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<i>Cunjiang Yu</i>	

(Invited) self-Powered Multifunctional Sensing and Control for Smart Wearables and Human-Machine Interfaces	1778
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<i>Youyuan Man, Shoichi Nishitani, Toshiya Sakata</i>	
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<i>Yu-Cheng Chen, Ningyuan Nie</i>	
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<i>Jerom Michon, Derek Kita, Juejun Hu</i>	
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<i>Kuei-Lin Liu, Zong-Hong Lin, Kai Po Fan</i>	
Simple Fabrication Method for Solution-gated One-piece Transistors for Biosensing Applications	1790
<i>Ritsu Katayama, Toshiya Sakata</i>	
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<i>Pu-Xian Gao</i>	
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<i>Chia Kai Lin, Chia-Che Wu, Akhil Kavanal Paulose, Yueh-Ju Hou, Chee-Seng Lee, Heuy-Ling Chen, Yu-Lin Wang</i>	
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<i>Changsheng Wu, Chenhang Li, Heling Wang, Yonggang Huang, John Rogers, Xiaoyue Ni</i>	
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<i>Amay J Bandodkar</i>	

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<i>Akhil K Paulose, Yueh-Ju Hou, Vishal Mani Kalaimani, Yu-Lin Wang</i>	
Wafer-Scale Nanocracks Enable Single-Molecule Detection and on-Site Analysis	1803
<i>Li-Chia Lu, Yu-Ling Chang, I-Chun Lai, Sih-Wei Chang, Aileen Y. Sun, Hsuen-Li Chen, Dehui Wan</i>	
(Invited) Development of Cell-Based Biosensor Platform for Monitoring the Effect of Functional Nanocarriers As Drug Delivery System on Breast Cancer Cells	1805
<i>Shu-Ping Lin</i>	
(Invited) triboelectric Nanogenerator Based Sensors for Water Quality Evaluation	1807
<i>Ken Pradel, Toshiyuki Urano, Junji Mizukami</i>	
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<i>Arnab Pal, Anindita Ganguly, Zong-Hong Lin</i>	
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<i>Yu-Ying Cheng, Yu-Zih Lin, Arnab Pal</i>	

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<i>Wubin Bai</i>	
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<i>Chuan Wang</i>	
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<i>Kai Fan, Kuei-Lin Liu, Jun-Hsuan Chung, Zong-Hong Lin</i>	
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<i>Sheng-Chun Hung, Chia-Chi Chen, Yu-Cheng Lin, Chung-Wei Lin</i>	
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<i>Shu-Yi Tsai, Akhil K Paulose, Vishal Mani Kalaimani, Chia Kai Lin, Yu-Lin Wang</i>	
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<i>Roger Narayan</i>	
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<i>Bor-Ran Li</i>	
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<i>Donghan Lee, Dayoon Kang, Sumin Cho, Moonwoo La, Jinah Jang, Dongwhi Choi</i>	
The Combination of Upconversion Nanoparticles and Photodynamic Therapy for Alzheimer's Disease Treatment in Real-Time Monitoring	1825
<i>Yu Chien Lin, Yu-Rong Wang, Tai-Ling Huang, Jung-Chih Chen</i>	

(Invited) bionic Composite Films for Biomechanical Energy Harvesting and Self-Powered Sensing Applications.....	1827
<i>Zong-Hong Lin, Parag Parashar</i>	
(Invited) hand-Held Florescence Microscope for Single Micro/Nano Particle Imaging.....	1828
<i>Muhammad Sami, Umer Hassan</i>	
High-Precision Microdisk Laser Particles by Active Photoelectrochemical Etching for Cell Barcoding	1829
<i>Debarghya Sarkar, Paul Dannenberg, Nicola Martino, Kwon-Hyeon Kim, Seok-Hyun Yun</i>	
Fabrication of Aptamer-based Field Effect Transistor Sensors for Detecting Mercury Ions	1830
<i>Yu-Lin Wang, Guan-Cheng Zeng, Chun-Ta Lee, Chia Kai Lin, Tzu-Han Kuo, Akhil K Paulose, Zong-Hong Lin, Sheng-Chun Hung</i>	

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<i>Songhu Bi, Zhen Geng, Liming Jin, M Liu, Mingzhe Xue, Cunman Zhang</i>	
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<i>Jingjing Zhang, Bing Li, Cunman Zhang</i>	
(Digital Presentation) Quantifying the Effect of Potential Cycling Conditions on the Resulting Performance of Stainless Steel as an Anode for Alkaline Water Electrolysis.....	1835
<i>Thomas Ferriday, Suhas Nuggehalli Sampathkumar, Peter Hugh Middleton, Jan Van Herle</i>	
(Digital Presentation) Electrospun Bimetallic Cu/Zn Selenide @ Carbon Nanofiber Electrocatalysts for Oxygen Evolution and Oxygen Reduction	1837
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<i>Mark Symes</i>	
Low-Temperature Wastewater Electrolysis for H ₂ and Clean Water Generation.....	1840
<i>Juan A. Lopez-Ruiz, Nickolas W Riedel, Fan Lin, Lyndi E. Strange, Oliver Y. Gutierrez Tinoco, Shuyun Li, Lesley J. Snowden-Swan</i>	
(Invited) Techno-Economic Analysis on Near-Term and Future Projections of Levelized Cost of Hydrogen for Low-Temperature Water Electrolysis Technologies.....	1842
<i>Yaset Acevedo, Jennie Huya-Kouadio, Jacob Prosser, Kevin McNamara, Brian James</i>	
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<i>Victor Manuel Maestre, Alfredo Ortiz Sainz De Aja, Inmaculada Ortiz Uribe</i>	
High Purity Hydrogen and Carbon Dioxide Separation with Electrochemical Pump Operation of HT-PBI Fuel Cell at 120°C.....	1846
<i>Derrick Maxwell, Qiang Sun, Humberto Rojas, Ian Kendrick, Ryan Pavlicek, Emory De Castro, Akarsh Aurora, Sanjeev Mukerjee</i>	
Performance and Stability of Molten Carbonate Fuel Cell Cathode Electrode Under Carbon Capture Endurance Tests	1847
<i>Abdelkader Hilmi, Timothy Geary, Adam Franco, Chao-Yi Yuh, Carl Willman</i>	
Examining the Upstream Renewable Energy Source Variability on PEM Water Electrolyzer Behavior	1849
<i>Abhinand Ayyaswamy, Navneet Goswami, Bairav Sabarish Vishnugopi, Partha P. Mukherjee</i>	

