PLENARY SPEAKERS

(1) Olga Marina – PNNL

Chief Scientist, Energy Processes & Materials Division, Pacific Northwest National Laboratory. Dr. Marina is a leader in the advancement of high temperature steam electrolysis for hydrogen generation and electrochemical upgrading of CO_2 to high value fuels, both of which are efficient technologies for storing electricity through electrochemical conversion. She currently leads PNNL's research in these areas, including solid oxide stack manufacturing and testing, co-electrolyzer development, and multiple cell testing and post-test characterization. Dr. Marina received her Ph.D. in Chemistry from the Boreskov Institute of Catalysis and has been at PNNL since 1999. She holds 7 patents and co-authored over 80 research and technical publications. From 2003, she serves as an adjunct faculty at Washington State University. She also serves as an Associate Editor of the Journal of the Electrochemical Society

(2) Brian James – Strategic Analysis

Brian James leads the Energy Analysis Division of Strategic Analysis Inc. which specializes in the technoeconomic analysis of emerging energy systems. Brian has led Design for Manufacturing and Assembly (DFMA) costing efforts, TEA, and LCA efforts in a variety of fuel cell, electrolysis, and H2 storage systems for the DOE. Additionally, he and the SA team conduct technical due diligence, cost studies, and market landscape assessments for private industry. Brian has an MS in Aerospace Engineering, holds six US patents, and is a four-time DOE Hydrogen Program R&D awardee.

(3) Poul Georg Moses – Haldor Topsoe

Poul Georg Moses is head of SOEC technology development at Haldor Topsoe A/S. Poul Georg Moses holds a PhD from the Technical University of Denmark in applied applied physics. After post doctoral positions at UCSB materials department and Stanford chemical engineering he joined Haldor Topsoes R&D in 2011. Here he has held various R&D positions related to topsoe core business and more lately to Topsoe exploratory R&D. He has been responsible for SOEC development at Haldor Topsoe since 2017.

Panel 1

(1) Venkat Venkataraman – Bloom Energy

Venkat Venkataraman is the CTO and EVP of Engineering at Bloom Energy. He leads the development of clean, highly efficient and low cost Bloom Energy Servers to generate clean power onsite using natural gas, biogas and hydrogen as feedstock. During his 17 years tenure at Bloom, he led the company through many technological breakthroughs bringing Solid Oxide Fuel Cell (SOFC) technology from early stages of development to a matured state enabling deployment of highly efficient commercial systems deployed across the world reducing greenhouse gas emissions signficantly. Over the years, Venkat has assembled, led and mentored a very strong team of engineers and innovators around the world in the areas of fuel cell stack technology, system integration and power electronics, who have made tremendous strides in that time, solving the key technical challenges that had previously prevented the commercialization of SOFC technologies. Venkat's recent focus has been on the use of Solid Oxide Electrolyzer Cell (SOEC) technology for hydrogen production and use hydrogen SOFC for power generation, in an effort to accelerate hydrogen economy and decarbonization across the world.

Other work experiences:
Prior to joining Bloom Energy, Venkat was a Principal Technologist at Aspen Technology, Inc. where he led the commercial development of high end design, simulation and optimization software for the chemical and petrochemical industries.

Membership/Awards/Publications etc:
Venkat is a winner of AIChE award in the area of chemical process optimization.
He has authored/co-authored several patents in the areas of SOFC technology, fuel processing, heat integration and control systems.

Education Qualifications:
MS & PhD in Chemical Engineering – Clarkson University (1987)
BTech Chemical Engineering – National Institute of Technology, Trichy, India (1982)

(2) Tony Leo – Fuel Cell Energy

Anthony (Tony) Leo joined FuelCell Energy in 1978 and has held key leadership roles in research, development, and commercialization of electrochemical systems during his tenure. He is well known throughout the battery and fuel cell industry, and has authored numerous papers, contributed to technical books, holds several US Patents, and has served as Chairman of the American Society of Mechanical Engineers PTC-50 Fuel Cell Performance Test Code committee and as a member on the Department of Energy's (DOE) Hydrogen and Fuel Cell Technical Advisory Committee (HTAC). Mr. Leo holds a Bachelor of Science degree in Chemical Engineering from Rensselaer Polytechnic Institute.

