherwise defined herein, terms defined in the Security Agreement and used herein have the meaning given to them in the Security Agreement.

SECTION 2 Grant of Security Interest. In furtherance and as confirmation of the Security Interest granted by the Grantor to the Collateral Agent (for its own benefit and the benefit of the other Secured Parties) under the Security Agreement, and as further security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby ratifies such Security Interest and grants to the Collateral Agent (for its own benefit and the benefit of the other Secured Parties) a continuing security interest, in all of the present and future right, title and interest of the Grantor in, to and under the following property, and each item thereof, whether now owned or existing or hereafter acquired or arising, together with all products, proceeds, substitutions, and accessions of or to any of the following property (collectively, the “**Trademark and Patent Collateral**”):

- (a) All Trademarks, including, without limitation, the trademark registrations and trademark applications set forth on Exhibit A attached hereto (collectively, “**Trademarks**”);
- (b) All Patents, including, without limitation, the patents and patent applications set forth on Exhibit B attached hereto (collectively, “**Patents**”);
- (c) All Patent Licenses and Trademark Licenses (collectively, “**Licenses**”) and all income, royalties, damages and payments now and hereafter due and/or payable under and with respect to the Trademarks and Patents, including, without limitation, payments under all Licenses entered into in connection therewith and damages and payments for past or future infringements, misappropriations or dilutions thereof;

(d) The right to sue for past, present and future infringements, misappropriations and dilutions of any of the Trademarks and Patents; and

(e) All of the Grantor's rights corresponding to any of the foregoing throughout the world.

Notwithstanding the foregoing, (i) no Trademark shall be included in the Trademark and Patent Collateral to the extent that the grant of a security interest in such Trademark would result in, permit or provide grounds for the cancellation or invalidation of such Trademark and (ii) in no event shall the Trademark and Patent Collateral include any Excluded Assets.

SECTION 3 Intent. This Notice is being executed and delivered by the Grantor for the purpose of recording and confirming the grant of the security interest of the Collateral Agent in the Trademark and Patent Collateral with the United States Patent and Trademark Office. It is intended that the security interest granted pursuant to this Notice is granted in conjunction with, and not in addition to or limitation of, the Security Interest granted to the Collateral Agent, for its own benefit and the benefit of the other Secured Parties, under the Security Agreement. All provisions of the Security Agreement shall apply to the Trademark and Patent Collateral, and such provisions are hereby incorporated herein by reference. The Collateral Agent shall have the same rights, remedies, powers, privileges and discretions with respect to the security interests created in the Trademark and Patent Collateral as in all other Collateral. In the event of a conflict between this Notice and the Security Agreement, the terms of the Security Agreement shall control.

SECTION 4. Recordation. The Grantor authorizes and requests that the Commissioner for Patents and the Commissioner for Trademarks and any other applicable government officer record this Notice.

SECTION 5. Governing Law. THIS NOTICE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

SECTION 6. Termination; Release of Trademark and Patent Collateral. Upon termination of the Security Interest in the Trademark and Patent Collateral in accordance with the Security Agreement, the Collateral Agent shall execute, acknowledge, and deliver to the Grantor, an instrument in writing in recordable form releasing the collateral pledge, grant, lien and security interest in the Trademark and Patent Collateral under this Notice. Any execution and delivery of termination statements, releases or other documents pursuant to this Section 5 shall be without recourse to, or warranty by, the Collateral Agent or any other Secured Party.

SECTION 7. Concerning the Collateral Agent. It is expressly understood and agreed that U.S. Bank National Association is executing this Notice solely in its capacity as Collateral Agent as appointed pursuant to the Indenture, and shall be entitled to all of the rights, privileges, immunities and protections under the Indenture as if such rights, privileges, immunities and protections were set forth herein.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Grantors and the Collateral Agent have caused this Notice to be executed by their duly authorized officers as of the date first above written.

**GRANTOR:**

BLOOM ENERGY CORPORATION

By:  \_\_\_\_\_

Name: Randy Furr

Title: Chief Financial Officer and Secretary

*[Signature Page to Notice of Security Interest in Trademarks and Patents]*

**TRADEMARK**  
**REEL: 005689 FRAME: 0255**

**COLLATERAL AGENT:**

U.S. BANK NATIONAL ASSOCIATION, not in its individual capacity but solely as Collateral Agent

By: 

Name: Bradley E. Scarbrough

Title: Vice President

*[Signature Page to Notice of Security Interest in Trademarks and Patents]*

**TRADEMARK  
REEL: 005689 FRAME: 0256**

**EXHIBIT A**

**U.S. Federal Trademark Registrations and Applications**

<b>Trademark</b>	<b>Application No.</b>	<b>Application Date</b>	<b>Registration No.</b>	<b>Registration Date</b>
BE	77388058	2/4/08	4272466	1/8/13
BLOOM BOX	86379783	8/28/14		
BLOOM ELECTRONICS	85266176	3/14/11	4246657	11/20/12
BLOOM ENERGY	77005327	9/22/06	3673390	8/25/09
BLOOM ENERGY	77950803	3/4/10	4122292	4/3/12
BLOOM ENERGY MY ENERGY	85546532	2/17/12		
BLOOMCONNECT	86215135	3/7/14		
BLOOMENERGY	77005348	9/22/06	3362904	1/1/08
ENERGY SERVER	78905859	6/12/06	3677943	9/1/09
GRID TO GO	78825024	2/28/06	3532547	11/11/08
ION AMERICA	86017104	7/23/13		
POWDER TO POWER	77298195	10/08/07	3620161	5/12/09
THE BLOOM ENERGY FOUNDATION	85546526	2/17/12		
THE BLOOM FOUNDATION	85546516	2/17/12		



## EXHIBIT B

### United States Patents and Patent Applications

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	60/357,636	2/20/2002			Solid Oxide Fuel Cell and System
US	60/377,199	5/3/2002			Solid Oxide Regenerative Fuel Cell for Airplane Power Generation and Storage
US	10/369,103	2/20/2003			A Temperature Sensitive Absorption Oxygen Enrichment System
US	10/300,021	11/20/2002	7,067,208	6/27/2006	A Load Matched Power Generation System Including A Solid Oxide Fuel Cell and A Heat Pump and An Optional Turbine
US	10/368,425	2/20/2003			A Fuel Water Vapor Replenishment System For A Fuel Cell
US	10/299,863	11/20/2002	6,854,688	2/15/2005	Solid Oxide Regenerative Fuel Cell for Airplane Power Generation and Storage
US	10/394,203	3/24/2003	6,924,053	8/2/2005	Solid Oxide Fuel Cell with Enhanced Fuel Processing
US	60/420,259	10/23/2002			Solid Oxide Regenerative Fuel Cell
US	10/394,202	3/24/2003	7,045,238	5/16/2006	SORFC Power and Oxygen Generation Method and System
US	10/368,493	2/20/2003	7,045,237	5/16/2006	Textured Electrolyte for a Solid Oxide Fuel Cell
US	10/368,348	2/20/2003	7,255,956	8/14/2007	Environmentally Tolerant Anode Catalyst for a Solid Oxide Fuel Cell
US	10/369,322	2/20/2003	7,144,651	12/5/2006	High-temperature Compliant Compression Seal
US	10/369,133	2/20/2003	7,135,248	11/14/2006	Metal Felt Current Conductor and Gas Flow Distributor
PCT	PCT /US03/04989	2/20/2003			Solid Oxide Fuel Cell and System
PCT	PCT /US03/04808	2/20/2003			Solid Oxide Fuel Cell and System
US	10/822,707	4/13/2004			Offset Interconnect for a Solid Oxide Fuel Cell and Method of Making Same
US	60/461,190	4/9/2003			Co-production of Hydrogen and Electricity with Valuable Byproducts in a Solid Oxide Electrochemical System