An Integrated Analytics of PEM Electrolyzer and Steel Making	1850
<i>Navneet Goswami, Abhinand Ayyaswamy, Bairav Sabarish Vishnugopi, Rebecca Ciez, Partha P. Mukherjee</i>	

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Temperature Dependence of Water Crossover in Proton Exchange Membrane Water Electrolysis	1851
<i>Maurice Friedrichs-Schucht, Frédéric Hasché, Mehtap Oezaslan</i>	
Potential Dependence of Ir Dissolution Using Time-Resolved Measurements	1853
<i>Nancy N. Kariuki, Deborah J. Myers, Jae Hyung Park, Xiaohua Wang, Rajesh Ahluwalia</i>	
The Impact of Cation Contamination on Proton Exchange Membrane Water Electrolyzer (PEMWE).....	1855
<i>Qiang Sun, Fan Yang, Qingying Jia, Cortney Mittelsteadt</i>	
Ionic Decoupling in PEM Water Electrolyzers and Cost-Effective Cell Components	1857
<i>Sebastian Karl Proch, Ulf Bexell, Jörgen Westlinder</i>	
Optimization of Time-of-Flight Secondary Ion Mass Spectrometry for Analysis of Porous Transport Layers.....	1858
<i>Genevieve Stelmacovich, Lonneke Van Eijk, Michael Walker, David A. Cullen, Sam Ware, James L. Young, Guido Bender, Svitlana Pylypenko</i>	
Fundamental Insights into Reaction Centers and Catalytic Mechanisms of Ni- and Co-Based Layered Oxyhydroxides for the Oxygen Evolution Reaction.....	1859
<i>Zhenhua Zeng, Fabio Dionigi, Jing Zhu, Junwu Liang, Wei-Xue Li, Peter Strasser, Jeffrey Greeley</i>	
Faraday Efficiency Study of Pressurized Alkaline Water Electrolyzer.....	1860
<i>Jian (Jim) Zhang, Zhenwu Bie, Huayong Zhang</i>	
Gas Crossover and Supersaturation in Advanced Alkaline Water Electrolysis.....	1861
<i>Rodrigo Lira Garcia Barros, Joost Kraakman, Thijs Theodorus De Groot, John Van Der Schaaf</i>	
Numerical Measurement of the Effective Electrical Conductivity of Electrolyte-Gas Bubble Dispersions	1863
<i>Arvind Pari, Johan Tiemen Padding, Remco Hartkamp</i>	
Electrochemical Analysis of Anion Exchange Membrane Water Electrolyzers (AEMWE).....	1864
<i>Suhas Nuggehalli Sampathkumar, Thomas B. Ferriday, Peter Hugh Middleton, Jan Van Herle</i>	

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(Invited) Clean Hydrogen: From Colors to Emissions	1865
<i>Ahmet Kusoglu</i>	
(Invited, Digital Presentation) The Low T Water Electrolyzer Current-Voltage Relationship: Electrocatalysis and More	1866
<i>Shimshon Gottesfeld</i>	
(Invited) Challenges and Opportunities of Alkaline Water Electrolysis	1868
<i>Thijs Theodorus De Groot</i>	
(Invited) Decoupled Water Splitting for Green Hydrogen Production: Reshaping Water Electrolysis	1870
<i>Avner Rothschild, Hen Dotan, Avigail Landman, Gideon Grader</i>	
(Invited) Single Cell Voltages for Safety, Predictive Maintenance, and Process Optimization of Industrial Scale Bipolar Electrolyzers (Learned Lessons From Over 30 Years Experience in Chlor-Alkali-Electrolysis)	1871
<i>Helmut Lademann, Gilles Tremblay, Georges Simard, Jacques Dubois, Said Berriah</i>	

