



IASH 2017
15th International Conference on
Stability, Handling and Use of Liquid Fuels
Rome, Italy • 10-14 September 2017



Preliminary Program

FUEL SPECIFICATIONS AND THE IMPACT OF DISTRIBUTION AND NEW PRODUCTION TECHNOLOGIES

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BASF SE – Chevron - ECHA Microbiology Ltd. – Federal Aviation Administration - Flint Hills Resources LP
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Sheraton Parco de' Medici – Building 1
Technical Sessions located in Sala Medici
Technical Posters & Exhibits located in Sala Visconti
Speaker Ready Room located in Sala Scaligeri
Registration from 07.30 – 17.00 Daily

SUNDAY, 10 SEPTEMBER 2017

10.00 – 12.00 Board of Directors Meeting in Sala Pepoli (Members & Invited Guests)
 14.00 - 17.00 Registration in Lobby of Building 1 – Continues throughout the week in Sala Medici Foyer
 12.00 - 17.00 Set up Posters and Exhibits in Sala Visconti

19:00–21:30 **OPENING RECEPTION POOLSIDE AT THE SHERATON PARCO de' MEDICI, BUILDING 1**
Sponsored by Southwest Research Institute

MONDAY, 11 SEPTEMBER 2017

07.00 – 08.30 Breakfast in Savoia Restaurant included in hotel group rate
08.30 – 08.45 Welcome and Introduction by Pam Serino, Conference Chairperson

08:45 – 09:15	KEYNOTE ADDRESS: How European Standards Guarantee Fuel Quality, Vehicle Functioning and Emissions - <i>Ortwin Costenoble, CEN Fuels Standardization</i>
09:15 – 09:40	Chevron Award of Excellence in Honor of John Bacha paper: Phenols and Aromatic Methyl Ethers from Biomass Pyrolysis Oil: Implications for Jet Fuel Stability – <i>Mariam Ajam, Carl L. Viljoen, Chris Woolard, and Eric van Steen</i>
09.40	SESSION 1: FUEL PRODUCTION AND QUALITY CONTROL Joanna Bauldreay, Session Chair
09:45 - 10:10	Application Progress of Residue Hydroprocessing in China - <i>Jiankun Liu</i>
10:10 –10:35	Stability Characterization of Residual Hydroracking Effluents by the S-value Method (ASTM D7157) Effect of the Analytical Parameters – <i>J��r��mie Barbier, Andre Diot, Matthieu Dreillard, and Joao Marques</i>
10:35 –10:55	BREAK
10:55 –11:20	Factors Affecting Filterability of Middle Distillate Fuels - <i>David A Daniels, Andrew McKnight, Arthur Fogiel, Alex Belly, and Christopher LeMieux</i>
11:20 –11:45	A Theroretical and Full Scale Investigation into the Use of Tank Settling to Remove Water and Solid Contaminants From Aviation Fuel - <i>Alisdair Clark, Steve D. Anderson, Andrew Glendinning, and Gary Norris</i>

11:45	SESSION 2: MARINE DIESEL FUELS Zhenning Gu, Session Chair
11:50 – 12:15	Effects of Aromatic Type and Concentration on Properties and Stability of Alternative Marine Diesel - <i>Jinxia Fu and Scott Q. Turn</i>
12:15 – 12:40	The Impact of Changing Regulation on Marine Fuel Quality and the Role and Effectiveness of Fuel Additives - <i>Simon Mulqueen and Michael Banning</i>
12:40 – 14:00	LUNCH IN SAVOIA RESTAURANT – Sponsored By Falex
14:00	SESSION 3: FUEL CONTAMINATION Rick Kamin, Session Chair
14:00 –14:25	Impact of Water Bottoms on Aviation Turbine Fuel Chloride Content – <i>Paul P. Wells</i>
14:25 –14:50	Application of Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry to the Characterization of High Molecular Weight Fuel Contaminants – <i>Thomas N. Loegel, Jeffery D. Cramer, and Iwona A. Leska</i>
14:50 –15:00	BREAK
15:00 –15:25	Quantification of Phosphate Ester-Based Hydraulic Fluid in Jet Fuel – <i>Diana Gertopski Stamker, Moshe Rabaev, and Konstantin Tartakovsky</i>
15:25 –15:50	Cold Filter Blocking Tendency as a Predictor for Low Temperature Operability of Diesel Fuels – <i>Ian P. Mylrea, Jerry Burton, and David Swan</i>
15:50 –16:15	A Users Perspective and Experience with Particle Counting in Liquid Fuels – <i>Joel A. Schmitgal</i>
18:00 –19:30	POSTER SESSION & EXHIBITOR RECEPTION IN SALA VISCONTI – Sponsored by UDRI

