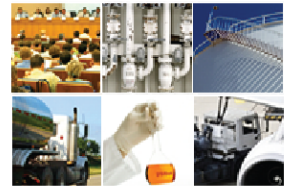


**IASH 2013**  
13th International Symposium on  
Stability, Handling and Use of Liquid Fuels  
Rhodes, Greece • 6-10 October 2013



## Symposium Program

### The Storage, Handling and Use of Liquid Fuels: Today, Tomorrow and Beyond – The Issues



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**In Memoriam**  
**Jim Crighton, Energy Institute**

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**Technical Sessions located in Imperial Ballroom**  
**Technical Posters located in Marble Foyer & Exhibits located in Imperial Foyer**  
**Speaker Ready Room located in the Aphrodite Board Room**  
**Registration from 07.30 – 17.00 Daily**

**SUNDAY 6<sup>th</sup> OCTOBER 2013**

- 10.00 - 12.00 Board of Directors Meeting in Kamiros Room (Members & Invited Guests)  
14.00 - 17.00 Registration in Marble Foyer – Continues throughout the week  
12.00 - 17.00 Set up Posters and Exhibits in the Imperial Foyer
- 18.30 - 22.00 **OPENING RECEPTION AT ALEXIS4SEASONS RESTAURANT IN RHODES CITY CENTRE**  
**Buses will depart at 18.00 from the Sheraton Lobby**  
**Sponsored by ExxonMobil Aviation**

**MONDAY 7<sup>th</sup> OCTOBER 2011**  
**IMPERIAL BALLROOM**

- 08.00 - 08.15 Welcome and Introduction by Howard Chesneau, Symposium Chairman
- 08.15 - 08.45 **Keynote Address: Sampling and Fuel Quality Management, The Real World**  
– *Andrew Clifford, Victor Hughes, and Anthony Kitson-Smith*
- \*\*\*\*\*
- 08.45 Session 1. RENEWABLE FUELS**  
**Matt, Fielder, Session Chair**
- \*\*\*\*\*
- 08.50 - 09.15 **Co-Hydroprocessing – Biofuels in Middle Distillates (UK/USA)** – *Ulrich Balfanz, Alisdair Clark, Steve Anderson, Wenzel Strojek and Tuan Anh Tran*
- 09.15 – 09.40 **Hydrocarbon Renewable and Synthetic Diesel Fuel Blendstocks: Composition and Properties (USA)** – *Thomas G. Smagala, Earl Christensen, Krege M. Christison, Rachel E. Mohler, Eric Gjersing and Robert L. McCormick*
- 09.40 - 10.05 **Biomass Pyrolysis Oil as a Renewable Feedstock for Bio-Jet Fuel (SOUTH AFRICA)**  
– *Mariam Ajam, Chris Woolard and Carl L. Viljoen*
- 10.05 - 10.25 BREAK**
- 10.25 - 10.50 **Additive Effects on Alternative Fuels, Immediate and After Long-Term Storage (USA)**  
– *George R. Wilson, III and Lori Zuziak*
- 10.50 - 11.15 **Next Generation Fuel Filtration Media (GERMANY)** – *Sven Siegle, Máté Nagy and Howard Yu*
- 11.15 – 11.40 **Biofuel Feedstocks Metrics Study (USA)** – *Pamela M. Serino*
- 11.40 - 12.05 **Automated Instrument to Quantify D3241 Absolute Deposit Using Interferometry (Interference Method) (FRANCE)** - *Didier Pigeon*
- 12.05 - 13.30 LUNCH IN CASTELLANIA RESTAURANT Sponsored by Energy Institute**

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**13.30            Session 2.    CHALLENGES IN FUEL DISTRIBUTION, STORAGE AND USE  
WITH TODAY'S AND TOMORROW'S FUELS  
Anthony Kitson-Smith, Session Chair**

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13.35 – 14.00    **Pitfalls & Quality Assurance During the Supply Chain of Biofuels in the Transport Sector (BELGIUM) - Kurt Tyssen**

14.00 - 14.25    **Impact of Jet Fuel Storage Roof Design on Free Water Formation (USA/UK)  
– Paul P. Wells and Anthony Kitson-Smith**