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In-Situ Electrolyzer Monitoring Using Electrochemical Impedance Spectroscopy (EIS).....	1872
<i>Sasha Dass, Christopher Barber, Kate Fischl, Leah Garber, Brian Harrington, Sarven Ipek, Radhika Marathe, Tony Montalvo, Nicola O'Byrne, Atulya Yellepeddi, Sheila Seidel, Sue Zheng</i>	
Dynamic Modeling and Operation of a Green Hydrogen Fueling Station for Heavy-Duty Fuel Cell Vehicles	1874
<i>Yifan Wang, James M. Fenton, Paul Brooker</i>	
Mathematical Modeling of the Performance-Degradation Mechanisms of Cation-Contaminated Proton-Exchange-Membrane Water Electrolysis.....	1876
<i>Arthur Dizon, Elliot Padgett, Anthony Adesso, Jacob A Wrubel, Rangachary Mukundan, Bryan S. Pivovar, Shaun M Alia, Adam Z. Weber</i>	
Multi-Scale Simulations of Bubble Transport in an Alkaline Water Electrolyzer	1878
<i>Ryo Kanemoto, Hideki Suwa, Naruhisa Tsukase, Takuto Araki, Shigenori Mitsushima</i>	
Modelling of a Proton-Exchange Membrane Electrolysis Cell with Liquid-Fed Cathode	1880
<i>Michael Robert Gerhardt, Jenny S Østenstad, Xavier Raynaud, Alejandro O Barnett</i>	
Towards Multiphase Modeling and Simulation of Alkaline Water Electrolysis through Pore-Resolved Foam Electrodes	1881
<i>Kevin Van Droogenbroek, Christos Georgiadis, Joris Proost</i>	
(Invited) Overall Research on Electrode Coating Processes (OREO) - the Role of Imaging and Spectroscopy in Scale-up Fabrication of Low Temperature Water Electrolyzers.....	1883
<i>Jasna Jankovic, Maryam Ahmadi, Mariah Batool, Linda Ney, Irene Franzetti, Jeronimo Horstmann, Sunilkumar Khandavalli, Jayson Foster, Andres O. Godoy, Scott A Mauger, Svitlana Pylypenko, Thomas Lickert, Nada Zamel, Tom Smolinka, Ulf Groos</i>	
The Structure-Performance Relation for Alkaline OER Electrocatalyst Investigated Using Analytical Electron Microscopy	1884
<i>Haoran Yu, Luigi Osmieri, Nancy N. Kariuki, Deborah J. Myers, Raphael P. Hermann, Alexey Serov, Piotr Zelenay, David A. Cullen</i>	
(Invited) Understanding Oxygen Transport in Polymer Electrolyte Membrane Water Electrolyzers Using X-Ray Computed Tomography	1886
<i>Iryna Zenyuk, Hung-Ming Chang, Dilworth Y. Parkinson, Elif Karatay, Nemanja Danilovic</i>	
Electron Microscopy Investigation of Porous Transport Layer Coatings	1887
<i>David Arregui-Mena, David A. Cullen, Neus Domingo Marimon, Genevieve Stelmacovich, Svitlana Pylypenko, Sam Ware, Guido Bender</i>	
In Situ Vs. Ex Situ Degradation Studies of IrO ₂ -Based Porous Catalysts for Proton Exchange Membrane Water Electrolysis.....	1888
<i>Silvia Duran, Marco Faustini, Alexis Grimaud, Jennifer Peron</i>	
Comparative Studies of Ir-Based PEM Electrolyzers Via Operando ‘Tender’ X-Ray AP-XPS	1890
<i>Rebecca Hamlyn, Ethan J. Crumlin</i>	

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(Invited) Advancing Hydrogen Generation Technologies Assisted by a Solid International Benchmarking Effort	1891
<i>Marcelo Carmo, Katherine E. Ayers, Guido Bender, Boris Bensmann, Aldo Gago, Torben Gotschalk, Karl Gross, Richard Hanke-Rauschenbach, Jens Oluf Jensen, Mikkel Ryker Kraglund, Olga A Marina, George Roberts, Sebastian Metz, Tom Smolinka, Ellen B Stechel, Thomas Turek, Chengxiang("cx") Xiang</i>	
(Invited) A Critical Review on the Expressions of Energy Efficiency Used in Low Temperature Water Electrolysis.....	1892
<i>Claude Lamy</i>	

(Invited) Enabling Hydrogen at Scale Using Low-Temperature Electrolysis with Sustainable Materials.....	1894
<i>Sanjeev Mukerjee</i>	
Autonomous Materials Synthesis Strategies Towards Accelerated Discovery of Novel Functional Nanomaterials for Green Energy Production.....	1895
<i>Ali Abdelhafiz</i>	

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(Invited) Innovative Membrane Electrode Assemblies for the Next Generation Proton Exchange Membrane Water Electrolyzers	1896
<i>Stoyan Bliznakov, Zhiqiao Zeng, Ryan Ouimet, Allison Niedzwiecki, Christopher Capuano, Katherine E. Ayers, Leonard J. Bonville, Radenka Maric</i>	
(Invited) Lowering the Noble Metal Requirement for PEM Water Electrolysis: Membrane Electrode Assembly and Porous Transport Layer Design Considerations.....	1898
<i>Maximilian Bernt, Matthias Felix Ernst, Hubert A. Gasteiger, Matthias Kornherr, Vivian Meier, Maximilian Möckl, Carina Schramm</i>	
(Invited) Hydroxide Exchange Membrane Electrolyzers for Green Hydrogen: From Organic Chemistry to MW Stacks.....	1900
<i>Yushan Yan</i>	
(Invited) Recent Polymer Electrolyte Membrane (PEM) Electrolysis Research Advances in the Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) Consortium.....	1901
<i>Deborah J. Myers, Bryan S. Pivovar, Rangachary Mukundan, Shaun M Alia, Guido Bender, Scott A Mauger, Siddharth Komini Babu, Alexey Serov, Alex Badgett, Rajesh Ahluwalia</i>	
(Invited) Green Hydrogen R&D in South Africa.....	1903
<i>Dmitri Bessarabov</i>	

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(Invited) Advances in Composite Membranes Design and Scale up for Proton Exchange Membrane Water Electrolysis.....	1904
<i>Alexander Agapov, Amr Kobaisy, Christin Wilbert, Ellie McCloskey, Prashanth Abraham, Raya Johnson, Yingying Chen, Paul Kiernan, John Gardner, Taichi Hamamoto</i>	
(Invited) Carbon-6 Based Sustainable Value Chains Towards Specialties and (Aviation) Fuels Based on Low-Temperature PEM-Water Electrolysis and Syngas Fermentation.....	1905
<i>Guenter Schmid, Heinz Neubert, Philipp Lettenmeier, Thomas Haas</i>	