TUESDAY, 12 SEPTEMBER 2017

07.00 – 08.00 Breakfast in Savoia Restaurant include in hotel group rate

08.00 – 08.15 Announcements

08:15	SESSION 4: BIODIESEL AND DIESEL Melanie Thom, Session Chair
08:20 – 8:45	Storage Stability Studies and Shelf Life Determinations of Commercial Brazilian Biodiesels Stocked in Sub-tropical Conditions in Carbon Steel Containers – <i>Eduardo H. de S. Cavalcanti, Adriane Zimmer, Marcos Ferrao, and Fatima Menezes Bento</i>
08:45 – 09:10	Thermal and Oxidative Instability in Biodiesel Blends During Vehicle Use and Onboard Fuel Storage – <i>Steven R. Westbrook</i>
09:10 – 09:35	Demystifying the Role of Diesel Fuel Composition in Internal Injector Deposits with Vase – <i>David Abdallah, Scott K. Berkous, Krystal B. Wrigley, Matt I. Watkins, and Paul Lacey</i>

09:35– 10:00	Degradation of Diesel in a Modern FIE System – <i>Christopher Smith, Kesavan Gopalan, Christopher J. Chuck, and Christopher D. Bannister</i>
10:00–10:20	BREAK
10:20 –10:45	Adventures in Diesel Stability: Standardizing the Quartz Crystal Microbalance Method – <i>David Evans, Renee I. Webster, Paul M. Rawson, Nathan Matheson, and Christy-Anne Stansfield</i>
10:45 –11:10	Carbonaceous Internal Diesel Injector Deposits: Mechanisms, Characterization, and Remediation – <i>Andrew McKnight, Jim Barker, and Jacqueline Reid</i>
11:10	SESSION 5: AVGAS and GASOLINE Anne Gandubert, Session Chair
11:15 –11:40	A Novel Approach for the Evaluation of the Deposit Forming Tendencies of Spark-Ignition Fuels – <i>Steven R. Westbrook and George R. Wilson III</i>
11:40 –12:05	Oxidation Stability of Unleaded Aviation Gasoline for General Aviation – <i>Cunping Huang, Sneha Gollamudi, Jonathan Doyle and Dave Atwood</i>
12:05 –13:30	LUNCH IN SAVOIA RESTAURANT - Sponsored by AD Systems
13:30	SESSION 6: ALTERNATIVE AVIATION FUEL Edwin Corporan, Session Chair
13:35 – 14:00	Impact of Aromatic Types and Quantities on O-Ring Polymers <i>Mikeal Sicard, Jacques Ancelle, Bruno Raepsaet, and Frédéric Ser</i>
14:00 – 14:25	Impact of Aromatic Content in Different Alternative Aeronautic Fuel Emissions – <i>D. Delhaye, J Ancelle, M. Sicard, L. Jing, and I. K. Ortega</i>
14:25 – 14:50	Evaporation Ignition of Alternative Fuels – <i>O. Rouzaud, J Garraud, R. Lecourt, C. Lempereur, M. Orain, G. illac, and M. Sicard</i>
14:50 – 15:15	BREAK
15:15	SESSION 7: MICROBIOLOGY Dietmar Posselt, Session Chair
15:20 –15:45	Use of Illumina 16S rRNA Next Generation Sequencing to Investigate Anaerobic Bacterial Community Composition in Environmental and Fuel Associated Waters – <i>Giovanni Cafa, Lisa Offord, and Joan Kelley</i>
15:45 –16:10	Advanced Molecular Tools for the Detection and Mitigation of Fuel Biodeterioration – <i>Oscar N. Ruiz, and Thusitha S. Gunasekera</i>
16:10 –16:35	Factors Effecting the Precision of Fuel Microbiology Test Methods – <i>Frederick J. Passman, Joan Kelley, and Pat Whalen</i>
16:35 –17:00	The Relationship Between Microbiological Contamination in Water Phase and Fuel Phase in Jet Fuel Systems and its Detection by Industry Standard Methods – <i>Gareth J. Williams, and Graham C. Hill</i>