14.25 – 14.50    **Membrane-Based Hydrocarbon Fuel Degassing (USA) – Harry Cordatos**

14.50 - 15.15    **Prediction of Odor Issues Due to Volatile Sulphur Species in Hydrocarbon Liquids (NETHERLANDS) – Aldo Caiazzo, Ivo Dijs and Koen Steernberg**

**15.15 - 15.35    BREAK**

15.35 – 16.00    **Interaction of Aromatic Molecules and Elastomeric Materials: Seal Performance and Hansen Solubility Parameters (UK) – Simon Blakey, Sam Kingdon and Chris W. Wilson**

16.00 – 16.25    **KEEP RUNNING: Bulk Diesel Fuel Filtration, Why the WW Fuel Charter May Not Be Clean Enough, and the Importance of Inlet Filtration (USA/BELGIUM) – Scott Grossbauer, Joseph Block, James Doyle, Brad Grove, Philip Johnson and Paul Klick (presented by Niko Verhaegen)**

**18.30 - 20.00    POSTER SESSION & EXHIBITOR RECEPTION IN IMPERIAL FOYER  
Sponsored by Air BP**

**TUESDAY 8<sup>th</sup> OCTOBER 2013  
IMPERIAL BALLROOM**

08.00 - 08.10    Announcements

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**08.10            Session 3.    AVIATION FUELS TODAY AND TOMORROW  
Stan Seto, Session Chair**

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08.15 – 08.40    **Impact of Additives on Jet Fuel Thermal Stability (USA) – David J. Abdallah, Lauren Kreno, Roger G. Gaughan and Dennis H. Hoskin**

08.40 - 09.05    **Impact of GTL Kerosene Blend Composition on Flight Performance of a Cessna Aircraft Citation II (UK) – Joris A. Melkert, Tim A. Snijders, Joanna M. Bauldreay, and Paul F. Bogers**

09.05 - 09.30    **Synthetic Paraffinic Kerosenes – Impact of Composition Differences on Jet Fuel Candidate Properties (UK) – Simon Blakey, Joanna M. Bauldreay, Christopher C. Wilson, Ehsan Alborzi and Yue Liu**

09.30 – 09.55    **Effect of Aromatic Content on Thermal Stability of Jet Fuels (UK) – Simon Blakey, Abdi Yusif and Chris W. Wilson**

- 09.55 – 10.20 **Experimental & Modeling Study of the Impact of FAME on Oxidation Stability of Jet Fuels (FRANCE)** – Arij Ben Amara, Nicolas Jeuland, Laurie Starck, Pascal Hayrault and Andre Nicolle
- 10.20 – 10.40 **BREAK**
- 10.40 – 11.05 **Experimental and Modelling Studies of the Combustion of Alternative Aviation Fuels (UK)** - Kevin J. Hughes, Elena Catalanotti, Mohamed Pourkashanian and Chris W. Wilson
- 11.05 – 11.30 **Pre-Refined Crudes and Their Impact on Jet Fuel Thermal Stability (USA)**  
– Roger G. Gaughan, David J. Abdallah and Dennis H. Hoskin
- 11.30 – 11.55 **The Content of the Iso-Paraffins in Jet Fuel and Its Influence on Properties (CHINA)**  
– Zuoran Shi and Zhiping Tao
- 12.00 – 13.30 **LUNCH IN CASTELLANIA RESTAURANT**  
**Sponsored by Southwest Research Institute**

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**13.30 Session 4. CHEMICAL EFFECTS ON FUEL PROPERTIES**  
**Roger Gaughan, Session Chair**

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- 13.35 - 14.00 **Effect of Fuel Chemical Composition on Supercritical Reactivity and Deposition Propensity (USA)** – Matthew J. DeWitt, Brian McMasters, Theodore Williams, Tyler Hendershott, Rich Striebich, Tim Edwards and Donald K. Phelps
- 14.00 - 14.25 **Effect of Addition of Aromatics on the Thermal Oxidative Stability of Alternative Aviation Fuels (USA)** Matthew J. DeWitt, Zachary West, Steven Zabarnick, Linda Shafer, Richard Striebich and Tim Edwards
- 14.25 – 14.50 **Experimental and Theoretical Investigation of Pathways to Deposit Formation in Thermally-Stressed Aviation Fuel in the Presence of Nitrogenous Additives (UK)**  
- Detlev C. Mielczarek, Simon Blakey, Kevin J. Hughes, Derek B. Ingham, Mohamed Pourkashanian and Chris W. Wilson
- 14.50 – 15.15 **Understanding Phenol Levels in Jet Fuel (USA)** – David J. Abdallah, Frank P. DiSanzo, Roger G. Gaughan, Mark W. Genowitz, Paul P. Wells and Dennis H. Hoskin
- 15.15 – 15.40 **Phenol in Aviation Fuel Monitoring on IP 583 / ASTM D 7797 Equipment (UK)**  
- Paul Spitteler and David Abdallah