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
PCT	PCT /US03/13151	4/29/2003			Solid Oxide Regenerative Fuel Cell for Airplane Power Generation and Storage
US	10/446,704	5/29/2003	7,482,078	1/27/2009	Co-production of Hydrogen and Electricity in a High Temperature Electrochemical System
US	10/428,804	5/5/2003	6,908,702	6/21/2005	Fuel Cell For Airship Power Generation And Heating
US	10/465,636	6/20/2003	7,201,979	4/10/2007	SORFC System and Method with an Exothermic Net Electrolysis Reaction
US	10/635,446	8/7/2003	6,821,663	11/23/2004	Solid Oxide Regenerative Fuel Cell
US	10/658,275	9/10/2003	7,150,927	12/19/2006	SORFC System with Non-Noble Metal Electrode Compositions
US	10/653,240	9/3/2003	7,364,810	4/29/2008	Combined Energy Storage and Fuel Generation with Reversible Fuel Cell
PCT	PCT/ US03/29127	10/15/2003			Solid Oxide Regenerative Fuel Cell
US	60/537,899	1/22/2004			High Temperature Fuel Cell System And Method Of Operating Same
PCT	PCT -US04/08741	3/23/2004			Solid Oxide Regenerative Fuel Cell with Selective Anode Tail Gas Circulation
PCT	PCT – US04/08742	3/23/2004			SORFC Power and Oxygen Generation Method and System
US	60/552,202	3/12/2004			High Temperature Fuel Cell System with Improved Balance of Plant Efficiency
US	10/866,238	6/14/2004	7,575,822	8/18/2009	Optimizing Efficiency and/or Cost of Generated Fuel in Combined Energy Storage and Fuel Generation with Reversible Fuel Cell
PCT	PCT – US04/08745	3/23/2004			SORFC System and Method With an Exothermic Net Electrolysis Reaction
PCT	PCT – US04/10818	4/7/2004			Co-production of Hydrogen and Electricity in a High Temperature Electrochemical System
US	10/853,194	5/26/2004			Fuel Cell For Airship Power Generation And Heating
PCT	PCT – US04/13895	5/5/2004			Fuel Cell For Airship Power Generation And Heating
US	60/602,891	8/20/2004			Nanostructured Fuel Cell Electrode

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	60/608,902	9/13/2004			Hydrocarbon Gas Carbon Nanotube Storage Media
PCT	PCT-US2004/027347	8/24/2004			Combined Energy Storage and Fuel Generation with Reversible Fuel Cell
US	11/124,120	5/9/2005			High temperature fuel cell system with integrated heat exchanger network
US	11/095,552	4/1/2005	7,514,166	4/7/2009	Periodic reduction of SOFC anodes to extend stack lifetime
PCT	PCT- US04/29458	9/10/2004			SORFC System with Non-Noble Metal Electrode Compositions
PCT	PCT- US04/41082	12/9/2004			High Temperature Fuel Cell System And Method Of Operating Same
US	11/002,681	12/3/2004	7,422,810	9/9/2008	High Temperature Fuel Cell System And Method Of Operating Same
US	11/125,267	5/10/2005	7,700,210	4/20/2010	Increasing Thermal Dissipation of Fuel Cell Stacks under Partial Electrical Load
US	60/664,294	3/23/2005			Perovskite Materials with Combined Pr, La, Sr, "A" Site Doping for Improved Cathode Durability
US	60/792,614	4/18/2006			Compliant Cathode Contact Materials
US	60/698,468	7/13/2005			Dense Cermet Interconnection Material
US	60/660,515	3/10/2005			Fuel Cell Stack With Internal Fuel Manifold Configuration
US	60/666,304	3/30/2005			Solid Oxide Fuel Cell with Improved Electrode Composition
US	11/100,489	4/7/2005	7,524,572	4/28/2009	Integrated Reformer-Combustor-Stack unit containing catalyst coated corrugated foil for a solid oxide fuel cell system
US	11/076,102	3/9/2005			Geometric feature driven flow equalization in fuel cell stack gas flow separator
US	11/236,737	9/28/2005	7,785,744	8/31/2010	Fuel Cell Water Purification System and Method
US	11/028,506	1/4/2005			Fuel cell system with independent reformer temperature control
US	11/188,118	7/25/2005			Gas separation method and apparatus using partial pressure swing adsorption
PCT	PCT/US05/ 06164	2/25/2005			Offset Interconnect for a Solid Oxide Fuel Cell and Method of Making Same

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
PCT	PCT/US05/ 10671	3/31/2005			Optimizing Efficiency and/or Cost of Generated Fuel in Combined Energy Storage and Fuel Generation with Reversible Fuel Cell
US	11/207,018	8/19/2005			Nanostructured fuel cell electrode
PCT	PCT/US05/ 029747	8/19/2005			Nanostructured fuel cell electrode
US	11/138,292	5/27/2005			Solid Oxide Fuel Cell with Enhanced Fuel Processing
US	11/274,928	11/16/2005	8,097,374	1/17/2012	Cascaded fuel cell reactants
US	11/188,123	7/25/2005	7,520,916	4/21/2009	Partial pressure swing adsorption system for providing hydrogen to a vehicle fuel cell
US	60/701,976	7/25/2005			Fuel cell system with partial recycling of anode exhaust
US	60/701,977	7/25/2005			Fuel cell system with electrochemical anode exhaust recycling
US	11/188,120	7/25/2005	7,591,880	9/22/2009	Fuel cell anode exhaust fuel recovery by adsorption
PCT	PCT/US05/32138	9/9/2005			Hydrocarbon gas carbon nanotube storage media
US	11/221,983	9/9/2005			Hydrocarbon gas carbon nanotube storage media
US	60/809,395	5/31/2006			Dense cermet interconnection material
US	11/326,400	1/6/2006			Solid oxide fuel cell system for aircraft power, heat, water, and oxygen generation
US	11/641,942	12/20/2006	7,393,603	7/1/2008	Methods for Fuel Cell System Optimization
US	11/404,760	4/17/2006	7,599,760	10/6/2009	Online Configurable Control System for Fuel Cells
US	60/808,113	5/25/2006			Deactivation of SOFC Anode Substrate For Direct Internal Reforming
US	11/524,241	9/21/2006	7,846,600	12/7/2010	Adaptive Purge Control to Prevent Electrode Redox Cycles in Fuel Cell Systems
US	60/816,878	6/27/2006			Preoxidation of Metallic Interconnects
US	60/760,933	1/23/2006			Modular fuel cell system
US	11/433,582	5/15/2006	7,781,912	8/24/2010	Fuel Cell Start-Up from a Non-Powered Up Condition

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	11/436,537	5/19/2006			Hermetic High Temperature Dielectric and Thermal Expansion Compensator
US	60/842,361	9/6/2006			Flexible Fuel Cell System Configuration to Handle Multiple Fuels
US	60/861,708	11/30/2006			Integrated stack reformer/combustor fuel manifold plate
US	60/853,443	10/23/2006			Dual Function Heat Exchanger for Start-Up Humidification and Facility Heating in SOFC System
US	11/276,717	3/10/2006	7,713,649	5/11/2010	Fuel Cell Stack with Internal Fuel Manifold Configuration
US	11/389,282	3/27/2006			Solid Oxide Reversible Fuel Cell with Improved Electrode Composition
US	11/384,426	3/21/2006			Perovskite Materials with Combined Pr, La, Sr, "A" Site Doping for Improved Cathode Durability
PCT	PCT/US2006/017655	5/8/2006			High temperature fuel cell system with integrated heat exchanger network
US	60/782,268	3/15/2006			Low pressure hydrogen powered vehicle and fuel cell system for generating hydrogen for the vehicle
US	11/432,503	5/12/2006	7,572,530	8/11/2009	SORFC Power and Oxygen Generation Method and System
US	60/788,044	4/3/2006			Fuel cell system and balance of plant configuration
US	60/788,043	4/3/2006			Fuel cell stack components and materials
US	11/717,774	3/14/2007	7,878,280	2/1/2011	Low pressure hydrogen powered vehicle and fuel cell system for generating hydrogen for the vehicle
US	12/889,776	9/24/2010			Low Pressure Hydrogen Fueled Vehicle and Method of Operating Same
US	60/788,042	4/3/2006			Ship-board fuel cell integration
US	11/522,976	9/19/2006	8,273,487	9/25/2012	High temperature fuel cell system for operation with low purity ethanol
US	13/591,934	8/22/2012	8,445,146	5/21/2013	High temperature fuel cell system for operation with low purity ethanol
US	11/526,029	9/25/2006	7,968,245	6/28/2011	High utilization stack
US	60/861,444	11/29/2006			FUEL CELL SYSTEMS WITH FUEL UTILIZATION AND OXIDATION MONITORING