WEDNESDAY, 13 SEPTEMBER 2017

07.00 – 08.00 Breakfast in Savoia Restaurant include in hotel group rate

08.00 – 08.15 Announcements

08.15	Session 8: FUEL TESTING AND TEST METHODS – Section 1 Steve Westbrook, Session Chair
08:20 – 08:45	Comparison of Particulate Contamination Measurement Techniques in Distillate Fuels – <i>Thomas G. Smagala, Camden Cook, Andy Ye Yuan Chen, and Krege M. Christison</i>
08:45 – 09:10	Evaluation of Particle Counting as a Valid Tool to Determine the Filtration Efficiency – <i>Robert Pawlik, Tom Muzik, and Lewis Wolfe</i>
09:10 – 09:35	What New Methods for Evaluating D3241 Heater Tubes Deposit Thickness May Mean to the Development of New D3241 Methods – <i>Michael Croudace</i>
09:35 – 10:00	Novel Automated Systems for Onsite Fuel Stability and Compatibility Testing According to ASTM D4740 – <i>Didier Pigeon</i>
10:00 – 10:20	BREAK
10:20	SESSION 8: FUEL TESTING AND TEST METHODS – Section 2 Amy Carico , Session Chair
10:25 – 10:50	FAME in Jet Fuel: A Novel Analytical Test Method Based on Laser Mid-Infrared Spectroscopy – <i>Bernhard Siebenhofer, Michael Martl, and Wolfgang Ritter</i>
10:50 – 11:15	Understanding Precision Issues with Single Temperature Testing by ASTM D3241 – <i>George R. Wilson III</i>
11:15 – 11:40	Application of Chemometric Methods to Devolve Co-Eluting Peaks in GC-MS Data – <i>Jeffery A. Cramer, Mark H. Hammond, and Thomas N. Loegel</i>
11:40 – 12:05	Selective Isolation of Cyclic Sulfides from Jet Fuel and Their Contribution of Fuel Oxidation Rates – <i>Paul Rawson, and Sylvester Abanteriba</i>
12:05– 13:20	LUNCH IN SAVOIA RESTAURANT - Sponsored By Shell Aviation
13:20	SESSION 8: FUEL TESTING AND TEST METHODS – Section 3 Anthony Kitson-Smith, Session Chair
13:25 – 13:50	Development of a New Automotive Fuel Filter Test Method Incorporation Vibration and Cyclic Flow Test Parameters - <i>Gary Bessee and Larry Hollingsworth</i>
13:50 – 14:15	Comparison Between SAE J1488 and ISO 16332 Diesel Fuel Water Separation Test Methods – <i>Gary Bessee and Kristi Rutta</i>
14:15 – 14:40	Fuel Contamination Specifications by ASTM D5452 Gravimetric , MIL-DTL-2261D Light Obscurance (JF-WA1-NP), and Laser Particle Counter ASTM D7619, Comparisons and Performance Review, Future Potentials – <i>Alan J. Fougere</i>
18:30	Meet in Hotel Lobby for Transportation to Awards Dinner at 6:15
19:00-22:00	IASH AWARDS DINNER AT VILLA MIANI Sponsored by Parker Hannifin and Pratt & Whitney