**15.40 - 16.00 BREAK**

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**16.00 Session 5. TESTING**  
**Matthew DeWitt, Session Chair**

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- 16.05 – 16.30 **Determination of Water Droplet Size Distributions in Diesel and Aviation Fuels (USA)**  
- Gary Bessee
- 16.30 – 16.55 **Overview of Ellipsometer as an Absolute Way to Measure D 3241 Deposit Thickness (USA)** – Ervin E. Schlepp, Shaojuan Yu and Michael C. Croudace
- 16.55 – 17.20 **A Novel Small-Scale Water Separation Instrument, WSI (USA/UK)** – Alan J. Fougere, Ian Mylrea and Paul Spitteler

17.20 – 17.45 **In-Line Turbidity / Haze Detection in Refined Fuels (USA)** – *Kam Mohajer and Craig McWhorter*

**FREE EVENING**

**WEDNESDAY 9<sup>th</sup> OCTOBER 2013  
IMPERIAL BALLROOM**

08.00 – 08.10 Announcements  
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**08.10 Session 5a. TESTING (Continued)**  
**Tedd Biddle, Session Chair**  
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08.15 – 08.40 **Maximizing Efficacy of Field Evaluations of Thermal Oxidative Stability (USA)**  
– *George R. Wilson, III and Jill Bramer*

08.40 – 09.05 **A Fit-For-Purpose Screening Tool Based on Statistical Modelling of Fuel Composition (USA)** - *Robert E. Morris, Mark H. Hammond, Jeffrey A. Cramer, Kristina M. Myers and Thomas N. Loegel*

09.05 – 09.30 **EI/JIG Standard 1530 Quality Assurance Requirements for the Manufacture, Storage and Distribution of Aviation Fuels to Airports (GERMANY)** – *Anja Heckert*

09.30 – 09.55 **DLA Energy Procurement, Distribution, and Quality of Alternative Aviation Fuels for Certification and Approval (USA)** – *Pamela M. Serino*

**Not Able to Attend – Paper to be included in Proceedings**

**The Effect of Cold Flow Improver Concentration on Cloud Point, Pour Point, and Cold Filter Plugging Point of B0 to B20 Blends Made From a Variety of ULSD and B100 Fuels** - *J. Andrew Waynick, NCH Corporation (USA)*

09.55 – 10.15 **BREAK**  
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**10.15 Session 6. ANALYTICAL METHODS**  
**Mike Farmery, Session Chair**  
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10.20 – 10.45 **Use of Scanning Brookfield Viscometry as a Viscosity Equivalent Method for Jet Fuel Freezing Point (USA)** – *Steven Zabarnick, Linda Shafer, Rhonda Cook and Zachary West*

10.45 – 11.10 **Oxidation Stability of Jet Fuel Model Molecules Evaluated by Rapid Small-Scale Oxidation Tests (FRANCE)** – *Mickaël Sicard, Jacques Ancelle, Jean Boulicault, Bruno Raepsaet and Frédéric Ser*

11.10 – 11.35 **Heat Transfer Evaluation by Small-Scale Tube-In-Shell Simulator (USA)**  
– *George R. Wilson, III*

11.35 – 12.00 **Analysis of Phenolic Antioxidants in Fuels by Gas Chromatography-Mass Spectrometry (USA)** – *Robert E. Morris, Thomas N. Loegel, Kristina M. Myers and Christopher J. Katilie*

Add-On **Application of Microbial Metabolism Stichiometry in Modeling Bio-Fueling in Gas Turbine Engines** – *Tosin Onabanjo, Giuseppina di Lorenzo and Eric Goodyear*