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	11/457,016	7/12/2006			Cermet and Ceramic Interconnect for a Solid Oxide Fuel Cell
US	11/491,487	7/24/2006			Fuel cell system with partial recycling of anode exhaust
PCT	PCT/US2006/028613	7/24/2006			Fuel cell system with partial recycling of anode exhaust
US	11/491,488	7/24/2006	8,101,307	1/24/2012	Fuel cell system with electrochemical anode exhaust recycling
PCT	PCT/US2006/028614	7/24/2006			Fuel cell system with electrochemical anode exhaust recycling
PCT	PCT/US2006/028612	7/24/2006			Partial pressure swing adsorption system for providing hydrogen to a vehicle fuel cell
PCT	PCT/US2006/028615	7/24/2006			Gas separation method and apparatus using partial pressure swing adsorption
US	60/875,825	12/20/2006			Model Based Real Time Optimization of Fuel Cell Clusters
US	60/935,471	8/15/2007			Fuel Cell System Components
PCT	PCT/US2006/037459	9/27/2006			Fuel Cell Water Purification System and Method
US	11/656,445	1/23/2007	8,071,248	12/6/2011	Structure and method for optimizing system efficiency when operating an SOFC system with alcohol fuels
US	11/797,708	5/7/2007	7,705,490	4/27/2010	Integral Stack Columns
US	11/797,707	5/7/2007	7,974,106	7/5/2011	Ripple Cancellation
US	13/154,888	6/7/2011	8,289,730	10/16/2012	Ripple Cancellation
US	60/907,524	4/5/2007			Solid Oxide fuel Cell System with Internal Reformation
US	60/852,396	10/18/2006			Anode with remarkable stability under conditions of extreme fuel starvation
US	11/594,797	11/9/2006	7,887,971	2/15/2011	SORFC System with Non-Noble Metal Electrode Compositions
US	12/986,291	1/7/2011	8,053,136	11/8/2011	SORFC System with Non-Noble Metal Electrode Compositions
US	60/924,874	6/4/2007			Structure for high temperature fuel cell system start up

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	60/887,398	1/31/2007			Fuel cell stack components
US	11/703,152	2/7/2007			Venturi catalytic reactor inlet fuel mixer
US	60/907,706	4/13/2007			Heterogenous ceramic composite (HZ2C) for SOFC application
US	11/711,625	2/28/2007			Flexible current collector
US	11/707,070	2/16/2007			SOFC Interconnect
US	11/656,006	1/22/2007	9,190,693	11/17/2015	Modular fuel cell system
US	14/881,685	10/13/2015			Modular fuel cell system
PCT	PCT/US 2007/001584	1/22/2007			Modular fuel cell system
US	11/656,563	1/23/2007			Integrated Solid Oxide Fuel Cell and Fuel Processor
PCT	PCT/US 2007/001779	1/23/2007			Integrated Solid Oxide Fuel Cell and Fuel Processor
US	60/929,161	6/15/2007			Dot pattern contact layer
US	11/785,034	4/13/2007			Composite Anode Showing Little Performance Loss With Time
US	60/901,638	2/16/2007			Building/Campus Instantaneous Energy Consumption and Cleanliness Display System
US	12/268,585	11/11/2008	8,986,905	3/24/2015	Fuel Cell Interconnect
US	14/601,708	1/21/2015			Fuel Cell Interconnect
PCT	PCT/US 2007/006373	3/14/2007			Low pressure hydrogen powered vehicle and fuel cell system for generating hydrogen for the vehicle
PCT	PCT/US07/08225	4/2/2007			Fuel cell system and balance of plant configuration
US	11/730,541	4/2/2006	7,883,813	2/8/2011	FUEL CELL SYSTEM VENTILATION SCHEME
US	11/730,529	4/2/2006	7,704,617	4/27/2010	HYBRID REFORMER FOR FUEL FLEXIBILITY
US	11/730,540	4/2/2006	8,822,094	9/2/2014	FUEL CELL SYSTEM OPERATED ON LIQUID FUELS
US	14/469,781	8/27/2014			FUEL CELL SYSTEM OPERATED ON LIQUID FUELS
PCT	PCT/US07/08224	4/2/2007			Fuel cell stack components and materials
US	11/730,255	3/30/2007	7,833,668	11/16/2010	SOFC system with 100 percent fuel utilization

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US	11/730,555	4/2/2006	7,951,509	5/31/2010	Compliant Cathode Contact Materials
US	11/730,256	3/20/2007	7,883,803	2/8/2011	SOFC System Producing Reduced Atmospheric Carbon Dioxide Using a Molten Carbonate Carbon Dioxide Pump
US	11/802,006	5/18/2007			Deactivation of SOFC Anode Substrate For Direct Internal Reforming
US	11/798,673	5/16/2007	8,652,691	2/18/2014	Preoxidation of Metallic Interconnects
US	11/905,477	10/1/2007			INTEGRATED FUEL LINE TO SUPPORT CPOX AND SMR REACTIONS IN SOFC SYSTEMS
US	13/414,354	3/7/2012			CPOX Reactor Design for Liquid Fuel and Liquid Water
US	11/905,051	9/27/2007	8,920,997	12/30/2014	HYBRID FUEL HEAT EXCHANGER - PRE-REFORMER IN SOFC SYSTEMS
US	61/000,891	10/30/2007			SOFC ELECTRODE SINTERING BY MICROWAVE HEATING
US	12/149,488	5/2/2008	8,232,676	7/31/2012	UNINTERRUPTIBLE FUEL CELL SYSTEM
US	11/898,065	9/7/2007			PROCESSING OF POWDERS OF A REFRACTORY METAL BASED ALLOY FOR HIGH DENSIFICATION
US	60/996,352	11/13/2007			MIXED SUPPORT FUEL CELL DESIGN
US	60/935,092	7/26/2007			HOT BOX DESIGN WITH A MULTI-STEAM HEAT EXCHANGER AND SINGLE AIR CONTROL
PCT	PCT/US2007/019887	9/13/2007			Adaptive Purge Control to Prevent Electrode Redox Cycles in Fuel Cell Systems
US	11/896,487	8/31/2007			Flexible Fuel Cell System Configuration to Handle Multiple Fuels
PCT	PCT/US 2007/019155	8/31/2007			Flexible Fuel Cell System Configuration to Handle Multiple Fuels
PCT	PCT/US 2007/19156	8/31/2007			High temperature fuel cell system for operation with low purity ethanol
PCT	PCT/US2007/019888	9/13/2007			High utilization stack



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US	11/984,605	11/20/2007	8,293,412	10/23/2012	Enhanced efficiency of a combined SORFC energy storage and fuel generation system
US	11/907,204	10/10/2007	8,748,056	6/10/2014	Anode with remarkable stability under conditions of extreme fuel starvation
US	14/270,686	5/6/2014			Anode with Remarkable Stability Under Conditions of Extreme Fuel Starvation
PCT	PCT/US2007/021630	10/10/2007			Anode with remarkable stability under conditions of extreme fuel starvation
US	11/907,205	10/10/2007	8,435,689	5/7/2013	Dual Function Heat Exchanger for Start-Up Humidification and Facility Heating in SOFC System
PCT	PCT/US2007/021597	10/10/2007			Dual Function Heat Exchanger for Start-Up Humidification and Facility Heating in SOFC System
US	61/064,143	2/19/2008			FUEL CELL SYSTEM FOR CHARGING ELECTRIC VEHICLES
US	12/379,618	2/25/2009	8,652,697	2/18/2014	METHOD OF MEASURING AND CHARACTERIZING INDIVIDUAL CELL OPERATING PROPERTIES...
US	14/096,616	12/4/2013	8,986,900	3/24/2015	Method of Controlling a Fuel Cell System Using Impedance Determination
US	14/627,681	2/20/2015	9,190,681	11/17/2015	Fuel Cell Monitoring and Control System
US	12/458,356	7/8/2009	8,288,891	10/16/2012	INTEGRATED FUEL CELL SYSTEM WITH AUXILIARY POWER DELIVERY
US	13/618,701	9/14/2012			INTEGRATED FUEL CELL SYSTEM WITH AUXILIARY POWER DELIVERY
PCT	PCT/US10/41221	7/7/2010			INTEGRATED FUEL CELL SYSTEM WITH AUXILIARY POWER DELIVERY
US	11/987,220	11/28/2007	8,197,978	6/12/2012	FUEL CELL SYSTEMS WITH FUEL UTILIZATION AND OXIDATION MONITORING
PCT	PCT/US2007/024457	11/28/2007			FUEL CELL SYSTEMS WITH FUEL UTILIZATION AND OXIDATION MONITORING

