ASME OPTC 2022

Onshore Petroleum Technology Conference

Program

CONFERENCE
September 20 – 21, 2022
Norris Conference Centers
Houston CityCentre, Houston, TX

https://event.asme.org/OPTC

The American Society of Mechanical Engineers®
ASME®

ASME
SETTING THE STANDARD

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Welcome from the Conference Chair

On behalf of the technical committee, I am excited to welcome you to the first in-person Onshore Petroleum Technology Conference by ASME to be hosted from Sept 19-21, 2022, in Houston, Texas. ASME is the center of intersection for the Industry and Academic world, and this conference recognizes and fulfills the necessity for a forum dedicated to the Onshore Energy Industry.

This is our second year, following up on the inaugural conference in 2021, which was held virtually due to the pandemic. Our goal for this conference is the same as before — be the first place in the industry for academics and professionals to come together and talk about hot topics in all segments of the Onshore Energy Industry, including Conventional and Alternative energy industry spanning across Upstream, Midstream, and Downstream.

Our 2021 virtual conference drew an impressive line of speakers from the USA and beyond, ranging on topics relevant to Service Companies, Operators, Academia, and Government. For 2022, we have expanded the scope to include 2 of the essential topics in our industry-ESG and Alternative Energy, Carbon Technologies. These are the most influential topics driving decisions and impacting the way energy companies continue to make a positive impact on our community.

The energy industry is experiencing a boom driven by a post COVID demand resurgence. However, the industry continues to be challenged to innovate and lead the Energy Transition. Every speaker and participant in this conference is lending their voice to how the Energy Industry is leading the charge to develop innovative solutions to the dynamic and unprecedented challenges we face today.

I am inviting representatives from all formats of Academia, Energy Companies, Service Companies, and Government to contribute to the conference. Together, we can create a significant impact by networking and collaborating.

This in-person conference will further solidify ASME and OPTC's commitment to provide a dedicated forum for Onshore Energy Industry. A big thank you to all the volunteers and participants for working towards making 2022 OPTC successful.

SAURABH KAJARIA, MS, MBA
2022 ASME OPTC Conference Chair
Completions SME, Vault Pressure Control

OPTC 2022 Organizing Committee

OPTC 2022 Conference Chair
SAURABH KAJARIA, MS, MBA
Completions SME, Vault Pressure Control

OPTC 2022 Past Conference Chair
KYLE RICHTER
Reservoir Engineer, Occidental Petroleum Corporation

OPTC 2022 Incoming Conference Chair
KALI WEST
Project Engineer, Shell USA

OPTC 2022 Technical Program Chair
PHANEENDRA "PHANI" KONDAPI
Affiliate Faculty, Colorado School of Mines
Founder & CEO, DigiTide.ai

OPTC 2022 Technical Program Co-Chair
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China University of Petroleum-Beijing

OPTC 2022 Organizing Committee Members

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Samuel Fagbemi	University of Wyoming
Mohammed Al Dushaishi	Oklahoma State University
Pedram Fanailoo	DNV GL
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Austin Wessel	Southern LNG Company, LLC
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Coordinator, Conference Web-Tool

Schedule-at-a-Glance

	Central Time	Tuesday, September 20, 2022
Tuesday, September 20, 2022	8:00 AM to 8:30 AM	Breakfast
	8:30 AM to 8:45 AM	Conference Opening & Welcome
	8:45 AM to 9:30 AM	Plenary: The Oil Industry: 25 More Years of Growth and How We'll Do It
	9:30 AM to 10:15 AM	Refracs: the time is now
	10:15 AM to 10:45 AM	Networking Refreshment Break
	10:45 AM to 11:30 AM	Digitalization Panel Session
	11:30 AM to 12:30 PM	Lunch
	12:30 PM to 1:00 PM	TechnipFMC Cyber-Frac Technologies
	1:00 PM to 1:30 PM	Drilling for Geothermal; Opportunities for Technology Cross Pollination
	1:30 PM to 2:00 PM	Energy Legislative Update
	2:00 PM to 2:30 PM	Where is the Hydrogen Economy Now?
	2:30 PM to 3:00 PM	TechnipFMC E-Mission Technologies
	3:00PM to 3:30PM	Networking Refreshment Break
	3:30 PM to 4:00 PM	Digital Field Ticketing in the Industry
	4:00 PM to 5:00 PM	The Future of Oil and Gas. Don't worry, it's Awesome!
	5:00 PM to 5:30 PM	Opening Reception *Sponsored by the Petroleum Division*
Wednesday, September 21, 2022	Central Time	Wednesday, September 21, 2022
	8:00 AM to 8:30 AM	Breakfast Keynote: Digital Impact on Cleaner Oil and Gas Fields
	8:30AM to 10:00AM	Innovations in Safety Data Management
	10:00 AM to 10:30 AM	Networking Refreshment Break
	10:30 AM to 12:00 PM	Technical Session
	10:30 AM to 12:00 PM	OPTC New Technology Pitch Session
	12:15 PM to 1:00 PM	OPTC Awards Luncheon
	1:00 PM to 3:00PM	Carbon Capture, Utilization and Storage Panel Session
	3:00 PM to 3:30 PM	Networking Refreshment Break
	3:30 PM to 5:00 PM	Education Panel