12.00 – 13.30 LUNCH IN CASTELLANIA RESTAURANT **Sponsored by Shell Aviation**

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**13.30 Session 7. PROPERTIES & EFFECTS**  
**Pamela Serino, Session Chair**

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- 13.35 – 14.00 **Evidence for a Link Between Fuel Lubricity Loss and Formation of Sodium Deposits (UK)** - *Stephen Cook, Keith Woodhall and Jacqueline Reid*
- 14.00 – 14.25 **Impact of Biodiesel on Filterability and Cold Flow Properties of Diesel BX (BRAZIL)** – *Roberta Miranda Teixeira, Laila de Castro Cortás, Sérgio Luiz C. Viscardi and Eduardo H.S. Cavalcanti*
- 14.25 – 14.50 **Thermal Oxidative Stress of Conventional and Synthetic Fuels in a Dynamic System: Impact on Fit-For-Purpose Properties (AUSTRALIA)** – *David J. Evans, Paul M. Rawson, Christy-Anne Stansfield and Renée L. Webster*
- 14.50 – 15.15 **Characteristics of Neat and Blended Hydrotreated Renewable Diesel Under Storage and Seawater Ballasting Conditions (USA)** – *Jinxia Fu, Petra Kamenikova and Scott Turn*

15.15 – 15.35 BREAK

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**15.35 Session 8. FUEL PROCESSING**  
**Enrico Lodrigueza, Session Chair**

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- 15.40 – 16.05 **Study on Strong Ebullated-Bed Hydrotreating (CHINA)** – *Liu Jiankun and Yang Tao*
- 16.05 – 16.30 **Tools and Strategies for the Optimization of H2S Scavenging in Residual Fuels: A Case History (ITALY)** – *Stefano Tortora, Giacinto Grande, Alexander Orduz and Carlo Federico Lami*
- 18.00 - 18.15 Buses depart for Kallithea Springs
- 18.30 – 22.30 **GALA DINNER AT KALLITHEA SPRINGS**  
**Sponsored by Fuel Quality Services & Pratt & Whitney**  
**& Special Highlight by The Clouds Network Ltd.**

**THURSDAY 10<sup>th</sup> OCTOBER 2013**  
**IMPERIAL BALLROOM**

08.00 – 08.10 Announcements

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**8:10 Session 9. MICROBIOLOGICAL**  
**Edward English, Session Chair**

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- 08.15 – 08.40 **Adnosine Triphosphate Testing – Recent Advances in the Differentiation Between Bacterial and Fungal Contamination and Detection of Dormant Microbes in Fuel and Fuel-Associated Water Samples (USA/CANADA)** – *Frederick J. Passman, Gulerana Maradukhel and Michael Merks*

- 08.40 – 09.05 **Byotrap as a Front-End for Numerous Biotechnologies (USA)** – *Mark L. Wolfenden, Muhammedin Deliorman and Recep Avci*
- 09.05 – 09.30 **Fuel Microbiology Test Methods – Can We Really Determine Precision and Bias? (USA)** - *Frederick J. Passman*
- 09.30 – 09.55 **A Novel Approach to Develop a Hydrocarbon-Based, ATP-Based Standard for Use in Rapid Assay Bioluminescence Testing (USA)** – *Edward English*
- 09.55 – 10.15 BREAK**
- 10.15 – 10.40 **Inter-Laboratory Studies of a Thixotropic Gel Culture Method for Field and Laboratory Testing for Microbiological Contamination of Fuels (UK)** – *Graham C. Hill, Derek J. Collins and Andrew Ryan*
- 10.40 – 11.05 **A Comparison of Three Different Actives as Fuel Microbicides in Regards of Their Bactericidal and Fungicidal Effect (GERMANY)** – *Wolfgang Siegert and Quyen Ziegann*
- 11.05 – 11.30 **Transcriptional Response of Bacteria to Jet Fuel (USA)** – *Oscar N. Ruiz -Presented by Steven Zabarnick*
- 11.30 – 13.00 LUNCH IN CASTELLANIA RESTAURANT Sponsored by AD Systems**

