

11th International Conference on Stability, Handling and Use of Liquid Fuels 2009

**Prague, Czech Republic
18-22 October 2009**

Volume 1 of 3

ISBN: 978-1-61738-015-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2009) by IASH
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact IASH
at the address below.

IASH
3525 Piedmont Road
Five Piedmont Center #300
Atlanta, Georgia 30305

Phone: (770) 949-5861
Fax: (770) 949-6631

sbradicich@iash.net

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

SESSION 1: AVIATION FUELS

Session Chair: Edwin Corporan

Keynote Address: Alternative Fuels - Strategy and Results	1
<i>William E. Harrison III</i>	
Reduction of Trace Bio-Components in Jet	34
<i>Alisdair Q. Clark</i>	
Using the Cetane ID 510 for the Prediction of Derived Cetane Numbers of Aviation Turbine Fuels	81
<i>Scott K. Berkous</i>	
The Use of Jet Fuel in Diesel Powered Aircraft	111
<i>Roger G. Gaughan</i>	
Fuel Effects on Range Versus Payload for Modern Jet Aircraft	138
<i>Simon Blakey, C. W. Wilson, Mike Farmery, Robert Midgley</i>	

SESSION 2: BIOFUELS

Session Chair: Joanna Bauldrey

The Impact of FAME on the Distribution and Handling of Aviation Fuels	168
<i>Anthony Kitson-Smith, Vic Hughes</i>	
Understanding the Low Temperature Properties of Biodiesel	182
<i>Mark L. Brewer, Rick E. Malpas</i>	
Effect of FAME on Diesel Fuel Cold Flow Properties	205
<i>Vincent J. Denecker, Dave Coultas</i>	
Refinery Hydrotreated Diesel Production by Organic Oils Hydroconversion	228
<i>Nelmo F. Fernandes</i>	
Effect of FAME on Susceptibility of Merox-treated and Hyrdo-treated Jet A-1 to Microbiological Growth	262
<i>Graham C. Hill</i>	
Hydrotreated Renewable Jet Fuels	315
<i>Robert. J. Allen, John Graham, Linda Shafer, Zachary West</i>	
Applicability of Test Methods for Filter Plugging Tendency (Pumpability) for Evaluation of the Fossil Diesel and Biodiesel Fuels Blends	345
<i>M. Svoltjšak Jerman, S. Cerjan Stefanovic, M. Moder, A. Gregorc</i>	

SESSION 3: ADDITIVES & ADDITIVE RELATED PROPERTIES

Session Chair: Mike Sherratt

Keynote Address: Automotive Fuels in the Czech Republic – Production, Distribution, Quality and Quality Assessment Systems	373
<i>Vladimir Matejovsky</i>	
Determination of Minimum Required FSII Use and Procurement Limits for USAF Aircraft	427
<i>Matthew J. DeWitt, Steven Zabarnick, Steven Shaeffer, Theodore Williams, Zachary West, Linda Shafer, Richard Striebich, Scott Breitfield, Ryan Adams, Rhonda Cook, Charles L. Delaney, Donald Phelps</i>	
Hydrocarbon Liquid Fuels Thermal Stability, Antioxidant Influence and Behaviour	472
<i>Sterenn Gernigon, Mickaël Sicard, Frédéric Ser, Francois Bozon-Verduraz</i>	
Studies of the Compatibility of DIEGME and TRIEGME Icing Inhibitor Additives with Aircraft Tank Topcoat Material	510
<i>Steven Zabarnick, Ryan Adams, Zachary West, Matthew J. DeWitt, Linda Shafer, Richard Striebich, Charles L. Delaney, Donald Phelps</i>	
Shelf Life Improvement of C 18:2 Rich Biodiesel with Baynox Antioxidants – An Evaluation of Equivalent Efficacy According to the EU Draft Direc. 2008/0016	561
<i>Axel Ingendoh</i>	
High Temperature Stabilizers for Chinese RP-3 Jet Fuels at 700K (Paper Included in Proceedings; author unable to attend)	603
<i>Guozhu Liu, Yingjie Wang, Xiangwen Zhang, Guoqiang Xu, Zhentao Mi</i>	

SESSION 4: FUEL FILTRATION & CLEANLINESS

Session Chair: Vic Hughes

Filtration – An Attractive Route for Dirt Removal	608
<i>Alisdair Q. Clark</i>	
New Techniques in Particle Counting Help Analyzing High Performance Liquid Filters	659
<i>Michael Schumacher</i>	

VOLUME 2

Condition Monitoring Sensor Evaluation and Test Protocol Development	680
<i>Kathleen M. Kennedy, Paul P. Wells</i>	
Media Migration from Aviation Fuel Filter Monitors	717
<i>Paul P. Wells</i>	

SESSION 5: CHALLENGES IN FUEL DISTRIBUTION & STORAGE

Session Chair: Anthony Kitson-Smith

Logistical Challenges Associated with the Implementation of Alternative Fuels	765
<i>Pamela Serino</i>	
Utilizing Colorimeter/Haze Analyzers for Online Quality Control and Interface Detection with Specialty Fuels	789
<i>Kam Mohajer</i>	
Fit for Purpose Implications for Fuel Suppliers, Handlers and Users	848
<i>George R. Wilson III, Steven R. Westbrook</i>	
Fuel Quality Impacts on Tier 2-4 Off Road Diesel Engines Having Common Rail Fuel Systems (Paper Included in Proceedings; author unable to attend)	871
<i>Norman C. Blizard</i>	

