

Presentation Summary for MySep organised Separation and CFD Seminar (with a twist of heat exchangers), Houston, TX, 23 January 2018

Name	Company	Title	Abstract	Biography
Ken Arnold	K Arnold Consulting, Inc	<i>Separation: What do we know ?; Do we need to do better ?</i>	This presentation discusses the history of separation design and how our understanding of sizing separators for gas capacity has evolved to the present time. It also discussed concepts for liquid capacity determination of both two phase and three phase separators. The focus is on both what we know and what we don't know about understanding how to design both two phase and three phase separators, why we need to do better and where avenues of further research and field verifications are needed.	Ken Arnold has fifty years of industry experience with 16 years at Shell Oil Company. He founded Paragon Engineering Services in 1980, which was purchased by AMEC in 2005. In September 2007, Ken retired from AMEC and formed K Arnold Consulting, Inc (KACI). He is currently a part-time Technical Advisor for both WorleyParsons and Oxy Oil & Gas while maintaining KACI for independent consulting work. Ken is co-author of two textbooks and author of over 50 technical articles on safety management, project management and facilities design
Ed Grave	Separation Technology Solutions LLC	<i>Systematic Comparison of MySep Performance Predictions for a 3-phase Separator with Independent Sources</i>	This presentation discusses the MySep methodology, assumptions, and theoretical predictions versus alternative prediction sources. Rating and results are compared for a clean three-phase separator with known operating performance, following revamp of the unit. Some potential improvements to MySep are suggested which may offer increased user flexibility. In addition a brief discussion is made of possibilities for some further validation of MySep.	Ed graduated from New Jersey Institute of Technology with a Master of Science in 1982. He later joined Mobil Research & Development Company in 1990 as a mass transfer specialist. Ed recently retired as ExxonMobil's Upstream Senior Technical Advisor for Fractionation & Separation at ExxonMobil Upstream Research Company. His team was responsible for research, design, and troubleshooting, all fractionating & separation systems for the entire ExxonMobil Upstream organization. He also led the effort in designing and qualifying separation system for ultra-deep water, making ExxonMobil ready to meet their future needs. Ed was presented with a Lifetime Achievement award for Innovation and Creativity Excellence by ExxonMobil Upstream Research in 2015. He initiated and guided the joint industry Separations Technology Research (STAR) Program on qualifying separation equipment as technical chairman. He also served as vice-chair at SPE's Separation Technology Technical Section (STTS).
Paul R. Davies	ConocoPhillips	<i>Trouble shooting Separation with MySep and CFD, an LNG Licensor's Experience</i>	ConocoPhillips as licensor of the Optimized Cascade® Process for liquifying natural gas have utilized MySep, and CFD in troubleshooting and developing our separator specifications. We will show what some of these experiences including recent experiences in failures.	Presentation withdrawn by Conoco Phillips Supervisor LNG Process Engineering at ConocoPhillips
Austin Calico	Marathon Petroleum	<i>MySep Success Stories in Refining Applications</i>	This presentation discusses three specific refining applications where MySep was used in troubleshooting and solving separation issues. The applications involve tower overhead systems and compressor drum systems, where carryover was suspected but the reasons and remedies were not well understood. In each case, MySep confirmed the observed carryover rates and aided in the design of a solution.	Austin Calico is a process design technologist with Marathon Petroleum, where he has worked for 15 years. His experience with Marathon Petroleum includes Process Engineering, Operations, Refining Planning, and Process Design. He graduated with a B.S. in Chemical Engineering from the University of Cincinnati and lives in Ashland, Ky
Motoki Irikura	Chiyoda Corporation	<i>Measurement of droplet size distribution in separator and inlet piping for evaluation of MySep.</i>	Carryover of droplets from a gas-liquid separator is of concern in many Oil and Gas industry applications, due to the potential impact on downstream equipment operation. Quantitative analysis of separator performance requires understanding of the mist loading in upstream pipework and detailed modelling of the separation efficiency of key elements including gravity separation zones and mist eliminators. MySep offers a systematic means of assessing geometry and process phase interaction to evaluate droplet carryover. Chiyoda Corporation has commissioned an experimental study to measure the droplet size distributions in a test separation system. This presentation introduces comparisons of measurements and MySep predictions.	Motoki Irikura is a CFD specialist with Chiyoda Corporation, where he has worked for 13 years. His experience with Chiyoda includes CFD analysis of various equipment in oil refinery, chemical and LNG plants for assisting conceptual equipment design and trouble shooting. He graduated with a Ph. D. in Mechanical Engineering from the Kobe University and lives in Tokyo, Japan.