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US	12/005,344	12/27/2007	7,781,112	8/24/2010	Combined Energy Storage and Fuel Generation with Reversible Fuel Cell
US	12/000,924	12/18/2007	7,951,496	5/31/2011	Model Based Real Time Optimization of Fuel Cell Clusters
PCT	PCT/US2007/025785	12/18/2007			Model Based Real Time Optimization of Fuel Cell Clusters
PCT	PCT/US2007/025727	12/17/2007			Methods for Fuel Cell System Optimization
PCT	PCT/US2008/000413	1/11/2008			Structure and method for optimizing system efficiency when operating an SOFC system with alcohol fuels
US	61/129,620	7/8/2008			Method of independent power control of alternative energy systems for power sharing and parallel operation
US	12/078,926	4/8/2008			Method and system for reducing carbon dioxide emissions and tracking said reductions through the use of financial incentives
US	61/129,622	7/8/2008			Method of startup of FCS system
US	61/136,091	8/12/2008			Grooved alumina dielectric
US	61/129,838	7/23/2008			OPERATION OF FUEL CELL SYSTEMS WITH REDUCED CARBON FORMATION AND ANODE LEADING EDGE DAMAGE
US	12/149,816	5/8/2008	8,211,583	7/3/2012	Parameterized control for flexible fuel operation
US	13/525,663	6/18/2012	8,685,583	4/1/2014	Derivation of Control Parameters of Fuel Cell Systems for Flexible Fuel Operation
US	14/182,551	2/18/2014	8,968,955	3/3/2015	Derivation of Control Parameters of Fuel Cell Systems for Flexible Fuel Operation
US	14/603,788	1/23/2015			Derivation of Control Parameters of Fuel Cell Systems for Flexible Fuel Operation
US	12/149,984	5/12/2008	8,142,943	3/27/2012	SOFC column temperature equalization by internal reforming and fuel cascading
US	12/071,396	2/20/2008			SOFC electrochemical anode tail gas oxidizer

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US	12/222,295	8/6/2008	9,059,434	6/16/2015	Structure and method for SOFC operation with failed cell diode bypass
US	61/064,566	3/12/2008			Multi-material fuel cell seals and composite high temperature seal
US	61/064,144	2/19/2008			HB SMR and ATO design
US	12/010,884	1/30/2008	8,110,319	2/7/2012	Fuel cell stack components
US	13/339,860	12/29/2011	8,268,502	9/18/2012	Fuel cell stack components
US	13/591,820	8/22/2012	8,445,157	5/21/2013	Fuel cell stack components
PCT	PCT/US2008/ 001162	1/30/2008			Fuel cell stack components
PCT	PCT/US2008/ 001367	2/1/2008			Venturi catalytic reactor inlet fuel mixer
PCT	PCT/US2008/ 01814	2/12/2008			SOFC Interconnect
PCT	PCT/US2008/ 002114	2/19/2008			Current collector for fuel cell systems
PCT	PCT/US08 /02410	2/25/2008			SOFC system with 100 percent fuel utilization
PCT	PCT/US2008/ 002411	2/25/2008			SOFC System Producing Reduced Atmospheric Carbon Dioxide Using a Molten Carbonate Carbon Dioxide Pump
US	12/222,294	8/6/2008			Fuel cell system with increased floor density
US	61/129,759	7/17/2008			Electrolyte supported cell designed for longer life and higher power
PCT	PCT/US2008/ 004216	4/1/2008			Solid Oxide Fuel Cell System with Internal Reformation
US	12/081124	4/10/2008			HETEROGENEOUS CERAMIC COMPOSITE SOFC ELECTROLYTE
PCT	PCT/US2008/ 004600	4/10/2008			HETEROGENEOUS CERAMIC COMPOSITE SOFC ELECTROLYTE
PCT	PCT/US2008/ 004710	4/11/2008			Composite Anode Showing Little Performance Loss With Time
PCT	PCT/US2008/ 005517	4/30/2008			Integral Stack Columns

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PCT	PCT/US2008/005516	4/30/2008			Ripple Cancellation
US	12/458,342	7/8/2009	8,445,150	5/21/2013	GRID FREQUENCY-RESPONSIVE SOLID OXIDE FUEL CELL SYSTEM
PCT	PCT/US2010/41179	7/7/2010			GRID FREQUENCY-RESPONSIVE SOLID OXIDE FUEL CELL SYSTEM
US	61/129,623	7/8/2008			Automated Fuel Cell Load Reduction Controller
US	61/193,596	12/9/2008			Air Protected Hermetic Anode Side Seal
US	61/129,882	7/25/2008			Electrolyte Hole Support
US	61/129,621	7/8/2008			HEAT EXCHANGER WITH FLOW ROTATION CONTROL
US	12/222,712	8/14/2008	7,704,618	4/27/2010	HIGH TEMPERATURE FUEL CELL SYSTEM AND METHOD OF OPERATING SAME
US	12/155,367	6/3/2008	7,846,599	12/7/2010	STRUCTURE FOR HIGH TEMPERATURE FUEL CELL SYSTEM START UP AND SHUTDOWN
PCT	PCT/US2008/006993	6/3/2008			STRUCTURE FOR HIGH TEMPERATURE FUEL CELL SYSTEM START UP AND SHUTDOWN
US	12/213,088	6/13/2008			DOT PATTERN CONTACT LAYER
US	13/863,809	4/16/2013			DOT PATTERN CONTACT LAYER
PCT	PCT/US2008/007360	6/13/2008			DOT PATTERN CONTACT LAYER
US	12/292,078	11/12/2008	8,691,470	4/8/2014	SEAL COMPOSITIONS, METHODS, AND STRUCTURES FOR PLANAR SOLID OXIDE FUEL CELLS
US	14/243,588	4/2/2014			SEAL COMPOSITIONS, METHODS, AND STRUCTURES FOR PLANAR SOLID OXIDE FUEL CELLS
US					SEAL COMPOSITIONS, METHODS, AND STRUCTURES FOR PLANAR SOLID OXIDE FUEL CELLS

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US	61/202,639	3/20/2009			Crack Free Electrolyte
PCT	PCT/US2008/008951	7/24/2008			HYBRID FUEL HEAT EXCHANGER - PRE-REFORMER IN SOFC SYSTEMS
US	12/219,684	7/25/2008	8,137,855	3/20/2012	HOT BOX DESIGN WITH A MULTI-STEAM HEAT EXCHANGER AND SINGLE AIR CONTROL
US	13/415,427	3/8/2012	9,166,240	10/20/2015	HOT BOX DESIGN WITH A MULTI-STEAM HEAT EXCHANGER AND SINGLE AIR CONTROL
PCT	PCT/US2008/009069	7/25/2008			HOT BOX DESIGN WITH A MULTI-STEAM HEAT EXCHANGER AND SINGLE AIR CONTROL
US	12/222,736	8/14/2008	8,852,820	10/7/2014	Fuel Cell System Components
US	14/476,851	9/4/2014			Fuel Cell System Components
US	12/230,486	8/29/2008	8,071,241	12/6/2011	Co-production of Hydrogen and Electricity in a High Temperature Electrochemical System
US	12/225,915	4/2/2007	8,691,474	4/8/2014	Fuel cell stack components and materials
US	12/289,510	10/29/2008			SOFC ELECTRODE SINTERING BY MICROWAVE HEATING
US	12/29,2151	11/12/2008	8,067,129	11/29/2011	ELECTROLYTE SUPPORTED CELL DESIGNED FOR LONGER LIFE AND HIGHER POWER
US	13/268,233	10/7/2011	8,999,601	4/7/2015	ELECTROLYTE SUPPORTED CELL DESIGNED FOR LONGER LIFE AND HIGHER POWER
US	13/269,006	10/7/2011	8,333,919	12/18/2012	ELECTROLYTE SUPPORTED CELL DESIGNED FOR LONGER LIFE AND HIGHER POWER
PCT	PCT/US2008/012671	11/12/2008			ELECTROLYTE SUPPORTED CELL DESIGNED FOR LONGER LIFE AND HIGHER POWER
PCT	PCT/US2008/084027	11/19/2008			Enhanced efficiency for a combined SORFC energy storage and fuel generation system

