2022 Global Syngas Technologies Conference

October 26-28, 2022 in Tucson, AZ



Marc Bacon President and COO,

Omni Conversion Technologies



Larry Bool III Corporate Fellow, Linde



Ken Chlapik

Global Market Manager, Johnson Matthey



Zach El Zahab

Program Manager, **GTI Energy** President and COO of OMNI CT

40+ years of operations, engineering, and executive experience. Marc led the team that advanced OMNI's technology to commercial readiness and is now deploying it worldwide in a modular commercial design through a low-cost, high-quality international supply chain. Vice-Chair of Global Syngas Technology Council Executive Committee

Larry Bool is a Linde Corporate Fellow. In this role he is charged with leading the identification, development and commercialization of combustion and gasification technologies across a range of applications and markets, including glass, metals and energy. In his career progression to Corporate Fellow, Larry gained extensive experience in developing novel technologies. His experience ranges from performing detailed fundamental studies and detailed experimental work to working closely with Business and Marketing, including commercial installation and testing. He is a named inventor on over 25 patents and authored several publications and book chapters. Larry holds BS and PhD degrees in Chemical Engineering from the University of Arizona.

Ken Chlapik is the Global Market Manager for Johnson Matthey's Catalysts and Technologies - Low Carbon Solutions business. He is responsible for solution development utilizing JM's Low Carbon, CLEANPACETM and ADVANCED REFORMINGTM technologies. Most of Ken's career has been involved with the growth of steam methane reforming (SMR) hydrogen use for clean fuels in the oil refining industry. The capacity of SMR based hydrogen has tripled during his career with hydrogen production projected to be a magnitude larger in the next two decades through the energy transition. Ken is based in Oakbrook Terrace IL USA. He holds a B.Sc. degree (Chemical Engineering, 1981) from Northwestern University in Evanston IL. He represents JM with the Institute of Clean Air Companies – ICAC and the American Fuel and Petrochemical Manufacturers (AFPM) screening committee where he was recently recognized with the Peter G. Andrews Lifetime Service Award. Ken has published several articles with recent topics addressing acceleration of decarbonization of existing refining and petrochemical facilities providing "A Running Start to Net Zero".

Dr El Zahab maintains a demonstrated program and project management experience in the energy industry. He currently leads the gasification and partial-oxidation R&D program at the GTI Energy. Prior to joining GTI Energy, Dr El Zahab held various functions over 14 years within Siemens Energy in project management, commissioning, and R&D. Dr El Zahab has earned his PhD degree (2008) and MS degree (2003) both in Mechanical Engineering from the University of Central Florida, USA and his BS degree (2001) in Mechanical Engineering from the University of Balamand, Lebanon.



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Lizzie German

Investment and Technology Manager, **Dimeta** Lizzie has a background in Chemistry and sustainable energy technologies and experience in renewable fuels policy; technical and economic assessment of emerging technologies; and sustainability assessment. Lizzie has an undergraduate and masters in Chemistry (1 st class) from the University of Oxford and a masters in Sustainable Energy from Imperial College, London. Lizzie currently works as Investment and Technology Manager at Dimeta, a JV between SHV Energy and UGI International, two of the biggest off-grid energy players in the world. She has previously worked as rDME Product Manager for SHV Energy, and as Senior Consultant for E4tech. She has specialized knowledge in renewable DME covering supply, safety, policy support and use and is passionate about supporting the transition to a low-carbon economy.

Mr. Grant Grothen is a Principal with Burns & McDonnell Engineering, a \$6.0

electric utility experience including nuclear, renewable, and fossil generation.

billion USD international engineering company. Grant has over 31 years of



Grant Grothen

Vice President, Burns & McDonnell International

John Hesemann

Principal Geological Engineer, Burns & McDonnell In his past 20 years with Burns & McDonnell, he managed business units that have completed over \$10 billion USD in projects with \$3.5 billion USD in projects executed by Burns & McDonnell as an EPC contractor. He is currently leading development teams for both hydrogen and carbon capture & utilization hub deployment. Grant holds a Bachelor of Science degree in Electrical Engineering from the University of Nebraska, a Masters of Business Administration from University of Missouri Kansas City and is a registered Professional Engineer.