THURSDAY, 14 SEPTEMBER 2017

07.00 – 08.00 Breakfast in Savoia Restaurant included in hotel group rate

08.00 – 08.15 Announcements

08.15	SESSION 9: FUEL PROPERTIES AND EFFECTS – Section 1 David Abdallah, Session Chair
08:20 – 08:45	New Sulphur Reduction Technology as Solution to Increasingly Stringent Sulphur Regulations <i>-Zhenning Gu, Ksenija Babic, Paul Biggerstaff, Don Wolfe, Jerry Weers, and Waynn Morgan</i>
08:45 – 09:15	Evaluation of Aviation Fuel Property Influences on Diesel Engine Performance <i>- Andy McDaniel</i>
09:15 – 09:40	Pentamethyl Heptane as a Primary Reference Standard for Cetane Number <i>- Indresh Mathur and Mical Renz</i>
09:40 – 10:05	Design of an Onboard Aviation Fuel Deoxygenator Unit for Improvement of Fuel Thermal Stability – <i>Ehsan Alborzi, Matthew Dwyer, Simon G. Blakey, and A H J M Meijer</i>
10:05– 10:25	BREAK
10:25	SESSION 9: FUEL PROPERTIES AND EFFECTS – Section 2 David Abdallah, Session Chair
10:30 – 10:55	The Content of the ISO-Paraffins in Jet Fuel and its Influences on Properties <i>- Zhiping Tao</i>
10:55 – 11:20	Endothermic Reactivity of Hydrocarbons Under Conditions Relevant to High Speed Flight Systems – <i>Matthew DeWitt, Donald K. Phelps, Theodore Williams, Tyler Hendershott, Quinn Casselberry, Rich Striebich, Linda Shafer, Steven Zabarnick, Zachary West, and Tim Edwards</i>
11:20	SESSION 10: FUEL CHEMISTRY, RESEARCH AND DEVELOPMENT – Section 1 Matthew DeWitt, Session Chair
11:25 – 11:50	The Role of Hydrocarbon Composition on the Thermal Stability of Aviation Fuel <i>- Matthew R. Dwyer, Simon G. Blakey, Ehsan Alborzi, and Anthony J.H.M Meijer</i>
11:50 – 12:15	The Impact of Organonitrogen Compounds on the Storage Stability of Middle Distillate Fuels <i>Robert E. Morris, Thomas N. Loegel, Kristina M. Meyers, Iwona W. Leska, Christopher J. Katlile, Alison E. Metz.</i>
12:15 – 13:25	LUNCH IN SAVOIA RESTAURANT
13:25	SESSION 10: FUEL CHEMISTRY, RESEARCH AND DEVELOPMENT – Section 2 Matthew DeWitt, Session Chair
13:30 – 13:55	Investigation of Thermally Unstable Aviation Turbine Fuels <i>- Zachary West, Linda Shafer, Richard Striebich, Steve Zabarnick and Timothy Edwards</i>

13:55 – 14:20	The Detailed Measurement of Fuel Heteroatoms by Element Specific Detectors and GCxGC-MS - <u>Richard C. Striebich</u> , Linda M. Shafer, Susan S. Mueller, Zachary J. West, and Steven Zabarnick
14:20 – 14:45	Studies of the Role of Heteroatomic Species in Jet Fuel Thermal Stability: Model Fuel Mixtures and Real Fuels - <u>Steven Zabarnick</u> , Zachary J. West, Linda M. Shafer, Susan S. Mueller, and Richard C. Striebich
14:45 – 15:05	BREAK
15:05	SESSION 11: FUEL CHEMISTRY, RESEARCH AND DEVELOPMENT – Section 3 Robert Morris, Session Chair
15:10 – 15:35	Unraveling the Detailed Composition of Oxidized Jet Fuels: An Original Detailed Mechanism of Toluene Autoxidation - <u>Arij Ben Amara</u> , Detlev Conrad Mielczarek, Mikael Matrat, and Laurie Starck
15:35 – 16:00	Wall Roughness Effects on Deposition of Thermally Stressed Aviation Fuel - <u>Phil Gadsby</u> and Simon G. Blakey
16:00 – 16:25	Gaining a Fundamental Understanding of Fuel Performance Through Advanced Chemical Composition Measurements - <u>Robert E. Synovec</u> , Chris E. Freye, and Matthew C. Billingsley
16:25 – 16:55	PLENARY SESSION: Matt Fielder IASH Chairman
19:00–21:00	CLOSING RECEPTION ON RESTAURANT TERRACE Sponsored by Air BP