Moize Turkey	AMACS	<i>"MySep" - Unbiased and Effective Communication Tool for Separation Best Practice</i>	Engineering effective separation for a wide range of upstream, midstream and downstream applications is often hampered by the use of different design and analysis tools. This can lead to project delays and, in some cases, may result in the adoption of inappropriate designs, as complete alternative scenarios are overlooked. This presentation cites examples of good design practice, based around the use of independent software to standardize design and performance analysis.	Moize Turkey works as an Applications Engineering Manager with AMACS Process Tower Internals. The company specializes in providing solutions for phase separation & mass transfer internals to upstream, midstream and downstream industries. Over 10 years of his tenure, his experience with AMACS includes Process/Applications Engineering, Technical Sales and Project Management. He graduated with a M.S. in Chemical Engineering from the Texas A&M University – Kingsville, Texas & B.E. in Chemical Engineering from University of Pune, India.
Bob Chin	Former Shell	<i>Some lessons learned in separator troubleshooting</i>	This presentation discusses examples of troubleshooting separation problems and lessons learned from those experiences. The applications cover issues related to solids, droplet shearing, mal-distribution, and instrumentation	Bob is a co-founder and past chair of the SPE global Separations Technology Technical Section and author of the separator design chapter in the SPE Petroleum Engineering Handbook. He has 30+ years in the oil and gas industry, mainly with Shell. Bob joined Shell in 1981 advancing research on multi-phase flow, leak detection, and separations. He left Shell in 1999 to form a separator design and supply company, returning to Shell in 2006 where he led teams on Facilities for EOR and Subsea Processing R&D. Bob retired from Shell in 2014, is co-founder of Padden Engineering, and consults in the oil and gas industry
Victor van Asperen	TechnipFMC	<i>Using MySep to keep your separation suppliers honest, a supplier's perspective</i>	Operating companies have several means at their disposal to ensure their separation suppliers comply with their separation efficiency requirements. Performance guarantees are generally applied and sometimes operators will go as far as doing costly field performance tests after installation. A better way to evaluate whether the requirements will be met is to do an up-front assessment by using model calculations to predict the efficiency of a proposed solution. Experiences from an equipment supplier's perspective will be shared to illustrate how the use of MySep in this process can result in a better collaboration between operator and equipment supplier and generate a higher degree of confidence in the selected separation solution.	Victor has an MSc in Chemical Engineering / Biochemical Engineering and a post-graduate degree in Process and Systems Design from the Delft University of Technology in the Netherlands. He has been working on separation technologies for TechnipFMC (formerly FMC Technologies Separation Systems and CDS Engineering) for the last 19 years in different geographical areas: The Netherlands, United Arab Emirates and the USA. Throughout his career Victor has worked in R&D, CFD, Process Engineering, Sales and Management and has been responsible for the process design of over 200 separator projects. Victor is currently the chairman for the Separations Technology Technical Section in the SPE.