Welcome Remarks

TUESDAY, SEPTEMBER 20, 2022 **8:30AM – 8:45AM CDT**

KYLE RICHTER
OPTC 2022 Past Conference Chair

SAURABH KAJARIA
OPTC 2022 Conference Chair

Opening Plenary Session

TUESDAY, SEPTEMBER 20, 2022 **8:45AM – 9:30AM CDT**

Title: The Oil Industry: 25 More Years of Growth and How We'll Do It

After a full generation of rapid production growth fueled by investors who desired more and more at – quite literally – any cost, today's newly disciplined oil and gas industry, along with its side kick, the oilfield service and equipment sector, is minting record profits at a pace already sustained for longer than ever thought imaginable. The question is, how long will the world want more oil and gas each year and, in a world where investors and lenders alike still shun the sector, how will that growth be delivered? Richard Spears, managing partner of oilfield market research firm Spears & Associates, will use examples from the company's unique research to forecast the course being set in the upstream oil and gas industry for the next quarter century.

OPTC 2022 Technical Program Co-Chair
RICHARD SPEARS
Vice President
Spears & Associates

Spears & Associates has 250 corporate clients around the globe – Schlumberger, Saudi Aramco, Halliburton, ConocoPhillips, Fidelity Investments… The firm's unique oilfield market analysis is used by clients to better deploy capital in companies, product lines, and regions. Richard also sits on the boards of several oilfield service companies, ranging from drilling to completion to production. As a result, and unlike most consultants in the oil industry, Richard is a consumer of his own firm's research.

Special Session

TUESDAY, SEPTEMBER 20, 2022 **9:30AM–10:15AM CDT**

Title: Refracs: The Time Is Now

Primary Vision Network and Integrated Energy Services have teamed up to share the bright future of the refrac market, an integral part of a completion program. Matt Johnson will talk about the current state of U.S. fracturing and provide some commercial data on the refrac space. Bob Barba will wrap up the chat with a more technical background on refracs and why they work. They'll field Q&A to wrap up the session.

MATT JOHNSON
President/CEO
Primary Vision Inc.

Matt Johnson's diverse background allows him to see challenges from a variety of perspectives, thus finding optimal, innovative, and creative solutions. Before entering into the oil and gas industry in 2011, Matt was a successful entrepreneur and consultant to multiple Fortune 500 companies in the automotive, entertainment, gaming and real estate spaces. Matt has helped design and launch unique data, insights and video commentary for the oil and gas industry that serves upstream and midstream participants, financial institutions and news organizations globally through the company he heads, Primary Vision Network.

- Co-Creator of the Frac Spread Count, a tool designed to track and accurately forecast active pressure pumpers across the United States
- Frequent contributor to the Wall Street Journal, Bloomberg, Reuters, Forbes, OilPrice.com, American Oil and Gas Reporter and more
- Represented Primary Vision Network in several keynotes at major events hosted by the Society of Petroleum Engineers (SPE) HFTC, OTC and IQHUB from 2014 to current.

Special Session

TUESDAY, SEPTEMBER 20, 2022 **9:30AM–10:15AM CDT**

Title: Refracs: The Time Is Now (Cont.)

BOB BARBA
Owner and CEO
Integrated Energy Services

Bob Barba is a pioneer in the integration of petrophysics with reservoir and completion engineering to maximize production from oil and gas reservoirs. Instrumental in the development of the FracHite product while at Schlumberger bringing the product from the concept phase to implementation as a highly successful commercial product. Recognized by the International Society of Petroleum Engineers Distinguished Lecturer program 1995-95 for this work and for subsequent work as a consultant implementing the concepts. Served as an expert witness for BP on log based rock mechanics for the Macondo trial 2013. Delivered the keynote address at a major refracturing conference for the SPE in Calgary January 2016. Received the Regional Formation Evaluation Award for the Society of Petroleum Engineers Southwest North America region (Permian Basin) in May of 2018. Currently teaches the refrac optimization, organic shale petrophysical analysis, and openhole log analysis courses for Subsurface Consultants and Associates worldwide.