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**13.00 Session 10. ANALYTICAL METHODS & EFFECTS OF ADDITIVES**  
**Gary Bessee, Session Chair**

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- 13.05 – 13.30 **Emulsion Forming Tendencies of Corrosion Inhibitor Additives (USA)** – *Enrico A. Lodriqueza*
- 13.30 – 13.55 **Sulfur Deposit Formation During High Temperature Thermal Stressing of Jet Fuel (AUSTRALIA)** - *Paul Rawson and Sylvester Abanteriba*
- 13.55 – 14.20 **Field Evaluation of Particle Counting Technology in the US Military Fuel Supply Chain (USA)** - *Pamela M. Serino*
- 14.20 – 14.45 **JOHN BACHA AWARD: Towards Effective Fuel Dehydrating Icing Inhibitors (UK)** – *Sonia L. Repetto, Norman M. Ratcliffe, Ben De Lacy-Costello and Joseph K.-W. Lam*
- 14.45– 15.00 **BREAK**

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**15.00 - 15.30 PLENARY SESSION**  
**Anthony Kitson-Smith, IASH Chairman**

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- 19.00 – 21.00 CLOSING RECEPTION ON SHERATON'S 6<sup>TH</sup> FLOOR DECK**  
**Sponsored by Falex and Parker Hannifin**

**TECHNICAL POSTER SESSION & EXHIBITOR RECEPTION**  
**MONDAY EVENING, 7<sup>th</sup> OCTOBER 2013**  
**MARBLE & IMPERIAL FOYERS**  
**18.30 – 20.00**

**SPONSORED BY AIR BP**

**Steve Anderson, Session Chair**

**1. Chimec (ITALY)**

Tools and Strategies for the Optimization of H<sub>2</sub>S Scavenging in Residual Fuels: A Case History

- Stefano Tortora, Giacinto Grande, Alexander Orduz and Carlo Federico Lami

**2. Cranfield University (UK)**

Application of Microbial Metabolism Stoichiometry in Modeling Bio-Fouling in Gas Turbine Engines

- Tosin Onabanjo, Giuseppina di Lorenzo and Eric Goodger

**3. Defence Science & Technology Organisation (AUSTRALIA)**

Chromatographic Analyses of Alkyldihydrofuranones in Thermally Oxidised Algae-Derived Jet Fuel

- Renee L. Webster, David J. Evans, Blagoj S. Mitrevski and Philip J. Marriott

**4. D-2 Incorporated (USA)**

Ramp-Check, A Hand Held Instrument for Quantitative Assessment of Fuel Physical Properties in the Field – Alan J. Fougere

**5. Fuel Quality Services, Inc. (USA)**

High Molecular Weight Polysiobutylene Diesel Engine Combustion Technology Improvement

- David R. Forester

**6. Hawaii Natural Energy Institute (USA)**

Characteristics of Neat and Blended Hydrotreated Renewable Diesel Under Storage and Seawater Ballasting Conditions - Jinxia Fu, Petra Kamenikova, and Scott Turn

**7. Ipiranga Produtos de Petroleo (BRAZIL)**

Impact of Biodiesel on Filterability and Cold Flow Properties of Diesel BX – Roberta Miranda Teixeira, Laila de Castro Cortás, Sérgio Luiz C. Viscardi and Eduardo H.S. Cavalcanti

**8. Israel Institute for Biological Research (ISRAEL)**

The Influence of Surface Area/Volume Ratio on Long-Term Storage of Jet Fuel, A Field Study – Yalfal Siyum, Moshe Rabaev, Udi Akiva, Noam Brown, Eytan Geissmann, Repahel Fass, Joseph Geva, and Josefa Ben-Asher

**9. Israel Institute for Biological Research (ISRAEL)**

Long-Term Storage of B0-B20 Blends – A Chemical and a Microbiological Study

- Joseph Geva, Repahel Fass, Noam Brown, Ella Fastovksy, Eytan Geissmann, Udi Akiva, Moshe Rabaev, Yalfal Siyum, and Josefa Ben-Asher

**10. MOD/Chemical Testing Laboratory Ltd. (ISRAEL)**

Long-Term Storage of Gasoline with RON 96 - Ella Fastovsky, Eytan Geissmann, Noam Brown, Elad Ittach, Udi Akiva, Moshe Rabaev and Ariela Kfir