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Advancements in Thin, Reinforced Proton Exchange Membranes for Water Electrolysis.....	1907
<i>Ryan Gebhardt, Jacob A Wrubel, Samuel Bartuska, Meghan Vander Woude, Ben Wright, Guido Bender, Andrew Park</i>	
Alkaline-Stable Anion Conducting Ionomers for Anion Exchange Membrane Water Electrolyzers	1908
<i>Mahamuda Akter, Jiyun Shin, Jong-Hyeok Park, Soryong Chae, Jin Soo Park</i>	
A New Semi-Empirical Method of Quantifying Electrolyzer Degradation.....	1909
<i>Shaina Brianna Errico, Serafina Fortiner, Devashish Kulkarni, Andrew R Motz</i>	
An Open-Source Continuum Model for Anion-Exchange Membrane Water Electrolysis	1910
<i>Michael Robert Gerhardt, Alejandro O Barnett, Thulile Khoza, Patrick Fortin, Sara Andrenacci, Alaa Y. Faid, Pål Emil England Karstensen, Svein Sunde, Simon Clark</i>	
A Novel Stack Approach to Enable High Round Trip Efficiencies in Unitized PEM Regenerative Fuel Cells.....	1911
<i>Alex Keane, Andy B. Roemer, George Roberts, Toby Junker, Christopher Capuano, Katherine E. Ayers, Shiyi Wang, Adam Z. Weber</i>	

A Study on the Electrochemical Performance of MOF Based HER Catalysts for Anion Exchange Membrane Water Electrolysis.....	1912
<i>Hyein Lee, Eunae Cho</i>	
Boosting Ethanol Oxidation by 3d transition Metal-Based Nano-Heterostructure for Energy-Saving Hydrogen Production and Biomass Upgrading.....	1913
<i>Hainan Sun, Woochul Jung</i>	
Catalyst Application in Three-Dimensional Porous Electrodes for Alkaline Electrolysis.....	1914
<i>Andrea Russo, Jens Oluf Jensen, Mikkel Rykær Kraglund, Wenjing (Angela) Zhang, Eunae Cho</i>	
Cobalt Nanocube Electrocatalysts Comprising Sub-Nanometer Oxide-Phosphide Hetero-Interface for Highly Efficient Water Electrolysis	1915
<i>Gyuyong Jang, Jong Hyeok Park</i>	
Design of Self-Repairing Anode Catalysts for Alkaline Water Electrolysis with Both OER Activity and Durability Via Colloidal Self-Assembly	1916
<i>Daiji Mizukoshi, Tatsuya Taniguchi, Yuta Sasaki, Yoshinori Nishiki, Zaenal Awaludin, Takaaki Nakai, Akihiro Kato, Shigenori Mitsushima, Yoshiyuki Kuroda</i>	
Development of High Durable Pore-Filling Anion Exchange Membranes for Water Electrolysis Application.....	1919
<i>Dahye Jeong, Minyoung Lee, Jong-Hyeok Park, Soryong Chae, Jin Soo Park</i>	
Earth-Abundant Electrocatalysts for the Oxygen Evolution Reaction Supported on Layered Zirconium Phosphate Nanomaterials.....	1920
<i>Jorge L Colon</i>	
Imidazolium-Based Anion Exchange Membranes for Electrochemically Converted Liquid Organic Hydrogen Carrier.....	1921
<i>Minyoung Lee, Dahye Jeong, Jiyun Shin, Mahamuda Akter, Jong-Hyeok Park, Soryong Chae, Jin Soo Park</i>	
Impact of Iron Impurities on the Performance of PEM Water Electrolyzers.....	1922
<i>James Sweeney, Timothy Patterson, Leonard J. Bonville, Ugur Pasaogullari, Stoyan Bliznakov</i>	
Iridium Nanosheet Catalysts Supported on Titanium Oxide for Oxygen Evolution Reaction in Polymer Electrolyte Membrane Water Electrolysis.....	1923
<i>Dongwon Shin, Sangjae Lee, Junu Bak, Jeonghan Roh, Kwangho Lee, Hyunwoo Chang, Eunae Cho</i>	
Uniformly Dispersed Cobalt Catalyst on the Coffee Waste-Derived Carbon Support for Hydrogen Evolution Reaction.....	1924
<i>Bayaraa Sukhbaatar, Jinmyeong Seo, Wang Qing, Sanghwa Yoon, Bongyoung Yoo</i>	
Value-Added Electrolysis Hydrogen Production Via Anodic Oxidation of Ethylene Glycol over an Efficient Pd-Based Single-Atom Catalyst	1925
<i>Meng-Che Tsai, Endalkachew Moges, Wei-Nien Su, Bing-Joe Hwang</i>	

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(Invited) Catalysts and Interfaces for Low-Temperature Water Electrolysis.....	1926
<i>Thomas F. Jaramillo</i>	
Rapid Electrocatalyst Discovery	1927
<i>Andrey Ivankin</i>	
Size-Controlled Synthesis of IrO ₂ nanoparticles at High Temperatures for the Oxygen Evolution Reaction.....	1928
<i>Marko Malinovic, Paul Paciok, Ezra Shanli Koh, Moritz Geuß, Jisik Choi, Philipp Pfeifer, Jan Philipp Hofmann, Daniel Göhl, Marc Heggen, Serhiy Cherevko, Marc Ledendecker</i>	
Facile Synthesis of Supported Ir-Based OER Electrocatalysts Via Sputtering.....	1930
<i>Qingying Jia, Qiang Sun, Fan Yang, Amir Peyman Soleymani, Jasna Jankovic, Cortney Mittelsteadt</i>	