Digitization Panel Session

TUESDAY SEPTEMBER 20, 2022 **10:45AM – 11:30AM CDT**

Digitalization is proving to be beneficial for all industries. With regards to onshore technology and in light of the global pandemic, digitalization technologies are proving imperative to continue production. This session will discuss the technologies that are being used and the return on investment.

Moderator:

PHANEENDRA "PHANI" KONDAPI
Affiliate Faculty, Colorado School of Mines
Founder & CEO, DigiTide.ai

Panelists:

JAVIER CENTENO
Vice President - Digital Strategy and Business Innovation
Oxy

RAMESH PRABHALA
Founder & CEO
IntelliTide

HANI ELSHAWAVI
Managing Director
NoviDigiTech

EGIDIO (ED) MAROTTA
Director – Data Science
Champion X

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **12:30PM – 1:00PM CDT**

TechnipFMC's CyberFrac™

TechnipFMC's iComplete™ CyberFrac™ system is a fully digital and automated platform for controlling equipment operations during hydraulic fracturing through app-based configurability. In this talk, John Eden will explain how this system enables well site managers and their teams to follow approved procedures and establish sitewide operational awareness through the Digital Handshake while reducing manual errors.

JOHN EDEN
Vice President, Sales
Surface West

John Eden is Vice President of Sales for Surface West focused on drilling and completions for the North American Shale market. Prior to his current role, he was Vice President of Integrated Upstream Unconventional. John joined FMC Technologies in 2011 and held several positions in Service and Operations. John served in the US Army.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **1:00PM – 1:30 PM CDT**

Drilling for Geothermal; Opportunities for Technology Cross Pollination

An opportunity exists to apply best practices from oil and gas exploration and development to the search for geothermal resource. Tools and technology from advanced drill bits to the latest application in 3D seismic inversions are critical to unlocking potential in the geothermal industry. Oil and gas professionals are well positioned to leverage their talents to contribute to industry. This talk will explore opportunities for technology cross pollination with a focus on exploration and development drilling.

DANNY REHG
Co-Founder and CEO
Criterion Energy Partners, Inc.

Danny is a business leader, innovator, and entrepreneur focused on building companies and leading change efforts. He has diverse experience in engineering and management in geothermal energy, oil & gas, operations, well construction, subsurface engineering, capital planning, and optimization. He is the Co-Founder and Managing Partner of Criterion Energy Partners (CEP) an independent exploration and production company focused on developing decentralized direct geothermal energy projects to help commercial and industrial consumers reduce their emissions and improve their operating efficiency by providing clean, reliable, baseload energy using heat from the Earth. Danny held positions of increasing responsibility in engineering and management at a Fortune 500 company, Anadarko Petroleum, and a private O&G company, Endeavor Energy Resources. He has lead energy exploration and development projects in the United States and Africa and holds an MBA from Rice University and a Bachelor of Science in Petroleum Engineering from The University of Oklahoma.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **1:30PM – 2:00PM CDT**

Energy Legislative Update

JON ROSENTHAL
Texas House of Representatives

Representative Jon Rosenthal has been in Texas since 1979 after being born in the prestigious Stanford University Hospital in 1963. His father Haskell was the John T. Stuart III Centennial Professor of Mathematics at the University of Texas at Austin for over 25 years and his mother Maryon is a retired Cosmetics Sales Director.

A graduate of The University of Texas at Austin in 1991, Jon earned his Bachelor of Science in Mechanical Engineering. He has since worked for over 25 years as a Project Manager, Engineering Manager, and Subsea Systems Engineer in and around the oil & gas industry. In 2016, Jon earned a Graduate Certificate in Subsea Engineering from the University of Houston.

Representative Rosenthal has been a strong fighter, advocate and champion for better public schools, healthcare and ensuring we have comprehensive criminal justice reform across the State of Texas. Grateful and fortunate enough to be elected by the great constituents of House District 135 (Northwest Houston - Cypress and Jersey Village), Jon continues his fight in the state legislature to advocate for these issues amongst other needs. He will bring a unique background to the chamber as being only one of two practicing engineers in the Texas State House of Representatives and the only mechanical engineer serving in the body.

As a new member to the 86th Legislative session, Representative Rosenthal served on the County Affairs and Energy Resources Committees. He was honored to receive the Freshman of the Year award from the non-partisan Legislative Study Group, the second largest caucus in the Texas State House dedicated to developing mainstream solutions and advancing sound public policy benefitting all Texans.

Jon is happily married to his wife Aminta, and they share 2 adult children; Janet and Bryan. The Rosenthal family has lived in Northwest Houston since 2007.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **2:00PM – 2:30PM CDT**

Where is the Hydrogen Economy Now?