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US	61/193377	11/21/2008			Coating Process for Production of Fuel Cell Components
US	61/202,876	4/15/2009			FUEL CELL SYSTEM WITH ELECTROCHEMICAL HYDROGEN PUMP AND METHOD OF OPERATING SAME
US	12/402,423	3/11/2009	8,097,378	1/17/2012	STACK SEAL INTERFACE ADAPTER
US	61/202,683	3/26/2009			FUEL CELL SYSTEM WITH INTERRUPTION CONTROL
US	12/379,310	2/18/2009	8,624,549	1/7/2014	FUEL CELL SYSTEM FOR CHARGING AN ELECTRIC VEHICLE
US	14/064,783	10/28/2013			FUEL CELL SYSTEM FOR CHARGING AN ELECTRIC VEHICLE
PCT	PCT/US2009 /034367	2/18/2009			FUEL CELL SYSTEM FOR CHARGING AN ELECTRIC VEHICLE
US	12/379,299	2/18/2009	8,288,041	10/16/2012	FUEL CELL SYSTEM CONTAINING ANODE TAIL GAS OXIDIZER AND HYBRID HEAT EXCHANGER / REFORMER
US	13/619,289	9/14/2012	8,535,839	9/17/2013	FUEL CELL SYSTEM CONTAINING ANODE TAIL GAS OXIDIZER AND HYBRID HEAT EXCHANGER / REFORMER
US	14/018,963	9/5/2013	9,105,894	8/11/2015	FUEL CELL SYSTEM CONTAINING ANODE TAIL GAS OXIDIZER AND HYBRID HEAT EXCHANGER / REFORMER
PCT	PCT/US2009 /000991	2/18/2009			FUEL CELL SYSTEM CONTAINING ANODE TAIL GAS OXIDIZER AND HYBRID HEAT EXCHANGER / REFORMER
US	12/382,173	3/10/2009	7,931,997	4/26/2011	MULTI-MATERIAL HIGH TEMPERATURE FUEL CELL SEALS
US	61/272,056	8/12/2009			INTERNAL REFORMING ANODE FOR SOLID OXIDE FUEL CELL
US	12/850,885	8/5/2010	8,617,763	12/31/2013	INTERNAL REFORMING ANODE FOR SOLID OXIDE FUEL CELL
PCT	PCT/US10/ 45182	8/11/2010			Internal Reforming Anode for Solid Oxide Fuel Cells

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US	12/458,355	7/8/2009	8,535,836	9/17/2013	FUEL CELL SYSTEM WITH QUICK CONNECT COMPONENTS
US	14/019,702	9/6/2013			FUEL CELL SYSTEM WITH QUICK CONNECT COMPONENTS
PCT	PCT/US2010/41238	7/7/2010			FUEL CELL SYSTEM WITH QUICK CONNECT COMPONENTS
US	11/124,817	5/9/2005	7,858,256	12/28/2010	HIGH TEMPERATURE FUEL CELL SYSTEM WITH INTEGRATED HEAT EXCHANGER NETWORK
US	61/272,227	9/2/2009			CONFIGURATION FOR MULTISTREAM HEAT EXCHANGER FOR AN SOFC SYSTEM
US	12/873,935	9/1/2010	8,445,156	5/21/2013	Multi-Stream Heat Exchanger for a Fuel Cell System
US	13/850,365	3/26/2013			Multi-Stream Heat Exchanger for a Fuel Cell System
PCT	PCT/US10/ 47540	9/1/2010			Multi-Stream Heat Exchanger for a Fuel Cell System
US	12/535,971	8/5/2009			SOLID OXIDE REVERSIBLE FUEL CELL WITH IMPROVED ELECTRODE COMPOSITION
US	12/458,341	7/8/2009	8,071,246	12/6/2011	METHOD OF OPTIMIZING OPERATING EFFICIENCY OF FUEL CELLS
US	13/286,749	11/1/2011	8,277,992	10/2/2012	METHOD OF OPTIMIZING OPERATING EFFICIENCY OF FUEL CELLS
US	13/590,625	8/21/2012	8,663,859	3/4/2014	METHOD OF OPTIMIZING OPERATING EFFICIENCY OF FUEL CELLS
US	12/458,172	7/2/2009	8,872,392	10/28/2014	FUEL CELL CONTROL SYSTEM
US	12/458,173	7/2/2009	8,263,276	9/11/2012	STARTUP POWER CONTROL IN A FUEL CELL CONTROL SYSTEM
US	12/457,982	6/26/2009	9,142,847	9/22/2015	FUEL CELL LOAD CONTROLLER
US	12/458,171	7/2/2009	8,968,958	3/3/2015	Voltage Lead Jumper Connected Fuel Cell Columns
US	14/597,650	1/15/2015			Voltage Lead Jumper Connected Fuel Cell Columns

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US	12/507,670	7/22/2009			OPERATION OF FUEL CELL SYSTEMS WITH REDUCED CARBON FORMATION AND ANODE LEADING EDGE DAMAGE
PCT	PCT/US10/ 42316	7/16/2010			OPERATION OF FUEL CELL SYSTEMS WITH REDUCED CARBON FORMATION AND ANODE LEADING EDGE DAMAGE
US	12/461,413	8/11/2009	8,404,398	3/26/2013	HERMETIC HIGH TEMPERATURE DIELECTRIC WITH GROOVE AND THERMAL EXPANSION COMPENSATOR
US	12/585,627	9/21/2009	8,185,214	5/22/2012	AN ONLINE CONFIGURABLE CONTROL SYSTEM FOR FUEL CELLS
US	61/272,494	9/30/2009			FUEL CELL STACK COMPRESSION DEVICES AND METHODS
US	12/892,582	9/28/2010	8,785,074	7/22/2014	FUEL CELL STACK COMPRESSION DEVICES AND METHODS
US	14/271,158	5/6/2014			FUEL CELL STACK COMPRESSION DEVICES AND METHODS
PCT	PCT/US10/ 50577	9/28/2010			FUEL CELL STACK COMPRESSION DEVICES AND METHODS
US	61/282528	2/25/2010			METHOD OF PROGRAMMING PROCESSORS THROUGH CAN INTERFACE WITHOUT CHANGING THE BOOT MODE SELECT PINS
US	13/033,990	2/24/2011	8,826,261	9/2/2014	PROGRAMMING PROCESSORS THROUGH CAN INTERFACE WITHOUT CHANGING THE BOOT MODE SELECT PINS
US	12/591,464	11/20/2009			COATING PROCESS FOR PRODUCTION OF FUEL CELL COMPONENTS
PCT	PCT/US2009/ 065095	11/19/2009			COATING PROCESS FOR PRODUCTION OF FUEL CELL COMPONENTS
US	12/591,986	12/7/2009	8,623,569	1/7/2014	FUEL CELL SEALS
US	12/591,872	12/3/2009	8,685,579	4/1/2014	INCREASING THERMAL DISSIPATION OF FUEL CELL STACKS UNDER PARTIAL ELECTRICAL LOAD
US	14/187,546	2/24/2014	9,166,246	10/20/2015	INCREASING THERMAL DISSIPATION OF FUEL CELL STACKS UNDER PARTIAL ELECTRICAL LOAD



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US	61/298,468	1/26/2010			PHASE STABLE DOPED ZIRCONIA ELECTROLYTE COMPOSITIONS WITH LOW DEGRADATION
US	13/009,085	1/19/2011	8,580,456	11/12/2013	PHASE STABLE DOPED ZIRCONIA ELECTROLYTE COMPOSITIONS WITH LOW DEGRADATION
US	14/055,557	10/16/2013			PHASE STABLE DOPED ZIRCONIA ELECTROLYTE COMPOSITIONS WITH LOW DEGRADATION
WO	PCT/US11/21664	1/19/2011			PHASE STABLE DOPED ZIRCONIA ELECTROLYTE COMPOSITIONS WITH LOW DEGRADATION
US	61/374,424	8/17/2010			METHOD FOR SOFC CELL FABRICATION
US	13/211,903	8/17/2011	8,449,702	5/28/2013	Method for Solid Oxide Fuel Cell Fabrication
US	13/869,244	4/24/2013	8,940,112	1/27/2015	Method for Solid Oxide Fuel Cell Fabrication
US	14/477,035	9/4/2014			Method for Solid Oxide Fuel Cell Fabrication
PCT	PCT/US11/47976	8/16/2011			Method for Solid Oxide Fuel Cell Fabrication
US	12/659,742	3/19/2010	8,663,869	3/4/2014	CRACK FREE SOFC ELECTROLYTE
PCT	PCT/US2010/027899	3/19/2010			CRACK FREE SOFC ELECTROLYTE
US	12/659,899	3/24/2010	8,802,308	8/12/2014	FUEL CELL SYSTEM WITH INTERRUPTION CONTROL
US	12/759395	4/13/2010			FUEL CELL SYSTEM WITH ELECTROCHEMICAL HYDROGEN PUMP AND METHOD OF OPERATING SAME
US	12/765,732	4/22/2010	7,901,814	3/8/2011	HIGH TEMPERATURE FUEL CELL SYSTEM AND METHOD OF OPERATING SAME
US	13/020,598	2/3/2011			HIGH TEMPERATURE FUEL CELL SYSTEM AND METHOD OF OPERATING SAME
US	12/766,711	4/23/2010	8,182,956	5/22/2012	FUEL CELL STACK WITH INTERNAL FUEL MANIFOLD CONFIGURATION
US	12/765,208	4/22/2010			INTEGRAL STACK COLUMNS