(Invited) Ir-Based Catalysts for the Electrochemical Oxygen Evolution Reaction in Acidic Environments.....	1932
<i>Hong Nhan Nong, Hoang Phi Tran, Detre Teschner, Travis E. Jones, Robert Schlögl, Peter Strasser</i>	
Effect of Metal-Substitution within Ruthenium Oxide on Structure and Oxygen Evolution Activity and Stability.....	1934
<i>Luis A Albiter, Kathleen O. Bailey, Jose Fernando Godinez Salomon, Christopher P. Rhodes</i>	

I01 - Membrane and Ionomer Technologies

(Invited) Proton Exchange Membrane Electrolyzers Based on Sub-Micron Thick Membranes.....	1935
<i>Daniel V. Esposito, Kyungmin Yim, Daniela V. Fraga Alvarez, Lucas Cohen, Jingjing Jin, Alan C. West, Matthew S Weimer, Staci Moulton, Arrelaine A Dameron, Katherine E. Ayers, Christopher Capuano, Serafina Fortiner, Justin Hawkes, Jennifer Glenn</i>	
Durability and Performance of Poly(norbornene) Membranes and Ionomers in Alkaline Electrolyzers.....	1936
<i>Habin Park, Hui Min Tee, Parin Shah, Chandler Dietrich, Paul Kohl</i>	
Using a Tunable Triblock Cationic Polymer to Unravel Performance and Durability Effects in Anion Exchange Membrane Based Electrolysis.....	1937
<i>Ivy Wu, Mei-Chen Kuo, Kevin Dunn, Jack Creel, Andrew Johnson, Kaylee Beiler, Andrew M. Herring</i>	
(Invited) Aemion ⁺ ® AEM Water Electrolysis with Excellent Iridium-Free Performance and Industrially Relevant Stability in Hot, Caustic Electrolyte.....	1939
<i>Benjamin Britton, Marta Moreno</i>	
Poly(carbazole)-Based Anion Exchange Membranes Developed by Grafting Alkyl Ammonium Group.....	1941
<i>Santosh Adhikari, Jeffrey Michael Klein, Ivana Matanovic, Yu Seung Kim</i>	
(Invited) Impact of Phenyl Adsorption of Various Ionomers on the Performance of Anion Exchange Membrane Water Electrolyzers	1942
<i>Jeffrey Michael Klein, Ivana Matanovic, Michelle Lehmann, Tomonori Saito, Yu Seung Kim</i>	
Substitution of the Nafion [®] Ionomer with Hydroxypropyl Methylcellulose for Proton Exchange Membrane Water Electrolyzer.....	1943
<i>Jeong In Cha, Chaekyung Baik, Chanho Pak</i>	
Nanocomposite Anion Exchange Membranes for Aems Electrolyzers: Ion Transport and Carbonation Studies	1944
<i>Isabella Nicotera, Cataldo Simari, Mohamed Habib Ur Rehman, Dario R. Dekel, Vincenzo Baglio</i>	
Mechanical and Physio-Chemical Properties of Anion Exchange Membranes and Their Implications on Industrial Scale Water Electrolysis	1946
<i>Andre Klinger, Guenter Schmid, Nemanja Martic, Oscar Strobl, Michael Kress, Hannes Michaels, Teodora Ignat, Anna Maltenberger</i>	
Development of Membranes for Alkaline Water Electrolysis	1948
<i>Ruchika Gupta</i>	

I01 - Stack and System Engineering

(Invited) The Design, Fabrication, and Operation of a MW-Scale Low-Temperature Electrolyzer System to Support Industry and the U.S. Dept. of Energy	1950
<i>Kevin William Harrison, Claire Victor, Owen Smith, Asher Kirschbaum, David Sievers</i>	
(Invited) The Evolution of Membrane Electrochemical Cell Stacks and Balance of Plant Integration with Increasing Product Scale and Manufacturing Volume Ramp up	1951
<i>Luke T. Dalton, Andy B. Roemer, Jason Brown</i>	

(Invited) Electrolyser Manufacturing Scale-up Versus Design Development for Meeting Green H ₂ Targets	1952
<i>Kieran Fahy, Anson Sinanan, Nathan Joos</i>	

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Durability Study of Anode Catalysts from Iridium-Based Titanium Supports in Polymer Electrolyte Membrane Water Electrolyzers	1953
<i>Kui Li, Xiaojing Wang, Rangachary Mukundan, Jacob S. Spendelow, Siddharth Komini Babu</i>	
Ir _x Nb _{1-x} O ₂ Mixed Metal Oxides As Anode Catalyst for PEM Electrolysis: From Fundamentals to Application	1954
<i>Matthias Kroschel, Peter Strasser</i>	
Green Hydrogen via PEM Electrolysis – Avoiding Iridium Supply Limitations.....	1955
<i>Mark Clapp, Christopher Mark Zalitis, Margery Ryan</i>	
Magnetron-Sputtered Thin-Film Catalyst with Low-Ir-Ru Content for Water Electrolysis: Long-Term Stability and Degradation Analysis	1956
<i>Tomas Hrbek, Peter Kúš, Julia Kosto, Miquel Rodriguez, Iva Matolínová</i>	
(Invited) Extended Thin Film Platinum Group Metal Electrocatalysts with Different Mesoscale Morphologies.....	1957
<i>Christopher G. Arges, Deepra Bhattacharya</i>	
Iridium Deposited on Niobium-Doped Titanium Dioxide (NbTiO) for High-Stability and Effective Oxygen Evolution Reaction (OER) Catalyst in Acidic Environment.....	1958
<i>Hoang Tran, Hong Nhan Nong, Matthias Kroschel, Matej Zlatar, Serhiy Cherevko, Peter Strasser</i>	