John Hesemann is a principal geological engineer at Burns & McDonnell with over 23 years of experience in the environmental and geo-engineering fields. He manages and supports multidisciplinary projects and supports nationwide strategy development, technical execution, and thought leadership. His recent experience includes the evaluation and development of projects related to the capture, injection, and geologic sequestration of carbon dioxide waste streams.



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Stefan Kaufmann

Former Innovation Commissioner for Green Hydrogen of Germany, Hydrogen Executive Advisor, **Thyssenkrupp Board** Dr. Stefan Kaufmann, who was born in 1969, served as Innovation Commissioner for Green Hydrogen at the German Ministry of Education and Research from June 2020 to July 2022. The position was created by the German Cabinet on June 10, 2020, as part of its national hydrogen strategy. In this position, he was a regular guest at the State Secretaries' Committee for Hydrogen of the Participating Ministries as well as the National Hydrogen Council.

Since August 2022 Dr Kaufmann is working as a Senior Adviser. In one of his main mandates he is adviser to the thyssenkrupp board regarding all cross-business hydrogen activities and projects and represent the company nationally and internationally in all matters related to hydrogen.

Prior to his appointment as Innovation Commissioner for Green Hydrogen, the fully qualified lawyer served as chair of the Study Commission "Vocational Training in the Digital Work Environment" and CDU/CSU spokesperson on the Committee on Education, Research and Technology Assessment of the German Bundestag. Dr Kaufmann served as directly elected Member of the Bundestag for his Stuttgart constituency from 2009 to 2021.

Mr. Keeler brings a wide range of leadership, technology, and operations experience in the gasification industry to SunGas. Before his role at SunGas Renewables, Mr. Keeler was a Sr. Gasification Advisor to Reliance Industries during engineering, construction, start-up and operation of the world's largest gasification facility in India.

Prior to Reliance, Mr. Keeler held senior positions at CB&I, Phillips 66 and ConocoPhillips for commercialization, technology development, and licensing of the EGas Gasification Technology. He was operations manager at the Wabash Gasification facility and worked in Dow Chemical's Energy Research group where he was instrumental in the development of Dow's Gasification technology. He holds a bachelor's degree in Chemical Engineering from the University of Utah.



David LaMont Senior Vice President, SunGas Renewables

Clifton G. Keeler

Business Development,

SunGas Renewables

VP Product Line

Management and

Dr. LaMont is a recognized expert in thermal conversion energy technologies and has nearly two decades of experience in technology assessment, deployment and financing. Most recently, he led the technology commercialization group at GTI that created and spun out SunGas. Previously, he worked for 10 years in the global energy business for ConocoPhillips, leading efforts in business and technology analysis, large scale technology deployment and strategy and planning. He has also held roles in two hydrogen and fuel cell technology startup companies. Dr. LaMont has a Ph.D. in chemical engineering from Washington State University and an MBA from the Kellogg School of Management at Northwestern University.



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Steve Lancaster

Chief Engineer, BD Energy Systems



Ian MacGregor Executive Chairman, H2 Naturally

Steve Lancaster is the Chief Engineer at BD Energy Systems, responsible for steam methane furnace technology, in particular the thermal and process design. He has worked with fired heaters in general, and steam methane reformers in particular, for 37 years, including at Kellogg/ KBR for over thirty years, and IHI E&C (former Davy/Kvaerner). BD Energy Systems, located in Houston, Texas, USA is a world leader in plant revamps and modernizations, specialized in executing turnkey projects, revamps, modernizations, and supply of engineered process equipment, including furnaces for ammonia, methanol, hydrogen, and gas-to-liquids (GTL).

Ian MacGregor likes to build stuff. He's an entrepreneur who likes to start from scratch, "start with an idea and see it run".

He embraces technical complexity, demonstrated in the \$10 billion Sturgeon Refinery project that began on a flowsheet he drew on a napkin. He also conceived and saw built the Alberta Carbon Trunk Line, the world's largest operational system for the capture and storage of manmade CO 2. So far about 3 million tons of CO 2 have been stored.

Ian is working on a new project – building a world scale Carbon Removal and Green Hydrogen hub to be located in Alberta's Industrial Heartland near Edmonton.

The goal is to sequester 1 GT of CO 2 that has been removed from the atmosphere and is trapped in wood waste while making large quantities of clean hydrogen for industrial and fuel uses.