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US	12/765213	4/22/2010	8,057,944	11/15/2011	HYBRID REFORMER FOR FUEL FLEXIBILITY
US	61/386,257	9/24/2010			FUEL CELL MECHANICAL COMPONENTS
US	13/242,194	9/23/2011	8,440,362	5/14/2013	FUEL CELL MECHANICAL COMPONENTS
US	13/845,685	3/18/2013	8,822,101	9/2/2014	FUEL CELL MECHANICAL COMPONENTS
US	14/447,944	7/31/2014			FUEL CELL MECHANICAL COMPONENTS
US	11/124,810	5/9/2005	8,691,462	4/8/2014	HIGH TEMPERATURE FUEL CELL SYSTEM WITH INTEGRATED HEAT EXCHANGER NETWORK
US	14/196,342	3/4/2014			HIGH TEMPERATURE FUEL CELL SYSTEM WITH INTEGRATED HEAT EXCHANGER NETWORK
US	61/430,255	1/6/2011			Fuel Cell Hot Box Components
US	13/344,077	1/5/2012	8,563,180	10/22/2013	SOFC Hot Box Components
US	14/054,960	10/16/2013			SOFC Hot Box Components
US	13/344,232	1/5/2012	8,968,943	3/3/2015	SOFC Hot Box Components
US	14/600,450	1/20/2015			SOFC Hot Box Components
US	13/344,304	1/5/2012	8,877,399	11/4/2014	SOFC Hot Box Components
US	14/516,156	10/16/2014			SOFC Hot Box Components
US	13/344,364	1/5/2012	9,190,673	11/17/2015	SOFC Hot Box Components
US	14/938,019	11/11/2015			SOFC Hot Box Components
PCT	PCT/US12/ 20356	1/5/2012			SOFC Hot Box Components
US	61/478,697	4/25/2011			High-yield, low cost refurbishment process for SOFC stack components
US	13/454,536	4/24/2012	8,535,841	9/17/2013	Methods of Refurbishing Components of a Fuel Cell Stack
US	14/019,038	9/5/2013	9,059,455	6/16/2015	Methods of Refurbishing Components of a Fuel Cell Stack
US	61/467,444	3/25/2011			Rapid Thermal Processing for SOFC Manufacturing

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US	13/428,653	3/23/2012	9,059,449	6/16/2015	Rapid Thermal Processing for SOFC Manufacturing
PCT	PCT/US12/30320	3/23/2012			Rapid Thermal Processing for SOFC Manufacturing
US	61/406,265	10/25/2010			Fuel Cell Control Device and Method
PCT	PCT/US11/ 57440	10/24/2011			Fuel Cell Control Device and Method
US	61/413,629	11/15/2010			Structure for Fuel Cell System with Grid Independent Operation with DC Micro-Grid Capability
US	13/295,527	11/14/2011	9,106,098	8/11/2015	Structure for Fuel Cell System with Grid Independent Operation with DC Micro-Grid Capability
US	14/790,253	7/2/2015			Fuel Cell System with Grid Independent Operation and DC Microgrid Capability
PCT	PCT/US11/ 60604	11/14/2011			Structure for Fuel Cell System with Grid Independent Operation with DC Micro-Grid Capability
US	61/494,397	6/9/2011			Fuel Cell Bypass Diode Structures and Attachment Methods
US	13/492,351	6/8/2012	8,785,012	7/22/2014	Fuel Cell Bypass Diode Structures and Attachment Methods
US	14/182,511	2/18/2014	8,802,250	8/12/2014	Fuel Cell Bypass Diode Structures and Attachment Methods
PCT	PCT/US12/ 41594	6/8/2012			Fuel Cell Bypass Diode Structures and Attachment Methods
US	61/418,088	11/30/2010			Reduction of Chromium Oxide in a Hydrogen Containing Atmosphere to Produce Chromium Powder for Powder Metallurgy Applications with Improved Properties
US	61/504,478	7/5/2011			Iron Coated Chromium Powder and SOFC IC Made Therefrom
US	13/301,151	11/21/2011	8,840,833	9/23/2014	Iron Coated Chromium Powder and SOFC IC Made Therefrom

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	14/483,858	9/11/2014			Iron Coated Chromium Powder and SOFC IC Made Therefrom
US	61/418,043	11/30/2010			High Resolution Density Measurement for Powdered Metals
US	13/306,511	11/28/2011	8,802,331	8/12/2014	Non-Destructive Testing Methods for Fuel Cell Interconnect Manufacturing
PCT	PCT/US11/ 62328	11/29/2011			Non-Destructive Testing Methods for Fuel Cell Interconnect Manufacturing
US	13/282,899	10/27/2011	9,190,685	11/17/2015	SOFC System with Selective CO2 and Water Removal
US	14/886,991	10/19/2015			SOFC System with Selective CO2 and Water Removal
US	13/626,560	9/25/2012	9,141,923	9/22/2015	Fuel Cell Fleet Optimization
WO	PCT/US13/61230	9/23/2013			Fuel Cell Fleet Optimization
US	61/496,143	6/13/2011			Fuel Cell Stack Compression Devices and Methods
US	61/560,893	11/17/2011			Multi-Layered Coating Providing Corrosion Resistance to Zirconia Based Electrolytes
US	13/677,836	11/15/2012	8,852,825	10/7/2014	Multi-Layered Coating Providing Corrosion Resistance to Zirconia Based Electrolytes
US	14/476,963	9/4/2014			Multi-Layered Coating Providing Corrosion Resistance to Zirconia Based Electrolytes
WO	PCT/US12/65213	10/15/2012			Multi-Layered Coating Providing Corrosion Resistance to Zirconia Based Electrolytes
US	61/539,045	9/26/2011			Electrolyte Supported Cell Designed for Longer Life and Higher Power
US	13/409,629	3/1/2012			Coatings for Metallic Interconnects to Reduce SOFC Degradation

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	14/870,579	9/30/2015			Coatings for Metallic Interconnects to Reduce SOFC Degradation
WO	PCT/US13/27895	2/27/2013			Coatings for Metallic Interconnects to Reduce SOFC Degradation
US	61/501,599	6/27/2011			Convergent Energized IT Apparatus for Commercial Use
US	13/533,070	6/26/2012			Convergent Energized IT Apparatus for Commercial Use
US	61/501,610	6/27/2011			Convergent Energized IT Apparatus for Residential Use
US	13/533,456	6/26/2012	9,059,600	6/16/2015	Convergent Energized IT Apparatus for Residential Use
US	13/533,755	6/26/2012	9,019,700	4/28/2015	Method of Operating an Energy Center
US	61/501,367	6/27/2011			Fuel Cell Power Generation System With Multiple DC Outputs
US	13/533,331	6/26/2012			Fuel Cell Power Generation System with Isolated and Non-Isolated Buses
US	61/501,607	6/27/2011			Energy Center
US	13/533,731	6/26/2012	9,089,077	7/21/2015	Energy Center
US	61/501,382	6/27/2011			B-Side Feed for Critical Power Applications
US	13/533,496	6/26/2012			B-Side Feed for Critical Power Applications
US	14/955,584	12/1/2015			B-Side Feed for Critical Power Applications
PCT	PCT/US12/ 44214	6/26/2012			B-Side Feed for Critical Power Applications
US	61/501,604	6/27/2011			DC Micro-Grid
US	13/533,593	6/26/2012	8,970,176	3/3/2015	DC Micro-Grid
US	14/600,571	1/20/2015			DC Micro-Grid
US	61/501,613	6/27/2011			Electric Vehicle Charging Using Fuel Cell System
US	13/533,216	6/26/2012			Electric Vehicle Charging Using Fuel Cell System
PCT	PCT/US12/ 44195	6/26/2012			Electric Vehicle Charging Using Fuel Cell System
US	61/511,305	7/25/2011			A Measurement Device for Measuring Voltages Along a Linear Array of Voltage Sources