Jeremy Rifkin's book The Hydrogen Economy was published in 2002. In the book Rifkin, an economist and social theorist, envisaged a worldwide hydrogen energy web as an answer to peak oil and as a way to democratize global energy. In this presentation we'll examine the current uses of hydrogen, the current trends towards hydrogen hubs and decarbonization, and the likely future for the hydrogen economy. Spoiler Alert: It's a far cry from Rifkin's vision.

ALAN ROSSITER
Executive Director, External Relations/Educational Program Development
UH Energy, University of Houston

Alan Rossiter is UH Energy's Executive Director, External Relations & Educational Program Development, at the University of Houston.

Prior to joining UH Energy, Dr. Rossiter served in a variety of engineering and management positions with two major chemical companies, Imperial Chemical Industries (ICI) in England, and Saudi Basic Industries (SABIC) in Saudi Arabia. He also worked for the industrial energy efficiency and waste minimization consulting firm Linnhoff March in the US, as a senior consultant, operations manager, and interim president. Later he ran his own independent consulting firm.

Dr. Rossiter obtained his bachelor's, master's, and doctoral degrees in chemical engineering from the University of Cambridge. He is a licensed professional engineer (Texas), and a Fellow of the American Institute of Chemical Engineers.

He is also the lead author of Energy Management and Efficiency for the Process Industries (AIChE/ Wiley, 2015), and the contributing editor for Chemical Processing's award-winning monthly Energy Saver column.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **2:30PM – 3:00PM CDT**

TechnipFMC's E-Mission™

TechnipFMC's E-Mission™ is the next level of optimization for production facilities. This technology helps facilities to maximize value through a first-principles approach to calculate the Reid Vapor Pressure (RVP) values on location and significantly reduce greenhouse gas emissions. In this talk, Bill Melton will be detailing how E-Mission™ utilizes process automation, existing instrumentation and machine learning to monitor and control vapor pressure in real-time.

BILL MELTON
North America Sales Director
TechnipFMC

Bill Melton is the North America Sales Director focused on production and emission solutions. Bill collaborates with North America unconventional operators to address challenges of emissions reduction and improving cash flow. Prior to joining TechnipFMC, Bill spent 20 years at Halliburton in a number of roles focused on engineering, sales, and operations. Bill has an MBA from Rice University.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **3:30PM – 4:00PM CDT**

Digital Field Ticketing in the Industry

Digital field ticketing is becoming more and more prevalent in upstream E&P operations. Enverus has been involved in providing solutions to both oilfield service companies and operators since 2016. This talk will be focused on two things; (1) learnings from those experiences, why some implementations succeed and some fail. (2) The future of digital field ticketing, how evolving technology can drive real change in operations.

DAVE SAVELLE
General Manager
Field Ticket
Enverus

As General Manager, Field Ticket, **Dave Savelle** is responsible for all aspects of Enverus' OpenTicket digital field ticketing solution. Dave is a 33-year veteran of the oil and gas technology industry. He started as a wireline engineer for NL McCullough in Western Canada and then joined Munro Engineering in 1988, deploying drilling database management systems. Over the course of the next 30 years, he undertook a number of roles in technology development and operations, including support, sales management, marketing, and development for Munro Garett, which was acquired by Landmark, in turn acquired by Halliburton. In 2000, Dave left Halliburton and co-founded Digital Oilfield, running US operations from its inception and was on hand for the first deployments of OpenInvoice. In 2006, he returned to Halliburton in the role of Technical Business Line Director for Drilling. Dave is a member of the SPE and is a mechanical engineering graduate from the University of Western Ontario.

Special Sessions

TUESDAY, SEPTEMBER 20, 2022 **4:00PM – 5:00PM CDT**

The Future of Oil and Gas. Don’t Worry, it’s Awesome!

MARK LACOUR
Editor in Chief
Oil and Gas Global Network

Mark LaCour has lived and worked in the Oil and Gas industry for over 25 years. Later he started his own market research company and has a well-earned reputation as an industry "insider" and independent 3rd party researcher. This led to him becoming a part of the new media, where he runs the world's largest Oil and Gas podcast network, with over 2.6 million listeners from 198 different countries. He is a sought-after public speaker, author, sits on several oil & gas boards and has one of the top oil & gas presences on social media.

Keynote Session

WEDNESDAY, SEPTEMBER 21, 2022 **8:00AM – 8:30AM CDT**

Digital Impact on Cleaner Oil and Gas Fields

SYED "ALI" RAZA
Senior Vice President and Chief Digital Officer
CHAMPIONX

Ali Raza is senior vice president and Chief Digital Officer for ChampionX.

Ali was previously senior vice president and Chief Digital Officer for Apergy, which he joined in 2018 after serving as president of Dover Energy Automation, a division of Dover Energy. He has 27 years of experience in oil and gas automation and business process optimization software management.