Kerry is the Global Director, Downstream and XTL in Hatch's Oil and Gas Business Unit with over 20 years of engineering experience, principally in the design and implementation of high temperature industrial technologies. Gasification has been a focus over the last 12 years leading teams in the assessment, development and implementation of gasification, waste to energy, unconventional oil. Kerry's experience spans detailed design, fabrication and commissioning support for licensors, managing flowsheet integration for developers, and financial due diligence. Kerry is looking forward to continuing to help realize challenging projects that navigate the sustainable energy transition.

Hassan Modarresi

Kerry McKenna

Global Director.

Hatch

Senior Technology Licensing Manager, **Topsoe** Hassan Modarresi, with PhD in chemical engineering, has spent over 15 years in technology and catalyst development relevant to synthesis gas production and conversion. Hassan has been in various engineering and business development as well as commercial sales roles in Denmark and the Middle East. He also has experience in power to X and energy island project developments in Europe and East Asia. Currently, located in Houston, TX, he is responsible for TOPSOE's blue and green methanol, ammonia and hydrogen technology licensing in North America.



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Franz Petzold

Sales Lead Syngas – Hydrogen, **Clariant**



Karsten Radtke

Global Head of Business Development, **thyssenkrupp Uhde** Franz Petzold is Clariant's sales team lead for syngas/hydrogen North America, BU Catalysts. He received a Master of Engineering in Chemical Engineering from the University of Louisville in 2011 and joined Clariant as a research chemist at its Louisville R&D center. Before joining Clariant's syngas group in Houston, TX in 2019 he was a sales account manager for custom catalysts and technology scout in business development. In his current role Franz intends to further Clariant's engagement with current and future partners to deliver world class syngas solutions.

Karsten Radtke has a Master's Degree ("Dipl.-Ing.") in mechanical engineering and energy and environmental technologies from the Ruhr University in Bochum/Germany and started with the engineering and technology company Uhde over 28 years ago, today part of the thyssenkrupp group.

He began his career in process engineering in the field of oil and coal gasification, worked as an operating engineer in a syngas generation plant for oxo chemicals at Hoechst AG, before he was assigned to work in the U.S. from 1996-97 for Molten Metal Technology in Waltham near Boston, where he acted as Uhde's Resident Engineer.

From 2005 to 2013, Karsten headed the Gas Technologies Division within Uhde with a global business responsibility for gasification technologies and the related syngas applications including Methanol-to-Gasoline (MTG), Fischer-Tropsch synthesis. During his time, Karsten initiated international alliances, such as the foundation of a gasification JV in Korea, KEPCO-Uhde Inc. and the realization of the BioTfueL consortium in France for the production of Sustainable Aviation Fuels (SAF) based on biomass.

From 2013-2018, Karsten was expatriated to Denver, where he worked for 5 years as President and Officer of Uhde Corporation of America, which then became thyssenkrupp Industrial Solutions (USA), Inc. Karsten returned back to Germany, and is now heading the global business development, sales and strategy for the Business Unit Uhde at thyssenkrupp Industrial Solutions. Karsten represents the entire process portfolio of Uhde on a global basis, including the fast growing green chemicals technologies market, such as green ammonia, green methanol, e-fuels, biomass gasification, and more.



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Alexander Rösch

Director, Syngas & Methanol Product Line, Air Liquide Engineering & Construction Alexander Rösch is the Director for the Syngas & Methanol Product Line at Air Liquide Engineering & Construction. Alexander has graduated from TU Bergakademie Freiberg and holds a German Diploma for Chemical Engineering. He started his career as a Process Engineer with the Lurgi GmbH in 2006. After various assignments as Process and Commissioning Manager, Alexander was leading for several years the Technology Department at the Air Liquide Center in Houston. Currently he is located in Frankfurt, German and manages the Product Line for Oxygen based Syngas Technologies, Gas Cleaning Technologies and Methanol Synthesis.



Blake Ross

Senior Process Engineer, **KP Engineering (KPE)** Blake Ross is a Senior Process Engineer at KP Engineering (KPE) and serves as a subject matter expert (SME) for both syngas and hydrogen production technologies. His expertise has been applied within the hydrogen, chemicals, and refining industries – across projects ranging from process studies that determine project feasibility to engineering, procurement, and construction services for industrial plants. Mr. Ross' technical experience encompasses the development of detailed process designs, assistance with plant startups for new process units, and plant equipment safety inspections to ensure operational success. He earned a B.S. in Chemical Engineering at the University of Arkansas and is a member of the American Institute of Chemical Engineers (AIChE).