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	13/556,794	7/24/2012	8,993,191	3/31/2015	A Measurement Device for Measuring Voltages Along a Linear Array of Voltage Sources
US	14/627,290	2/20/2015			Measurement Device for Measuring Voltages Along a Linear Array of Voltage Sources
US	61/714,928	10/17/2012			Interconnect For Fuel Cell Stack
US	61/673,548	7/19/2012			Thermal Processing of Interconnects
US	61/600,171	2/17/2012			Methods and Systems for Fuel Cell Stack Sintering and Conditioning
US	13/768,307	2/15/2013	9,065,127	6/23/2015	Methods and Systems for Fuel Cell Stack Sintering and Conditioning
US	14/715,890	5/19/2015			Methods and Systems for Fuel Cell Stack Sintering and Conditioning
WO	PCT/US13/26328	2/15/2013			Methods and Systems for Fuel Cell Stack Sintering and Conditioning
US	61/623,841	4/13/2012			Flaw Detection Method and Apparatus For Fuel Cell Components
US	61/749,984	1/8/2013			Flaw Detection Method and Apparatus For Fuel Cell Components
US	13/859,829	4/10/2013			Flaw Detection Method and Apparatus For Fuel Cell Components
US	13/859,892	4/10/2013	9,164,064	10/20/2015	Flaw Detection Method and Apparatus For Fuel Cell Components
WO	PCT/US13/35895	4/10/2013			Flaw Detection Method and Apparatus For Fuel Cell Components
US	61/535,121	9/15/2011			Crack Detection in Ceramics Using Electrical Conductors
US	13/531,631	6/25/2012	9,176,085	11/3/2015	Crack Detection in Ceramics Using Electrical Conductors

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US	14/873,686	10/2/2015			Crack Detection in Ceramics Using Electrical Conductors
US	61/600,102	2/17/2012			Solid Oxide Fuel Cell Stack Heat Treatment Methods and Apparatus
US	13/768,218	2/15/2013	9,142,845	9/22/2015	Solid Oxide Fuel Cell Stack Heat Treatment Methods and Apparatus
WO	PCT/US13/26387	2/15/2013			Solid Oxide Fuel Cell Stack Heat Treatment Methods and Apparatus
US	61/561,344	11/18/2011			Fuel Cell Interconnects and Methods of Fabrication
US	13/678,709	11/16/2012	8,962,219	2/24/2015	Fuel Cell Interconnects and Methods of Fabrication
US	13/678,981	11/16/2012	9,196,909	11/24/2015	Fuel Cell Interconnect Heat Treatment Method
US	14/886,893	10/19/2015			Fuel Cell Interconnect
WO	PCT/US12/65508	11/16/2012			Fuel Cell Interconnects and Methods of Fabrication
US	61/605,309	3/1/2012			Coatings for SOFC Metallic Interconnects
US	61/702,397	9/18/2012			Coatings for SOFC Metallic Interconnects
US	13/781,206	2/28/2013			Coatings for SOFC Metallic Interconnects
US	61/714,302	10/16/2012			Energy Load Management System
US	14/054,010	10/15/2013			Energy Load Management System

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WO	PCT/US13/65012	10/15/2013			Energy Load Management System
US	13/606,765	9/7/2012	8,916,300	12/23/2014	Ammonia Fueled SOFC System
US	13/603,581	9/5/2012			Ammonia or Hydrazine Injection into Fuel Cell Systems
US	61/600,132	2/17/2012			Continuous Furnace for Efficient Air and Energy Use
US	61/728,290	11/20/2012			Fuel Cell System Hot Box Insulation
US	14/082,651	11/18/2013			Fuel Cell System Hot Box Insulation
WO	PCT/US13/70505	11/18/2013			Fuel Cell System Hot Box Insulation
US	61/703,832	9/21/2012			Systems and Methods for Bypassing Fuel Cells
US	14/029,178	9/17/2013			Systems and Methods for Bypassing Fuel Cells
WO	PCT/US13/60145	9/17/2013			Systems and Methods for Bypassing Fuel Cells
US	61/730,595	11/28/2012			Hermetic High Temperature Dielectric Conduit Assemblies
US	14/090,104	11/26/2013	8,921,001	12/30/2014	Hermetic High Temperature Dielectric Conduit Assemblies
WO	PCT/US13/71823	11/26/2013			Hermetic High Temperature Dielectric Conduit Assemblies
US	61/691,360	8/21/2012			Systems and Methods for Suppressing Chromium Poisoning in Fuel Cells
US	61/788,661	3/15/2013			Systems and Methods for Suppressing Chromium Poisoning in Fuel Cells
US	13/971,064	8/20/2013			Systems and Methods for Suppressing Chromium Poisoning in Fuel Cells



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WO	PCT/US13/55765	8/20/2013			Systems and Methods for Suppressing Chromium Poisoning in Fuel Cells
US	61/613,851	3/21/2012			Fuel Cell Power for Data Center Uses
US	61/789,343	3/15/2013			Fuel Cell Power for Data Center Uses
US	13/845,942	3/18/2013			Fuel Cell Power for Data Center Uses
WO	PCT/US13/33080	3/20/2013			Fuel Cell Power for Data Center Uses
US	61/750,867	1/10/2013			Methods of Recovering Scandium from Titanium Residue Streams
US	14/151,177	1/9/2014	9,102,999	8/11/2015	Methods of Recovering Scandium from Titanium Residue Streams
WO	PCT/US14/10803	1/9/2014			Methods of Recovering Scandium from Titanium Residue Streams
US	61/700,135	9/12/2012			Oxidation Process for Interconnects and End Plates
US	61/700,194	9/12/2012			Oxidation Process for Interconnects and End Plates Using Nitrous Oxide
US	61/669,494	7/9/2012			Fuel Cell Power for Site Specific Applications
US	61/669,494	7/9/2012			Fuel Cell System With Variable Frequency Drive For Support Equipment
US	61/694,337	8/29/2012			Interconnect for Fuel Cell Stack
US	14/011,804	8/28/2013			Interconnect for Fuel Cell Stack
WO	PCT/US13/56949	8/28/2013			Interconnect for Fuel Cell Stack
US	61/728,270	11/20/2012			Doped Scandia Stabilized Zirconia Electrolyte Compositions
US	61/792,699	3/15/2013			Doped Scandia Stabilized Zirconia Electrolyte Compositions

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US	14/083,708	11/19/2013			Doped Scandia Stabilized Zirconia Electrolyte Compositions
WO	PCT/US13/70783	11/19/2013			Doped Scandia Stabilized Zirconia Electrolyte Compositions
US	61/679,201	8/3/2012			Powdered Metal Preparation and Compaction for Low Permeability Interconnects
US	13/679,092	11/16/2012			Powdered Metal Preparation and Compaction for Low Permeability Interconnects
US	14/687,365	4/15/2015			Method of Making Fuel Cell Interconnect Using Powder Metallurgy
WO	PCT/US12/65531	11/16/2012			Powdered Metal Preparation and Compaction for Low Permeability Interconnects
US	61/702,375	9/18/2012			Air Dryer for a SOFC System
US	61/787,111	3/15/2013			Abrasion Resistant Solid Oxide Fuel Cell Electrode Ink
US	14/201,149	3/7/2014			Abrasion Resistant Solid Oxide Fuel Cell Electrode Ink
WO	PCT/US14/21676	3/7/2014			Abrasion Resistant Solid Oxide Fuel Cell Electrode Ink
US	13/890,555	5/9/2013	8,968,509	3/3/2015	Methods and Devices for Printing Seals for Fuel Cell Stacks
US	61/723,992	11/8/2012			Fuel Cell Interconnects and Methods of Fabrication
US	61/723,066	11/6/2012			Interconnect Design to Improve Stack Yield by Mitigating Cell Stresses Caused by Stack to Stack Interface Seals in Stack Manufacturing and Hotbox Assembly
US	14/072,375	11/5/2013			Improved Interconnect and End Plate Design for Fuel Cell Stack

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	14/072,499	11/5/2013			Improved Interconnect and End Plate Design for Fuel Cell Stack
US	14/072,381	11/5/2013			Improved Interconnect and End Plate Design for Fuel Cell Stack
WO	PCT/US13/68405	11/5/2013			Improved Interconnect and End Plate Design for Fuel Cell Stack
US	61/894,485	10/23/2013			Pre-Reformer For Selective Reformation of Higher Hydrocarbons
US	14/519,560	10/21/2014			Pre-Reformer For Selective Reformation of Higher Hydrocarbons
US					Pre-Reformer For Selective Reformation of Higher Hydrocarbons
WO	PCT/US14/61511	10/21/2014			Pre-Reformer For Selective Reformation of Higher Hydrocarbons
US	61/787,310	3/15/2013			Fuel Cell Mechanical Components
US	14/208,190	3/13/2014			Fuel Cell Mechanical Components
US	61/750,179	1/8/2013			Serialization of Fuel Cell Components
US	14/149,187	1/7/2014			Serialization of Fuel Cell Components
US	61/750,136	1/8/2013			Optical Measurement Method and Apparatus for Fuel Cell Components
US	14/147,785	1/6/2014			Optical Measurement Method and Apparatus for Fuel Cell Components
US	61/739,989	12/20/2012			End Plates and Interconnects with Different CTE Values for Fuel Cell Stack
US	61/923,886	1/6/2014			Structure and Method for Indication of Fuel Cell Poisons in Fuel Stream and of Bed Breakthrough
US	14/589,403	1/5/2015			Structure and Method for Indicating Undesirable Constituents in a Fuel Cell System