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(Invited) Component Design and Electrode Optimization for AEM Electrolyzers	1959
<i>Noor Ul Hassan, Paul Kohl, William Earl Mustain</i>	
High Surface Area Metal Carbide Aerogels as Durable Catalyst for the Hydrogen Evolution Reaction.....	1960
<i>Lior Elbaz, Oran Lori</i>	

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(Invited) Passivated Anodes in Anion-Exchange Membrane Water Electrolyzers	1961
<i>Minkyoungh Kwak, Kasinath Ojha, Shannon W. Boettcher</i>	
Multi-Element Doping Boosts a Layered Metal Oxide Electrode for Superior Water Oxidation	1962
<i>Jian Wang</i>	
Advanced Porous Transport Layers for PEM Water Electrolyzers: Impact of the Interfacial and Bulk Properties of the PTLs on the Electrolyzers Performance	1963
<i>Zhiqiao Zeng, Stoyan Bliznakov, Leonard J. Bonville, Radenka Maric</i>	
(Invited) Electrochemical Construction of 3-D Catalyst Layer on Ordered Liquid-Gas Diffusion Electrode for Highly Stable and Cost-Efficient PEM Water Electrolyser	1965
<i>Changfeng Yan, Chao Ding, Zhuo-Xin Lu, Yan Shi</i>	
Effects of Porous Transport Layer Coating Inhomogeneities on PEM Water Electrolyzer	1967
<i>Chang Liu, Jacob A Wrubel, Elliot Padgett, Guido Bender</i>	
Rational Design of Membrane Electrode Assembly for Anion Exchange Water Electrolysis.....	1968
<i>Matteo Rossini, Burak Koyuturk, Björn Eriksson, Amirreza Khataee, Göran Lindbergh, Ann Cornell</i>	
Design of Noble-Metal-Free Membrane Electrode Assemblies Based on Metal Chalcogenides for Electrochemical Hydrogen Production Via Alkaline Seawater Electrolysis.....	1970
<i>Trung Ngo Thanh, Aleks Arinchtin, Marvin Frisch, Linus Hager, Paul Wolfgang Buchheister, Jochen Alfred Kerres, Peter Strasser</i>	

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Membrane Electrolyzers for Hydrogen Production: From Catalyst Fundamentals to Devices	1972
<i>Grace Lindquist, Shannon W. Boettcher</i>	
Structural Transformations in Ni (Oxy)Hydroxide Host Structures Under Operating Conditions for Oxygen Evolution Electrocatalysts	1973
<i>Fabio Dionigi, Zhenhua Zeng, Jing Zhu, Thomas Merzdorf, Malte Klingenhof, Paul Wolfgang Buchheister, Wei-Xue Li, Jeffrey Greeley, Peter Strasser</i>	
Cooperative Fe-Sites in Nickel and Cobalt Oxyhydroxides	1974
<i>Liam Peter Twight, Yingqing Ou, Bipasa Samanta, Lu Liu, Santu Biswas, Jessica L. Fehrs, Maytal Caspary-Toroker, Shannon W. Boettcher</i>	
Nife LDH: From Molecular Understanding to Highly Active Single Cell Measurements	1975
<i>Malte Klingenhof, Hanna Trzesniowski, Lukas Metzler, Susanne Koch, Fabio Dionigi, Severin Vierrath, Peter Strasser</i>	
Reaching PEM Performance Parity with Anion Exchange Membrane Electrolyzers	1976
<i>Sergio Ivan Perez Bakovic, Alex Keane, Marcelo Carmo, Diana De Porcellinis</i>	
(Invited) Core-Shell Fe ₃ O ₄ @CoFe ₂ O ₄ Spinel Nanoparticles for the Oxygen Evolution Reaction in Alkaline Media	1977
<i>Lisa Royer, Iryna Makarchuk, Tristan Asset, Benjamin Rotonelli, Benoit P. Pichon, Antoine Bonnefont, Elena Savinova</i>	
Electrochemical Activation of NiFe ₂ O ₄ for the Oxygen Evolution Reaction in Alkaline Media	1979
<i>Emily K. Volk, Rebecca R. Beswick, Stephanie Kwon, Shaun M Alia</i>	
Metallic Glass Nanofoam Anode Catalysts for Anion-Exchange Membrane Water Electrolyzers	1981
<i>Qiurong Shi, Michael J. Zachman, Deborah J. Myers, Hui Xu, Gang Wu</i>	
Autonomous Catalyst Development for Alkaline Electrolysis	1982
<i>Enzo Moretti, Ragnar Kiebach, Mikkel Rykær Kraglund, Nis Fisker-Bødker, Tejs Vegge</i>	

Energy Technology Division Supramaniam Srinivasan Young Investigator Award Address

(Energy Technology Division Supramaniam Srinivasan Young Investigator Award) Fundamental Insights into the Oxygen Evolution Reaction from Epitaxial Oxide Thin Films	1983
<i>Kelsey A Stoerzinger</i>	