Joshuah Stolaroff Chief Technology Officer,

Mote

Dr. Joshuah Stolaroff is the Chief Technology Officer and co-founder of Mote, Inc. He previously spent over a decade at Lawrence Livermore National Laboratory, as a staff scientist and Carbon Capture Technology Manager, leading projects in carbon capture, advanced manufacturing, and clean energy. Prior to joining LLNL, Josh held a AAAS Science and Technology Fellowship at the U.S. EPA researching climate and a post-doctoral fellowship at Carnegie Mellon's Climate Decision Making Center. Josh has a PhD in Engineering & Public Policy and Civil & Environmental Engineering from Carnegie Mellon University and a B.S. in Environmental Engineering Science from the University of California, Berkeley. His thesis on the feasibility of direct air capture, under Greg Lowry and David Keith, formed the groundwork for the company Carbon Engineering.



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Mike Swanson

Principal Engineer, University of North Dakota Energy & Environmental Research Dr. Michael L. Swanson, Principal Engineer, Fuels Conversion, is currently involved with the demonstration of advanced power systems such as pressurized fluidizedbed combustors and integrated gasification combined cycle, with an emphasis on hot-gas cleanup issues. Dr. Swanson received a Ph.D. in Energy Engineering, a M.B.A., and M.S. and B.S. degrees in Chemical Engineering, all from UND.

Dr. Swanson's principal areas of interest and expertise include pressurized fluidized-bed combustion, integrated gasification combined cycle, hot-gas cleanup, coal reactivity in low-rank coal combustion, supercritical solvent extraction, and liquefaction of low-rank coals. Dr. Swanson is a member of the American Institute of Chemical Engineers and the American Chemical Society. In addition, he has authored or coauthored over 80 publications.

Thilo von Trotha

Business Development Director Large Projects Development, Linde Thilo works as Business Development Director at Linde in the 'US Large Project Development Group'. One of his main tasks is to develop the best suitable technical concept and scope for a business approach and prepares an economic evaluation for that concept. His senior expertise is world-wide used in Linde's projects.

In about 30 years, Thilo was involved in process synthesis, process engineering, and technology development. One of his topics is the production of hydrogen, methanol, ammonia, renewable diesel /sustainable aviation fuels and chemicals. He made the conceptual design for SMRs totaling a production of more than 600 MMSCFD hydrogen.

Thilo earned his chemical engineering diploma and PhD at the University of Dortmund, Germany.







Kent Warren

Postdoctoral Research Associate, University of Colorado Boulder

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John Winter

Product and Sales Manager, Schmidtsche Schack ARVOS Dr. Winter started in the industry as an operations engineer in a gasification facility at Dow Chemical. He later joined Texaco and spent several years in Texaco's gasification research unit at Montebello, California developing waste gasification technologies.

After becoming the General Manager for the operation and maintenance of a pet coke gasification facility run under contract for the project owner, he came into Texaco's corporate level engineering team, where he led the design and manufacturing of the proprietary components in the Texaco/GE gasifiers. When GE bought the Texaco technology, he was announced Chief Engineer by GE.

After leaving GE, Dr. Winter served as Vice President of Engineering at Evergreen Energy, Inc. and Senior Vice President of Technology at Range Fuels, Inc., a biofuels company. In 2009 he spent 9 years with Synthesis Energy Systems, a fluid bed gasification technology company.

Since 2018, he has been Director of Gasification in North America at ARVOS SCHMIDTSCHE SCHACK LLC.

Sean Yan is the Blue Hydrogen Product Manager in Air Products' Process Gases Business. Sean is mainly covering development of Blue H2 Plant Product based on AP's technology portfolio including POx and others. Sean has over 15 years direct experience in Hydrogen purification, gasification and related areas, including process design, commissioning & startup support, revamping, technology licensing, packaged equipment sales and Product Development lately.

Prior to his current role, Sean was the Technical Sales Manager with UOP in its global Hydrogen Business over six years. Sean also holds Technology Manager in KBR's coal gasification business and senior technical staff role in GE Energy's Gasification & IGCC Technology.

Sean holds a Ph. D in chemical engineering from University of Utah.



Sean Yan

Product Manager, Process Gases Product Line **Air Products & Chemicals**