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WO	PCT/US15/10137	1/5/2015			Structure and Method for Indication of Fuel Cell Poisons in Fuel Stream and of Bed Breakthrough
US	61/885,048	10/1/2013			Pre-Formed Powder Delivery to Powder Press Machine
US	14/501,572	9/30/2014			Pre-Formed Powder Delivery to Powder Press Machine
WO	PCT/US14/58251	9/30/2014			Pre-Formed Powder Delivery to Powder Press Machine
US	61/912,931	12/6/2013			Method of Measurement and Estimation of the Coefficient of Thermal Expansion in Components
US	14/559,214	12/3/2014			Method of Measurement and Estimation of the Coefficient of Thermal Expansion in Components
US	61/938,827	2/12/2014			Structure and Method for Fuel Cell System Where Multiple Fuel Cells and Power Electronics Feed Loads in Parallel Allowing for Integrated Electrochemical Impedance Spectroscopy ("EIS")
US	14/619,779	2/11/2015			Structure and Method for Fuel Cell System Where Multiple Fuel Cells and Power Electronics Feed Loads in Parallel Allowing for Integrated Electrochemical Impedance Spectroscopy ("EIS")
WO	PCT/US15/15425	2/11/2015			Structure and Method for Fuel Cell System Where Multiple Fuel Cells and Power Electronics Feed Loads in Parallel Allowing for Integrated Electrochemical Impedance Spectroscopy ("EIS")
US	14/246,716	4/7/2014			Parallel Control of Multiple Uninterruptable Power Modules ("UPMs")
US	61/824,025	5/16/2013			Corrosion Resistant Barrier Layer for a Solid Oxide Fuel Cell Stack and Method of Making Thereof
US	14/265,544	4/30/2014			Corrosion Resistant Barrier Layer for a Solid Oxide Fuel Cell Stack and Method of Making Thereof
WO	PCT/US14/35996	4/30/2014			Corrosion Resistant Barrier Layer for a Solid Oxide Fuel Cell Stack and Method of Making Thereof
US	13/905,383	5/30/2013			Measurement Device for Testing a Fuel

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
					Cell Stack
US	14/186,642	2/21/2014			Electrochemical Impedance Spectroscopy ("EIS") Analyzer and Method of Using Thereof
US	62/067,867	10/23/2014			Contact Mesh for Fuel Cell Stacks
US	62/078,596	11/12/2014			SOFC Cathode Compositions with Improved Resistance to SOFC Degradation
US	62/185,261	6/26/2015			SOFC Cathode Compositions with Improved Resistance to SOFC Degradation
US	14/936,250	11/9/2015			SOFC Cathode Compositions with Improved Resistance to SOFC Degradation
WO	PCT/US15/59754	11/9/2015			SOFC Cathode Compositions with Improved Resistance to SOFC Degradation
US	62/022,942	7/10/2014			Methods and Systems for Detecting Defects in a Fuel Cell Stack
US	14/792,923	7/7/2015			Methods and Systems for Detecting Defects in a Fuel Cell Stack
US	61/925,340	1/9/2014			Duplex Coating for SOFC Interconnect
US	14/567,158	12/11/2014			Duplex Coating for SOFC Interconnect
US	62/188,858	7/6/2015			Real Time Monitoring and Automated Intervention Platform for Long Term Operability of Fuel Cells
US	62/133,723	3/9/2015			Methods and Systems for Detecting Defects in a Component of a Fuel Cell Stack
US	61/925,383	1/9/2014			Improved Method of Fabricating an Interconnect for a Fuel Cell Stack
US	14/566,267	12/10/2014			Overvoltage Snubber for Grid Tie Inverter
US	61/909,426	11/27/2013			Fuel Cell Interconnect with Reduced Voltage Degradation over Time
US	14/543,095	11/17/2014			Fuel Cell Interconnect with Reduced Voltage Degradation over Time

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
WO	PCT/US14/65877	11/17/2014			Fuel Cell Interconnect with Reduced Voltage Degradation over Time
US	62/132,003	3/12/2015			Fuel Cell Interconnects with Nitride Layer and Methods of Making Thereof
US	62/222,348	9/23/2015			Fuel Cell Interconnects with Nitride Layer and Methods of Making Thereof
US	62/109,227	1/29/2015			Fuel Cell Stack Assembly and Method of Operating the Same
US	62/007,645	6/4/2014			Hermetic Seal High Temperature Dielectric with Improved Manufacturability
US	14/725,414	5/29/2015			Hermetic High Temperature Dielectric Conduit Assemblies
WO	PCT/US15/33645	6/2/2015			Hermetic High Temperature Dielectric Conduit Assemblies
US	62/115,714	2/13/2015			Containerized Portable Fuel Cell System and Transportation Method
US	62/128,910	3/5/2015			Knock Sensor and Passive Pressure Relief Components for Detecting and Correcting Fuel Cell System Operational Conditions
US	62/111,875	2/4/2015			Carbon Dioxide Separator, Fuel Cell System Including Same, and Method of Operating the Fuel Cell System
US	62/241,261	10/14/2015			Leak Detection Method for Solid Oxide Fuel Cells Using Hydrogen or Other Detectable Gases
US	61/944,381	2/25/2014			Composition and Processing of Metallic Interconnects for SOFC
US	14/629,807	2/24/2015			Composition and Processing of Metallic Interconnects for SOFC Stacks

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
WO	PCT/US15/17226	2/24/2015			Composition and Processing of Metallic Interconnects for SOFC Stacks
US	61/971,700	3/28/2014			Packaging Design and Method of Packing/Unpacking Fuel Cell Components in a Recyclable Package Safe for Shipping, Transport, and Automation
US	14/671,156	3/27/2015			Fuel Cell Package and Method of Packing and Unpacking Fuel Cell Components
WO	PCT/US15/23013	3/27/2015			Fuel Cell Package and Method of Packing and Unpacking Fuel Cell Components
US	62/153,271	4/27/2015			Carbon Dioxide Separator Membrane Structure, Method of Manufacturing Same, and Carbon Dioxide Separator Including Same
US	61/975,233	4/4/2014			Fuel Cell System Glow Plug Assembly Seal
US	14/666,495	3/24/2015			Fuel Cell System Glow Plug and Method of Forming Same
WO	PCT/US15/22122	3/24/2015			Fuel Cell System Glow Plug and Method of Forming Same
US	61/975,233	4/24/2014			Anode Contact Ink for Improved SOFC Stack Life
US	14/689,243	4/17/2015			Fuel Cell Interconnect with Reduced Voltage Degradation Over Time
US	62/215,285	9/8/2015			Fuel Cell Ventilation System
US	62/137,433	3/24/2015			Perimeter Electrolyte Reinforcement Layer Composition for Solid Oxide Fuel Cell Electrolytes
US	62/091,821	12/15/2014			High Temperature Air Purge of Solid Oxide Fuel Cell Anode Electrodes
US	62/050,424	9/15/2014			Air Cooled Fuel Cell System
US	14/850,044	9/10/2015			Air Cooled Fuel Cell System
US	13/062,643	5/12/2011			Recuperative Heat Exchanger, Fuel Cell System Including Recuperative Heat Exchanger, And Method Of Operating Same

<u>Geography</u>	<u>Serial No.</u>	<u>Filing Date</u>	<u>Patent Number</u>	<u>Patent Date</u>	<u>Title</u>
US	62/086,938	12/3/2014			Inspection Method for the Effect of Composition on the Bond Strength of a Metallized Alumina Ceramic
US	14/872,365	10/1/2015			Inspection Method for the Effect of Composition on the Bond Strength of a Metallized Alumina Ceramic
US	12/689,726	1/19/2010	8,026,013	9/27/2011	Annular or Ring Shaped Fuel Cell Unit
US	62/129,509	3/6/2015			Modular Pad for a Fuel Cell System
US	62/238,351	10/7/2015			Fuel Cell Stack Column Including Stress-Relief Components
US	62/171,145	6/4/2015			Methods of Battery Integration
US	14/853,030	9/14/2015			Electrochemical Impedance Spectroscopy ("EIS") Analyzer and Method of Using Thereof
US	62/237,711	10/6/2015			Sorbent Bed Assembly and Fuel Cell System Including Same