SALA VISCONTI
TECHNICAL POSTER SESSION & EXHIBITOR RECEPTION
MONDAY EVENING, 11 SEPTEMBER 2017
18.30 – 20.00

Steven Zabarnick, Session Chair

- 1. AC2T Research GmbH (GERMANY) – Marcella Frauscher**
Identification and Quantification of Oxidation Products of Fuel Components Analyzed by Mass Spectrometry
- 2. Air Force Institute of Technology (POLAND) – Jaroslaw Sarnecki**
Laboratory Test Rig with Miniature Turbojet Engine as a Tool for Tests of Alternative Aviation Fuels
- 3. BASF (GERMANY) - Mark Parsons**
Thermal Stability Additive (BASF - Rewriting)
- 4. Chimec S.p.A. (ITALY) – Milena Mantarro**
Scale Down of Dewaxing Process
- 5. Chimec S.p.A. (ITALY) – Milena Mantarro**
Investigation of the Compatibility Between HFO and LSFO in Maritime Industry and the Effect of Stabilizing Additives Using Fuel Stability Analyzer (ASTM D7157)
- 6. Chimec S.p.A. (ITALY) - Silvia Bozzi**
Microbiological Contamination of Fuel -Treatment Management from Storage Tanks to Waste Water System and on Filling Station
- 7. Chimec S.p.A. (ITALY) – Silvia Bozzi**
Issues with New Raw Materials as Feedstocks in Biofuel
- 8. Conidia Bioscience Ltd. (UK) – Joan Kelley**
Microbial Contamination in Road Vehicle Diesel – A Survey of Gas Station Underground Tanks in Two U.S. States.
- 9. D-2 Inc. (USA) - Alan Fougere**
Comparison of ASTM Method D8073-16 (Small Scale Water Separation Method) With Real Filter Coalescing Performance by Single Element Test Stand Water Mapping
- 10. Defence Science and Technology Group (AUSTRALIA) – Paul Rawson**
Identification of Oxidized Compounds in Aviation Fuels Using Nafion Fibre Solid Phase Microextraction

- 11. Defence Science and Technology Group (AUSTRALIA) – David Evans**
Determination of Ignition Delay and Lean Blowout Limits of Narrow Distillation Profile Alternative Fuels Using a Small Glass Turbine
- 12. ExxonMobil Research & Engineering (USA) – David Abdallah**
Single JFTOT Tests for Understanding the Breakpoint of a Fuel
- 13. IFP Energies Nouvelles (FRANCE) - Laurie Starck**
Modeling Tools to Predict Properties of Jet Fuels (Conventional and Alternative)
- 14. Israel Air Force (ISRAEL) – Moshe Rabaev**
Preparation, Stability and Properties of Water-Emulsified Jet Fuel at Low Surfactant Content
- 15. National Technical University of Athens (GREECE) – Chrysovalanti Tsesmeli**
A Study on the Stability of Marine Distillate Fuel in the Presence of FAME and HVO
- 16. Southwest Research Institute (USA) – Gary Bessee**
Update on EI 1535 Water Mapping Test Method
- 17. Stanhope-Seta (UK) - Paul Spitteler**
Phenol in Aviation Fuel Monitoring on IP 583/ASTM D7797 Equipment
- 18. University of Dayton Research Institute (USA) - Marlin Vangsness**
Microbial Contamination Test Methods in Bulk Fuel Storage
- 19. US Air Force Research Laboratory (USA) – Edwin Corporan**
Fuel Composition-to-Performance Studies at the United States Air Force Research Laboratory's Fuels and Energy Branch
- 20. U.S. Air Force Research Laboratory (USA) – Matt Billingsley**
Combustion Testing of Candidate Rocket Fuels: Overcoming Specification Challenges Through Subscale Evaluation
- 21. U.S. Naval Research Laboratory (USA) - Kristina Myers**
Assessment of the Role of Copper Contamination on Diesel Fuel Storage Stability
- 22. VUV Analytics (USA) – Dan Wispinski**
Introducing ASTM Method D8071 for PIONA Compound Analysis by GC-VUV

EXHIBITORS

AD Systems

- Presented by Didier Pigeon

Air BP

- Presented by Steve Anderson and Alisdair Clark

CHIMEC S.p.A.

- Presented by Silvia Bozzi, Matteo Bascelli, and Stefano Cacciatori

ECHA Microbiology Ltd.

- Presented by Graham Hill, Mike Haywood and Gareth Williams

FALEX Corporation

- Presented by Michael Croudace

Parker Hannifin

- Presented by Matt Fielder and Shaun Skilton

Southwest Research Institute

- Presented by Gary Bessee, Steve Westbrook & George Wilson

Stanhope-Seta

- Presented by Martin Verity and Paul Spitteler

University of Dayton Research Institute

- Presented by Steve Zabarnick & Matt DeWitt