(3) Scott Swartz - Nexceris

Dr. Scott L. Swartz is the Chief Technical Officer and a co-founder of Nexceris, in Lewis Center, Ohio. Dr. Swartz holds a B.S. in Ceramic Engineering from Alfred University, and a Ph.D. in Solid State Science from The Pennsylvania State University. Since 1994, Dr. Swartz has led Nexceris' technology development activities, resulting in the company's emergence as one of the preeminent product and technology providers in the areas of solid oxide fuel cell, electrolysis, and related electrochemical ceramic technologies.

(4) Joe Hartvigsen - OxEon

Joseph Hartvigsen is a co-founder and V.P. of Engineering at OxEon Energy, LLC. He leads the systems engineering work on solid oxide fuel cell, solid oxide electrolysis, plasma reforming, and synthetic fuels development projects at OxEon. He holds an M.S. degree in Chemical Engineering from Iowa State University. Over the past 30 years Mr. Hartvigsen has served as PI on numerous R&D programs for fuel cell, electrolysis and synfuels topics. In 2003 he co-authored the first high temperature electrolysis proposal awarded by the DOE to the Idaho National Laboratory, is a joint inventor with INL researchers on a CO_2-steam co-electrolysis patent and has been active in solid oxide electrolysis systems development ever since. He is co-investigator on NASA's Mars2020 mission MOXIE (Mars Oxygen ISRU Experiment) project and was responsible for development and flight qualification of the MOXIE Solid OXide Electrolysis stack (SOXE in NASA circles) currently operating on Mars aboard the Perseverance Rover. At OxEon he continues to lead this work having developed SOXE for the human exploration scale ISRU in NASA's planned Mars and lunar propellant production plants.

Joe maintains antique Caterpillar tractors, which he uses to raise wheat on his great-grandparents homestead in Marsh Valley, Idaho. From his home-based business, he has produced hundreds of micro-hydro and small-hydroelectric turbines that are generating megawatts of clean renewable power around the world.

Panel 2

(1) John Pietras – Saint Gobain

John leads the Ceramic Materials and Processing group at Saint-Gobain Research North America. Prior to that, he led the Solid Oxide Fuel Cell program at Saint-Gobain and has over 20 years of experience in the field of high temperature fuel cells and electrolysis. His degrees are in ceramic engineering and science and has been the principal investigator on several DOE funded SOFC/SOEC projects.

(2) Jens Suffner – Schott

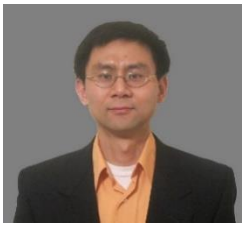
Since August 2014: Manager Sales for Glass Powder Applications and responsible for global Business Development activities for glass powders in the SOFC/SOEC field at SCHOTT AG, Business Unit Electronic Packaging, Landshut, Germany.

June 2010 – August 2014: R&D project manager for various glass powder applications at SCHOTT AG, Business Unit Electronic Packaging, Landshut, Germany. Responsible project manager for SOFC sealing glass applications.

PhD in Materials Sciences (Darmstadt University of Technology and Karlsruhe Institute of Technology, Germany) in the field of synthesis of ceramic nanoparticles, processing and characterization

Masters equivalent in Materials Sciences (Darmstadt University of Technology, Karlsruhe Institute of Technology, Germany; Purdue U., IN) with focus on ceramics, fuel cells and nanoparticles

(3) Greg Tao – Chemtronergy



PhD in Mechanical Engineering (University of Arizona). Greg Tao is the vice president and co-founder of Chemtronergy. He has > 20yrs' experience in the R&D of solid-oxide electrochemical technologies for fuel production and power generation applications, including SOFC/SOEC/Na-metal halide battery. He also has extensive knowledge in thermal science that he gained from his graduate school trainings from the University of Arizona, where he involved in the development of Oxygen Generator Subsystem using high temperature CO2 electrolysis for Mars application.

Presently, at Chemtronergy, Dr. Tao directs the company in developing a broad array of sustainable energy technologies. He is the PI on three on-going projects, including two projects sponsored by ARPA-E REFUEL Plus-up Program (Prime) and 2018 OPEN Program (Sub), and a NASA STTR Phase II project (Prime).

He previously worked for Materials & Systems Research Inc. (MSRI) as a Senior Research Scientist for over 14 years.

(4) Todd Striker – Cummins

Todd is the Manufacturing Leader for Solid Oxide Fuel Cells at Cummins Inc and has 20 years of experience in the field. He has a materials science and ceramics background and is the principal investigator for "Automation of Solid Oxide Electrolyzer Cell (SOEC) & Stack Assembly" supported by the Office of Energy Efficiency and Renewable Energy (EERE).