Prior to joining Dover Energy, Ali served in a variety of senior leadership roles with Honeywell Process Solutions, including vice president and general manager-advanced solutions. He also worked for AspenTech in process and supply chain optimization. Ali began his career with Caltex, a joint venture of Chevron and Texaco in Pakistan.

He received a bachelor's degree in computer systems engineering from NED University of Engineering and Technology and a master's degree in computer engineering from Wayne State University. Ali serves as a member of the University of Houston Engineering College and University of Oklahoma School of Computer Science Advisory Board.

ChampionX is a global leader in providing chemistry programs and services, drilling technology, artificial lift solutions, and automation technologies for the upstream and midstream oil and gas industry. Our world-class safety culture fuels our purpose to improve lives through our commitment to deliver sustainable operations.

Panel Session

WEDNESDAY, SEPTEMBER 21, 2022 **8:30AM – 10:00AM CDT**

Innovations in Safety Data Management

Moderator:

ROLAND L. MOREAU
BTS Special Advisor

Roland Moreau retired from ExxonMobil in August 2014 with 34 years of service where he held the position of Safety, Security, Health and Environment (SSH&E) Manager for ExxonMobil's Upstream Research, Gas & Power Marketing, and Upstream Ventures business units. Prior to ExxonMobil, Roland also worked five years in the naval nuclear industry. He received his B.S. degree in Mechanical Engineering from Worcester Polytechnic Institute in 1975, followed by an MBA in Finance from Fairleigh Dickinson University in 1984.

Roland remains active with various industry organizations. He currently serves on the Board of Trustees for the United Engineering Foundation, as well as the National Academies' Gulf Research Program Gulf Offshore Energy Safety (GOES) Board. Prior to that, Roland was the 2018 President for the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), and served two terms on the Board of Directors for the Society of Petroleum Engineers International (SPE) – as Vice President of Finance from 2015-2018, and as Health, Safety, Security, Environment & Social Responsibility (HSSE-SR) Technical Director from 2011-2014. He is also the recipient of the 2022 OTC Heritage Award for his leadership in advocating for the gathering and analyzing of safety data and sharing learnings from operations in the Gulf of Mexico to improve industry safety.

Roland is also a Senior Advisor with the U.S. Bureau of Transportation Statistics (BTS) on development of the SafeOCS Industry Safety Data (ISD) industry-wide safety data management framework.

Panel Session

Innovations in Safety Data Management (Cont.)

Panelists:

ALLISON FISCHMAN
USDOT
Bureau of Transportation Statistics

Allison Fischman is a data analyst at USDOT, Bureau of Transportation Statistics, where she conducts statistical analyses to support the BTS SafeOCS program. Prior to USDOT, she worked for 7 years for the Department of the Interior's Bureau of Safety and Environmental Enforcement, where she was involved in a range of studies on the safety of offshore energy systems.

She is currently pursuing a master's degree in data science at Johns Hopkins University and holds an MA and JD from the University of Florida.

BRUCE HAMILTON
Argonne National Laboratory

Bruce Hamilton is Global Energy Solutions Program Lead at Argonne National Laboratory where he provides leadership for initiatives designed to deliver measurable benefits to countries, states, and communities in pursuit of sustainable energy and economic development. For the U.S. Department of Energy, Bureau of Safety and Environmental Enforcement, Bureau of Transportation Statistics, Asian Development Bank, International Atomic Energy Agency, World Bank, and numerous energy companies around the world, Bruce has applied his expertise in systems engineering to resolve priority issues affecting energy infrastructure development, evaluation of operational safety risks, environmental assessment, and creation of sustainable business models for innovative energy technology.

Panel Session

Innovations in Safety Data Management (Cont.)

BAHADIR INOZU
Sharp Focus Inc.

Bahadir "Baha" Inozu is the Co-Founder and CEO of Sharp Focus Inc. based in Los Angeles. He is an outcome-driven Senior Executive and Thought Leader with more than 28 years of experience. He worked with more than 40 client organizations to improve performance across a wide spectrum of industries including maritime, aviation, construction, manufacturing, healthcare, information technology and government. His areas of expertise include Near Miss Reporting & Analysis, High Reliability Organization, digital transformation, AI/NLP/ML, process improvement, dynamic risk management, project management, portfolio management, operational excellence, supply chain management, operations management, change management, and business strategy. He is also an Adjunct Professor at University of Southern California's Marshall School of Business and Bovard College, teaching Project Management and Professor Emeritus at University of New Orleans, where he served as the Chairman of the School of Naval Architecture and Marine Engineering. He is a co-author of "Performance Improvement for Healthcare" (2011) and "High Reliability for a Highly Unreliable World"(2018). He is a Lean Six Sigma Master Black Belt, a Theory of Constraints Jonah. He has PMP and PROSCI Change Practitioner certifications. He received his MS and Ph.D. degrees from the University of Michigan in Naval Architecture and Marine Engineering in 1986 and 1990 respectively.