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(Invited) MEA Technologies for PEM Electrolyzers: Overview and Perspectives	1984
<i>Fan Yang, Qiang Sun, Qingying Jia, Cortney Mittelsteadt</i>	
Investigation of Surface Chemistry of Pemwes Iridium Oxide Catalyst Layers as a Function of Ink Aging Time	1986
<i>Jayson Foster, Xiang Liu, Erin Creel, Jianlin Li, Haoran Yu, David A. Cullen, Nancy N. Kariuki, Jaehyung Park, Deborah J. Myers, Alexey Serov, Svitlana Pylypenko</i>	
Nanocomposite Electrodes and Membranes for PEM Electrolysis	1987
<i>Sara Cavaliere, Ignacio Jiménez-Morales, Joumada Al Cheikh, Deborah J. Jones, Jacques Rozière</i>	
Development of Low Iridium Catalyst Layer Structure for a Water Electrolysis Cell	1989
<i>Norihiro Yoshinaga, Yoshitsune Sugano, Taishi Fukazawa, Akihiko Ono, Yoshihiko Nakano</i>	
Anodized Stainless Steel 316 and 304 Alloys As Bifunctional Water Splitting Electrocatalytic Materials in Alkaline Media	1991
<i>Asmaa R. Heiba, Shima Abd El-Hamid, Ehab El Sawy</i>	
(Invited) Effects of PTL Coating Thickness on PEM Water Electrolyzer Performance	1992
<i>Guido Bender, Sam Ware, Tobias Schuler, Zhenye Kang, James L. Young</i>	

Mechanistic Interrogation of the Role of Electrode Microstructural Attributes in PEM Water Electrolysis	1993
<i>Navneet Goswami, Abhinand Ayyaswamy, Bairav Sabarish Vishnugopi, Partha P. Mukherjee</i>	
Development and Characterization of Microporous Layers on Porous Transport Layers for Proton Exchange Membrane Water Electrolyzers.....	1994
<i>Ryan J. Ouimet, Serafina Fortiner, Devashish Kulkarni, Iryna Zenyuk, Bryan Erb, Andrew Smeltz, Christopher Capuano</i>	
Transport Properties of Iridium Oxide Catalyst Layers for Proton Exchange Membrane Water Electrolyzers.....	1995
<i>Kara Ferner, Scott A Mauger, Guido Bender, Shawn Litster</i>	
Performance of Solvent Substituted Ionomer Dispersions in Catalyst Layer for Hydrogen-Based Energy Conversion Devices	1996
<i>Jong-Hyeok Park, Jiyoung Heo, Soryong Chae, Jin Soo Park</i>	
Cathode Dry Operation of Anion Exchange Membrane Water Electrolysis.....	1997
<i>Hiroshi Ito, Ruixiang Wang, Riku Hirose, Akane Kageyama, Masayoshi Ishida, Masato Ohashi</i>	

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Design Principles for Hydroxide Exchange Membrane Water Electrolyzers	1998
<i>Andrew W. Tricker, Jason Keonhag Lee, Jason R. Shin, Adam Z. Weber, Xiong Peng</i>	
On the Acid Stability of PGM-Free OER Catalyst for H ₂ Production in PEMWE	1999
<i>Di-Jia Liu</i>	
Cobalt-Iron Cyanometallates as Active Components for Water Electrolysis through Oxygen Evolution in Acid Medium	2000
<i>Pawel J. Kulesza, Iwona A. Rutkowska, Marzena Krech</i>	
Screening of Perovskites as Oxygen Evolution Reaction Catalysts in Alkaline Environment Tested Under Industrially Relevant Conditions	2001
<i>Fabian Luca Buchauer, Søren Bredmose Simonsen, Christodoulos Chatzichristodoulou</i>	
Enhancing Effect of Boron-Doping on the Activity of Nife-MOF-74 Towards Oxygen Evolution Reaction in Alkaline	2003
<i>Jiale Xing, Stoyan Bliznakov, Leonard J. Bonville, Radenka Maric</i>	
Anodic/Cathodic Properties of Ni Based Catalysts for Anion Electrolyte Membrane Water Electrolysis	2004
<i>Katsuyoshi Kakinuma, Guoyu Shi, Tetsuro Tano, Donald A. Tryk, Miho Yamaguchi, Makoto Uchida, Kazuo Iida, Chisato Arata, Sumitaka Watanabe, Akihiro Iiyama</i>	
Bifunctional Oxygen Electrocatalysis on Manganese Oxide.....	2006
<i>Evan Carlson, Michal Bajdich, William C. Chueh, J. Tyler Mefford</i>	
Investigation of Ni Foam and Stainless-Steel Mesh Substrates Toward Oxygen Evolution Reaction in Alkaline Seawater Electrolysis	2007
<i>Xiang Lyu, Alexey Serov, Jianlin Li</i>	
Anion Exchange Membrane Electrolyser Performance with Ni Ferrite Anodes Calcined at Different Temperatures	2008
<i>Angela Capri, Irene Gatto, Giuseppe Monforte, Carmelo Lo Vecchio, Vincenzo Baglio</i>	

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Targeted Grafting Metal-Organic Frameworks on Polyoxometalates for Efficient Water Oxidation.....	2009
<i>Kaihang Yue, Ya Yan, Bao Yu Xia</i>	
Phase-Controlled Synthesis of Nickel-Cobalt-Iron Sulfides By Electrodeposition for Efficient Oxygen Evolution Reaction	2010
<i>Rong He, Larissa Zhou, Hongmei Luo, Xiao-Dong Zhou, Meng Zhou</i>	