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Cris Heijckers	MySep	<i>Upcoming developments for MySep and MySep-RunTime</i>	This presentation provides an update on what to expect from MySep in the coming year and beyond. This includes ongoing activities to expand MySep-RunTime for use with more process simulators and other software. New features of the upcoming MySep application release will be revealed. Also, the longer term outlook will be discussed.	Cris Heijckers is Managing Director at Kranji Solutions Pte Ltd and Director at MySep Pte Ltd. He has a Master of Science degree in Mechanical Engineering from Delft University of Technology in The Netherlands, with process equipment as specialisation. Upon completion of his thesis on the characterisation of an Axial Flow demisting cyclone, he joined CDS Engineering where he worked for ten years in Research & Development, (senior) process engineer and manager functions. The last six years at CDS he was responsible for process design and sales of separation equipment in the Asia Pacific region. In 2008, Cris co-founded Kranji Solutions Pte Ltd in Singapore to specialise in separation troubleshooting services. In 2013 he co-founded MySep Pte Ltd.
Tom Ralston	Kranji Solutions	<i>CFD - Troubleshooting critical Heat Exchanger applications</i>	Heat exchangers of different types are essential in many processes, including services such as: production gas compression inter-cooling; crude pre-heat; reactor feed effluent; LNG pre-cooling and liquefaction and so on. In common with phase separation, exchanger performance can be adversely affected by poor flow distribution. This presentation will draw on experience of conventional exchanger design and analysis, presenting some critical applications where performance and integrity issues arise. The value of CFD in revealing details of single phase and multi-phase flow phenomena will be explored.	Tom is a consultant for MySep and Kranji with responsibilities including marketing, sales and exchanger technology. His career in process engineering began in modelling physical properties of fluids at the UK National Engineering Laboratory (NEL). He contributed to experimental and analytical research, consultancy activities and software development for HTFS & commercial customers. He progressed to manage HTFS activities on Air-cooled, Shell & Tube Heat Exchangers and NEL's Heat Transfer Group. Tom managed the HTFS software business for Hyprotech which became AspenTech's Exchanger Design & Rating (EDR) business.
Gregory Dolph	Schneider Electric	<i>The digital twin: Built using best-practice software</i>	The digital twin of a plant is a software replication of a real plant, that will support all engineering and operational activities throughout the plant lifecycle. Schneider Electric's approach to the digital twin is to build best-practice simulation models by using in-house tools and teaming up with 3rd party providers for highly specialized applications. This presentation will feature developments underway to integrate the interaction of MySep-RunTime with the Dynsim dynamic simulation platform. The value of the digital twin to process operations will be highlighted along with specifics of providing rigorous separation performance within such models.	Gregory Dolph is a Consulting Manager in the Simulation and Training division of Schneider Electric, where he has worked for 6 years. His experience is in developing modeling software of processes in oil refining, chemical, and metal processing plants as well as their control systems. He has worked in the dynamic simulation field for over 30 years.
Henri Witteveen	MySep	<i>MySep-RunTime - the value of rigorous models in simulation</i>	Since the release of the MySep-RunTime module at the beginning of 2017, a step-change improvement in the fidelity of UniSim models incorporating separator unit-operations has been achievable. This presentation will demonstrate the new capability of MySep-RunTime modelling within Aspen HYSYS steady-state and dynamic process models. Using real applications, the value of embedded, accurate representation of separator performance will be demonstrated. Examples will include gas production with specified product gas dew-point where operating profitability is directly impacted.	Henri Witteveen holds a MSc in Chemical Engineering. For the past 12 years he has been working in the oil and gas industry. His main expertise is on separation technology and design of separation systems. From 2005 till 2009 Henri has worked for CDS Engineering. In the first years he worked as a process engineer on various projects relating to design and supply of separation internals. He was also involved in a number of R&D projects, both internal as well as client related. Later on, he worked as a senior process and sales engineer for the European region as well as the Asian pacific region. From 2010 onwards Henri has been working for Kranji Solutions and MySep Pte Ltd as a senior process engineer. He has worked on various R&D projects for development of tailor-made solutions in the area of separation technology.