Technical Sessions

WEDNESDAY, SEPTEMBER 21, 2022 10:30AM – 12:00PM CDT

OPTC2022-91574: ROP OPTIMIZATION OF LATERAL WELLS IN S.W. OKLAHOMA – ARTIFICIAL NEURAL NETWORK APPROACH
Haden P. Kolmer - Oklahoma State University
Clark M. Cunningham - Oklahoma State University
Mohammed F. Al Dushaishi - Oklahoma State University

OPTC2022-91574: TUBULAR LOCKUP PREDICTION IN DEVIATED WELLS USING MARKOV CHAINS
Oluwatosin Ogundare - Halliburton
Samuel Fagbemi - University of Wyoming

OPTC2022-96604: FIELD DEVELOPMENT OPTIMIZATION OF HAYNESVILLE SHALE WELLS
Samiha Morsy - ResFrac
Mark McClure - ResFrac
Garrett Fowler - ResFrac
Dave Ratcliff - ResFrac

OPTC2022-92029: EMERGENCY REPAIR OF A P-381 RIVER WATER SUPPLY LINE AT A REFINERY IN BELLE CHASSE, LA.
Mike Larsen - Structural Technologies
Murat Engindeniz - SIMPSON GUMPERTZ & HEGER

OPTC2022-93990: REDUCING CARBON INTENSITY OF PRODUCTION & IMPROVING UPTIME BY USE OF AN ELECTRIC ADAPTIVE GAS LIFT COMPRESSOR
Devvrat Rathore - Axip Energy Services
John Snow - Axip Energy Services
Paul Snow - Axip Energy Services

Technical Sessions

WEDNESDAY, SEPTEMBER 21, 2022 10:30AM – 12:00PM CDT

OPTC New Technology Pitch Session

Come hear the latest in cutting edge technology from OPTC's 2022 Best Technology Award winners!

2022 GOLD AWARD FOR BEST ONSHORE TECHNOLOGY
T-Pulse by Detect Technologies

2022 SILVER AWARD FOR BEST ONSHORE TECHNOLOGY
IsoBoost Turbocharger GPT-4800 by Energy Recovery Inc.

2022 BRONZE AWARD FOR BEST ONSHORE TECHNOLOGY
Quantitative diagnosis and adaptive protection technology of temporal and spatial evolution of oil and gas reservoir damage by China University of Petroleum (Beijing)

2022 PARTICIPATION AWARD FOR ONSHORE TECHNOLOGY
Flare Mitigation and Stranded Gas Monetization through Bitcoin Mining by Emry Energy LLC

Carbon Capture, Utilization and Storage Panel Session

WEDNESDAY, SEPTEMBER 21, 2022 **1:00PM – 3:00PM CDT**

Common Questions in CCUS

Carbon Capture, Utilization and Storage has been attracting attention from oil & gas operators, industrial facilities, startups, and policy advisors. As CCUS emerges as a major industry across the globe, oil & gas operators are well positioned to take on a significant role in this space. When learning to apply the traditional skillset of an operator to a CCUS project, some key questions get repeated. Lifecycle project cost, schedule, permitting, infrastructure planning, political and social setting, and risk management are at the forefront when developing new projects. This talk will address common planning and operational concerns in CCUS projects.

AMANDA RADDATZ BOPP
Principal Geoscientist
DNV

Amanda Raddatz Bopp joined DNV in 2022 as a Principal Consultant in the CCUS Venture, where she provides CO2 storage expertise to support the development of CCUS projects across the globe. This ranges from risk management, permitting assistance, recommended practices, and technical advisory. Amanda brings 15 years of industry experience as a Geologist, with the past 8 years focusing on Carbon Management. Her experience comes from Battelle, Oxy, and Shell, where she held various roles in exploration, production, EOR, CO2 sourcing, and project management. Amanda has a Master's degree in Geology from the University of Illinois, Urbana-Champaign.

PRESENTATION TITLE: FIRST COMMERCIAL CCUS PROJECTS IN NORTH DAKOTA

The first landmark permits coupled with the prudent regulatory environment and excellent geology and stacked storage potential of North Dakota have resulted in a broad range of commercial carbon capture, utilization, and storage (CCUS) projects being advanced in the region. The dozens of projects lining up include capture from coal-fired power generation;

Carbon Capture, Utilization and Storage Panel Session

ethanol production; industrial processes; and natural gas compression, processing, and generation. Each application is driven by project-specific business cases and varying combinations of incentive programs. Each of the commercial CCUS projects being advanced boosts investment in the region and provides a means of significantly reducing the carbon intensity of the energy or products produced.