Oxygen Evolution Activity on Mo Added Zr Oxide Catalyst in Alkaline Solution.....	2011
<i>Koichi Matsuzawa, Atsushi Nozaka, Kazuya Hirose, Akimitsu Ishihara</i>	
Transition Metal Carbides and Nitrides As Electrocatalysts for Hydrogen and Oxygen Evolution Reactions	2014
<i>Jin Soo Kang</i>	
2D Layered Material Interface Confined Dynamically in-Situ Generated Ni(OH) ₂ Triggers Ultrafast Oxygen Evolution.....	2015
<i>Kassa Belay Ibrahim</i>	
Exsolution of Iron Nanoparticles from LCTFeO ₃ for Oxygen Evolution Reaction	2016
<i>Shangshang Zuo, Aaron Naden, John Thomas Sirt Irvine</i>	
Cobalt-Based Double Electrodeposited Catalysis for Efficient Oxygen Evolution in Anion Exchange Membrane Water Electrolysis	2017
<i>Sanghwi Han, Jeyong Yoon, Hyun S. Park</i>	
(Cu _{3-x} Ni _x)Co ₂ -Layered Double Hydroxide Nanosheets for Enhanced Electrocatalytic Activity Towards Overall Water Splitting	2018
<i>Sakshi Kansal, Satvik Anshu, Rahul Ravindran, Surbhi Priya, Amreesh Chandra</i>	
The Mechanism of Hydrogen Evolution Reaction at the Buried Interface of Silica-Coated Electrocatalysts.....	2019
<i>Jianzhou Qu, Zhou Yu, Alexander Urban</i>	
HER Kinetics of Pt and Ni in Alkaline Medium at Elevated Temperatures (25-200 °C) and Pressures (1-50 bar).....	2020
<i>Pradipkumar Leuaa, Christodoulos Chatzichristodoulou</i>	
Understanding the Role of Underlying Substrates on Hydrogen Evolution Reaction (HER) Catalytic Activity of Atomically Dispersed Pt Atoms	2022
<i>Bijandra Kumar, Baleeswaraiiah Muchharla, Brianna Barbee, Marlon Darby, Kishor Kumar Sadasivuni, Adetayo Adedeji, Abdennaceur Karoui, Mehran Elahi</i>	

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Influence of the Ionomer Content in Low-Loaded Anode Electrodes on Interfacial Resistances in Proton Exchange Membrane Water Electrolyzers	2023
<i>Matthias Kornherr, Carina Schramm, Matthias Felix Ernst, Hubert A. Gasteiger</i>	
Layered Coaxial Nanowires Electrode (LCANE) for High Performance with Low Loading in Polymer Electrolyte Membrane Water Electrolyzer (PEMWE)	2026
<i>Tanvir Alam Arman, Abdurrahman Yilmaz, Andres O. Godoy, Wipula Priya Rasika Liyanage, Dmitri Routkevitch, Siddharth Komini Babu, Jasna Jankovic, Ugur Pasaogullari, Jacob S. Spendelow</i>	
Performance Losses and Recovery from Cation Contaminants in PEM Water Electrolysis	2027
<i>Elliot Padgett, Anthony Adesso, Jacob A Wrubel, Bryan S. Pivovar, Shaun M Alia</i>	
A Study on Effect of Ionomer Content on Catalyst Ink Property and PEM Water Electrolyzer Performance.....	2028
<i>Chaojie Song, Ken Tsay, Elizabeth Fisher, Nate Sheibley, Nima Shaigan, Ali Malek, Khalid Fatih</i>	
Titanium Nitride (TiN) Micro-Porous Layers for Unitized Reversible Fuel Cell and Water Electrolyzers.....	2031
<i>Abdurrahman Yilmaz, Siddharth Komini Babu, Ugur Pasaogullari, Jacob S. Spendelow</i>	
(Invited) Catalysts, Inks and Electrodes for PEM Water Electrolysis: Scalable Approach for Highly Performed Catalyst Layer Fabrication.....	2032
<i>Alexey Serov, Xiang Lyu, Erin Creel, Haoran Yu, David A. Cullen, Nancy N. Kariuki, Jaehyung Park, Deborah J. Myers, Robin Rice, Elliot Padgett, Scott A Mauger, Guido Bender, Jayson Foster, Svitlana Pylypenko</i>	

Core-Shell Structured Water Oxidation Anode for Minimum Platinum Group Metal Usage in Proton Exchange Membrane Water Electrolyzer.....	2033
<i>Hui-Yun Jeong, Jinho Oh, Gyu Seong Yi, Hyun S. Park</i>	
Effect of a PTL Coating and the Clamping Pressure on the Performance of a PEM Electrolyzer Cell.....	2034
<i>Toni Srouf, Gael Maranzana, Sophie Didierjean, Jérôme Dillet, Kavita Kumar, Frederic Maillard</i>	
Topologically Optimized Anode Catalyst Layers of Proton Exchange Membrane Water Electrolyzers.....	2036
<i>Patcharawat Charoen-Amornkitt, Mehrzad Alizadeh, Takahiro Suzuki, Shohji Tsushima</i>	
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<i>Masahiro Yasutake, Zhiyun Noda, Junko Matsuda, Stephen Matthew Lyth, Masamichi Nishihara, Kohei Ito, Akari Hayashi, Kazunari Sasaki</i>	
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<i>Jyoti Rohilla, Ting-Hsuan Lai, Chien-Yi Wang, Chun-Wen Tsao, Soniya Gahlawat, Pravin P Ingole, Yung-Jung Hsu</i>	
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<i>Michal Bajdich, Karun K. Rao, Lan Zhou, Junko Yano, John M. Gregoire</i>	
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<i>John Irvine, Hong Zhang</i>	
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<i>Keisuke Obata, Xinyi Zhang, Tabea Thiel, Michael Schwarze, Reinhard Schomäcker, Roel Van De Krol, Fatwa Firdaus Abdi</i>	
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<i>Erin Service, Thomas Moehl, Pardis Adams, S. David Tilley</i>	
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*Seunghwan Jo, Woon Bae Park, Docheon Ahn, Kee-Sun Sohn, Ki Hoon Shin, John Hong,
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Allen J. Bard Award Address

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Z01 - General Student Poster Session

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