## TECHNICAL POSTERS - Continued

### 11. Montana State University (USA)

Byotrap as a Front-End for Biotech Sensor Platforms – Mark Wolfenden, *Muhammedin Deliorman and Recep Avci*

### 12. NCH Corporation (USA)

The Effect of Cold Soak Filtration of B100 on Subsequent Cold Flow Improver Response in B100/ULSD Fuel Blends – J.Andrew Waynick

### 13. Nova Research / US Naval Research Laboratory (USA)

Optimizing Fatty Acid Distributions from Ten *Shewanella* Spp. For Biofuel Production  
– *Emily R. Petersen, Lisa A Fitzgerald, Robert E. Morris, Kristina M. Myers, Jeffrey A. Cramer, Anthony P. Malanoski and Justin C. Biffinger*

### 14. Oil & Gas Institute (POLAND)

Organometallic Nanodispersions Used as a Combustion Modifier for Light Heating Oil and as a Soot Oxidation Catalyst on Diesel Particulate Filters – Michal Wojtasik and *Grazyna Zak*

### 15. Oil & Gas Institute (POLAND)

Diesel Fuel Detergent-Dispersant Additives for Modern Diesel Engines  
– Grazyna Zak, *Michal Wojtasik, Zbigniew Stepien and Leszek Ziemianski*

### 16. Sasol Technology Fuels Research / Sasol Advanced Fuels Laboratory, University of Cape Town (SO AFRICA)

Stability Comparison of GTL Diesel/FAME Blends and EN590 Diesel /FAME Blends  
– *Celeste Wilken, Stefan de Goede, Piet Roets, Chris Woolard and Adrian Velaers*  
Presented by Mariam Ajam

### 17. Texas A&M University at Qatar (QATAR)

Characterization of Synthetic Gas-to-Liquid Jet Fuel Blends: Hydrocarbon Chain Length Effect on Fuel Properties & Elastomer Compatibility - Elfatih E. Elmalik, *Samah Warrag, Moiz Hafis, Nimir O. Elbashir*

### 18. US Air Force Research Laboratory (USA)

Development of an Advanced Combustion Research Facility for Fuels, Emissions and Combustor Operability Studies - *Scott Stouffer, Ray Townsend, Mark Laber, Jerry Grieselhuber, Matthew J. DeWitt, Jacob Diemer, Harold Day, Richard Zierhing, Edwin Corporan and Dale Shouse*

### 19. US Air Force Research Laboratory (USA)

Investigation of Combustion and Emissions Performance of Alternative and Conventional Fuels at the Limits of the Jet Fuel Specification – *Edwin Corporan, Tim Edwards, Matthew J. DeWitt, Christopher Klingshirn, Richard Striebich, Linda Shafer and David Anneken*

## EXHIBITORS IMPERIAL FOYER

### **AD Systems**

- Presented by Didier Pigeon

### **Air BP**

- Presented by Steve Anderson and Alisdair Clark

### **Donaldson Company**

- Presented by Jim Peterson and Niko Verhaegen

### **ECHA Microbiology Ltd.**

- Presented by Graham Hill and Gareth Williams

### **EKO ABEE**

- Presented by Dinos Kakouris

### **Energy Institute**

- Presented by Martin Hunnybun and Joe Worthy

### **ExxonMobil Aviation**

- Presented by Dan Kadlecek, David Abdallah and Paul Wells

### **Falex Corporation**

- Presented by Mike Croudace

### **Fuel Quality Services, Inc.**

- Presented by Howard Chesneau, Debra Chesneau, Angie Coley-McClure, Ed English, Dave Forester, Rhonda Rande

### **GE Aviation**

- Presented by Stan Seto

### **INTERTEK**

- Presented by Craig Stone and Kurt Tyssen

### **KAM CONTROLS, INC.**

- Presented by Anjelica Grimaldo and Craig McWhorter

### **Parker Hannifin**

- Presented by Matt Fielder and Shaun Skilton

### **Schülke & Mayr GmbH**

- Presented by Quyen Ziegann

### **Seta Analytics**

- Presented by Martin Verity and Paul Spitteler

### **Southwest Research Institute**

- Presented by Gary Bessee and George Wilson