In addition, the University of North Dakota Energy & Environmental Research Center (EERC) leads the Plains CO2 Reduction (PCOR) Partnership Initiative, with support from the University of Wyoming and the University of Alaska Fairbanks. This initiative, funded by the U.S. Department of Energy (DOE), the North Dakota Industrial Commission, and participating member organizations, is accelerating the deployment of CCUS within the PCOR Partnership Initiative region. CCUS is the key technology option to manage carbon emissions while allowing the full range of economic and societal benefits derived from fossil fuels.

KERRYANNE LEROUX
Principal Engineer, CCUS Systems Lead
Energy & Environmental Research Center

Ms. Kerryanne Leroux, Principal Engineer at the Energy & Environmental Research Center (EERC), holding a B.S. and an M.S. in Chemical Engineering. She currently leads teams of scientists and engineers who focus on integrating carbon capture and storage (CCS) systems with fossil energy, such as enhanced oil recovery (EOR) and coal-generated electricity, as well as renewable energy. She has direct experience with assessment of CO2 capture technologies and transportation; implementing and evaluating near-surface and downhole monitoring concepts for geologic CO2 storage; and techno-economic evaluation of CCS applicability for state and federal CO2 reduction incentive programs.

Carbon Capture, Utilization and Storage Panel Session

PRESENTATION TITLE: DIRECT AIR CAPTURE – COMMERCIAL DEPLOYMENT

Since 2009, Carbon Engineering (CE) has been developing an industrially scalable DAC technology, which can remove CO2 directly from the atmosphere at an affordable price point and at industrially relevant scales. The captured CO2 can be safely stored deep underground to deliver permanent carbon removal. CE, Oxy Low Carbon Ventures and 1PointFive are now focused on bringing this technology to commercial scale with multiple large-scale plants underway around the world. The first facility to use CE's technology is expected to be operational in late 2024 in Texas. The technology and development behind this process will be described.

JENNY MCCAHILL
Carbon Engineering
Oxy

Jenny McCahill joined CE in 2014 with more than 10 years' experience on the development of chemical processes for industrial applications. Jenny was a key contributor during the commissioning and early stage operations of the DAC and AIR TO FUELSTM pilot facilities, and led optimization work of current technology and investigations of next generation technologies for process integration. Jenny is now part of the Project Management Team for the development of CE's first industrial-scale plant.

PRESENTATION TITLE: DECISION SUPPORT FOR BALANCING CARBON MITIGATION AND ASSET OPTIMIZATION

Upstream companies are scrambling to improve their ability to measure, track and report on greenhouse gas emissions in oil and gas fields and processing facilities. The approach today is largely semi-manual, with spreadsheets that draw from a combination of data sources, indirect calculations, estimates and remote sensing. This approach is auditable by governments and investors, but only just. The biggest drawback to this approach, of course, is the time it takes to roll up the information across an enterprise, reducing its value in providing timely, actionable information to identify and solve "bad actors" that leave a company exposed from a carbon emissions viewpoint.

Carbon Capture, Utilization and Storage Panel Session

This presentation will discuss how a combination of modeling, analytics, and advanced visualization can provide a near real time picture of the performance of an upstream asset, can identify actions that can reduce energy and water use and reduce greenhouse gas (GHG) emissions and can ensure that consistent data is being used by different analysts and decisionmakers.

The presentation will show a technology pathway and an overview of the following technical elements:

- Hydrocarbon mass balance model to trace losses (fugitive emissions) in the asset
- Energy model to measure and optimize energy and water use in the upstream asset, benchmark among equipment across the asset and multiple assets, and identify bad actors
- Systemwide model to identify where capital and operating spending will have the biggest impact on carbon emissions and production
- Advanced process control (APC) for upstream, and its surprisingly large impact on energy use, yield and uptime in the asset
- Predictive analytics for uptime, which avoid unplanned releases of methane and emissions

RON BECK
Senior Director, Industry and Product Marketing
AspenTech

Ron Beck has 40 years experience in the oil and gas industry, and for the past 15 years has worked for AspenTech. His current role relates to applying digital technology to sustainability pathways for global oil and chemical enterprises.

His work has taken him to almost every major process manufacture and oil producer globally. His first experience in the sustainability area dates back to the 1970s when he was involved with processes for pyrolysis of waste materials and development of global energy models. He has a degree in geology and biology from Princeton University.

