

Tony McDaniel

Dr. McDaniel is a Principal Member of the Technical Staff at Sandia National Laboratories and holds degrees in Chemical Engineering from the University of Colorado (Boulder, B.Sc.) and the University of California (Los Angeles, Ph.D.). His research experience spans a range of topical areas important to functional materials and their application to developing technologies for energy storage and conversion. These include complex oxides used in water and carbon dioxide gas splitting and high temperature electrochemical systems. Dr. McDaniel has over 75 peer reviewed publications and is the Solar Thermochemistry Technical Lead for the HydroGEN Advanced Water Splitting Materials Consortium, which is a US Department of Energy—Energy Materials Network dedicated to advancing the technology readiness level of renewable hydrogen production pathways. Relevant to today’s panel discussion, he leads a team comprised of five US Universities and the German Aerospace Center (DLR) to design and build a 5kWth-scaled demonstration of Sandia’s particle bed reactor technology.

Peter G. Loutzenhiser

Dr. Peter G. Loutzenhiser is an Associate Professor at the Georgia Institute of Technology in the Woodruff School of Mechanical Engineering and director of the Solar Fuels and Technology Laboratory. He is a co-author on 40 journal publications related to solar energy. He is actively engaged in research that is funded by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy through the Solar Energy Technologies Office with a focus on developing solar thermal and thermochemical technologies. He serves as Associate Editor for *Solar Energy* and *Materials*, and he was the 2018 recipient of the ASME Solar Energy Division’s Yellott award.

Jonathan Scheffe

Jonathan Scheffe is an Associate Professor in the Department of Mechanical and Aerospace Engineering at the University of Florida. Prof. Scheffe’s research is focused on the conversion and storage of solar energy in the form of renewable fuels/electricity through thermochemical routes. He is the former chair of the American Society of Mechanical Engineers (ASME) Solar Energy Division and has co-authored more than 35 peer reviewed publications in the field of solar thermal energy conversion. Professor Scheffe receives research funding from the U.S. Department of Energy, Florida Department of Transportation, Qatar National Research Foundation and Industry.

Bob Wegeng

Bob Wegeng is the leader of a startup company – STARS Technology Corporation – in Richland, Washington. Until recently, he was a “Chief Engineer” at the Pacific Northwest National Laboratory and was one of the leaders at PNNL in the development of microchannel process technology. Bob’s work has included the integration of microchannel reactors and heat exchangers with solar concentrators for the purpose of hydrogen production. This included on-

sun demonstrations of systems that achieved world record 70% solar-to-chemical energy conversion efficiency. Bob's startup is currently working with Southern California Gas Company to accomplish a series of hydrogen generator demonstrations – based on solar and non-solar applications – with the initial demonstration to occur in the first half of 2021.

Ragaiy Zidan

Ragaiy obtained his Ph.D. in physics from Florida Tech. (FIT) and has been working in the area of hydrogen technology and thermodynamics of energy systems and nanotechnology for more than 25 years. He currently holds an Advisory Scientist position at Savannah River National Laboratory. He has numerous publications in the area of hydrogen technology, energy storage and nanotechnology working with DOE- BES and EERE offices. He has more than 20 patents including a recent granted patent on novel metal hydride materials for high temperature thermal energy storage applications (>650 C). Ragaiy's work focuses on understanding materials behavior, synthesis, characterization and performance.