Education Panel Session

WEDNESDAY, SEPTEMBER 21, 2022 **3:30PM – 5:30PM CDT**

BIROL DINDORUK, Ph.D, NAE
Distinguished Professor
University of Houston

GANESH THAKUR, Ph.D, NAE, NAI
Distinguished Professor
University of Houston

ROBELLO SAMUEL, Ph.D
Technology Fellow-Halliburton
Adjunct Professor, University of Houston

AUTHOR INDEX

Last Name	First Name	Submission Code	Submission Name
Kolmer	Haden	91464	Rop Optimization of Lateral Wells in Sw Oklahoma – Artificial Neural Network Approach
Fagbemi	Samuel	91574	Tubular Lockup Prediction in Deviated Wells Using Markov Chains
Larsen	Mike	92029	Emergency Repair of a P-381 River Water Supply Line at a Refinery in Belle Chasse, La.
Rathore	Devvrat	93990	Reducing Carbon Intensity of Production & Improving Uptime by Use of an Electric Adaptive Gas Lift Compressor
Morsy	Samiha	96604	Field Development Optimization of Haynesville Shale Wells

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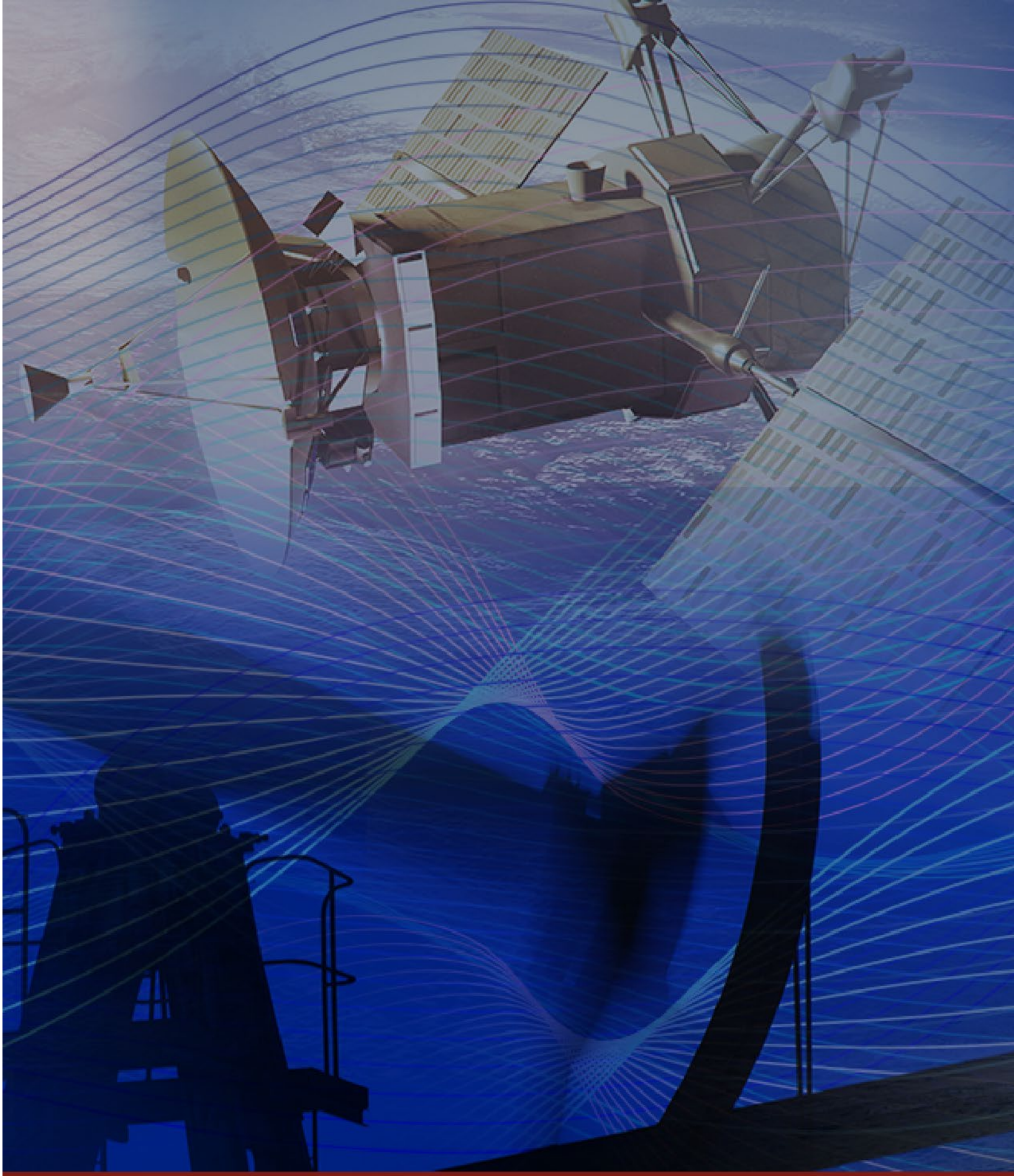

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