SESSION 6: SYNTHETIC & ALTERNATIVE FUELS I

Session Chair: Stan Seto

Superior Stability Performance of Fischer-Tropsch (FT) Kerosene	883
<i>Mariam Ajam, Carl L. Viljoen</i>	
Recent Progress in Synthetic Fuels Development for Aviation	929
<i>Joanna Bauldrey, Paul F. Bogers, Tim A. Snijders, Joris A. Melkert</i>	
Evaluation of Synthetic Diesels for US Navy Shipboard Applications	949
<i>Philip H. Chang, Richard A. Kamin</i>	
Chemical, Thermal Stability, Seal Swell and Emissions Characteristics of Jet Fuels from Alternative Sources	973
<i>Edwin Corporan, James T. Edwards, Linda Shafer, Matthew J. DeWitt, Christopher Klingshirn, Steven Zabarnick, Zachary West, Richard Striebich, John Graham, Jim Klein</i>	

SESSION 7: SYNTHETIC & ALTERNATIVE FUELS II

Session Chair: Steve Anderson

Thermal Stability of Alternative Jet Fuels	1015
<i>Mickaël Sicard, Bruno Raepsaet, Frédéric Ser, Jacques Ancelle, Laurie Starck, Nicolas Jeuland</i>	
Potential of Alternative Fuels for Aircraft: Focus on Thermal and Oxidation Stability	1058
<i>Laurie Starck, Mickaël Sicard, Frédéric Ser, Nicolas Jeuland</i>	
Effect of Chemistry and Boiling-Point Distribution on the Properties and Characteristics of Synthetic Paraffinic Kerosene and Blends with Jet A	1102
<i>Clifford A. Moses, Petrus N.J. Roets, Carl L. Viljoen, George R. Wilson III</i>	

SESSION 8: MIDDLE DISTILLATE FUELS AND HEAVY OILS

Session Chair: Rick Kamin

Analysis of Issues Concerning the Production and Distribution of Low Sulphur Diesel – One Brazilian’s Refinery Experience	1163
<i>Nelmo F. Fernandes, Paulo Sergio de Souza Rego</i>	
Predicting the Impact of ULSD Stability on Modern Engines	1208
<i>Jack Burgazli, Stephen Cook</i>	
Thermal Stressing of Ultra-Low Sulfur Diesel and Low Sulfur F-76 Diesel Fuels	1257
<i>David J. Evans, Chris K.J. Hulston, Lance C. Kelly, Michael G. O’Connell, Paul Rawson, Christy-Anne Stansfield</i>	
Oxidative Desulphurization of Diesel Fuel	1288
<i>Michio Ikura</i>	
Asphaltenes Stability in Diluted Bitumen and Heavy Oils	1309
<i>Parviz M. Rahimi, Teclenariam Alem, Zhiming Fan, Irwin Wiehe</i>	

VOLUME 3

SESSION 9: MICROBIOLOGICAL CONTAMINATION & BIODEGRADATION

Session Chair: Graham Hill

Microbial Contamination in Diesel Fuel – Are New Problems Arising from Biodiesel Blends?	1353
<i>Wolfgang Siegert</i>	
Biocontamination Diversity in JP-8 and Jet-A	1413
<i>Marlin Vangsness, Susan Mueller, Loryn Bowen, Lisa Brown, Lori Balster, Jerrod McComb, Ellen Strobel</i>	
Effect of FSII on Microbial Contamination: DIEGME and TRIEGME	1437
<i>Lori Balster, Ellen Strobel, Marlin Vangsness, Loryn Bowen, Susan Mueller, Lisa Brown, Daniel Pike, Diana Dalrymple</i>	
Effect of Ethanol on Microbial Proliferation in Unleaded Gasoline Microcosms	1483
<i>Frederick J. Passman, Russel P. Lewis, James L. Palmer, Harlan Reid</i>	
Strategies for Resolving Problems Caused by Microbial Growth in Terminals and Retail Sites Handling Biodiesels	1525
<i>Edward C. Hill, Graham C. Hill</i>	
Important Technical Considerations When Contemplating Bioluminescence as an Analytical Tool for the Determination of Microbial Contamination of Petroleum Fuels and Other Matrices	1581
<i>Edward English, Charlotte Lindhardt</i>	
Impact of Biodeterioration of Diesel Fuel Systems	1642
<i>Nelly Klinkspon</i>	

SESSION 10: ANALYTICAL METHODOLOGY

Session Chair: Matt Fielder

A Rapid Laboratory Analytical Method for Detecting Low Levels of FAME in Jet Fuel: Method Development and Preliminary Industry Study Results	1697
<i>Scott J. Hartman, Oliver Seiler, Laura Owen, Paul Spitteler</i>	
The Development and Use of Flow Analysis by FTIR Spectroscopy in a Rapid Screening Test Method for Measuring Traces of Fatty Acid Methyl Esters in Aviation Turbine Fuels	1739
<i>Paul Spitteler, Rob Shaw, Mike Sherratt, Scott Hartman</i>	
Advances in Fluorescence Evaluation of Thermal Stability	1769
<i>Nigil Satish Jeyashekar, George R. Wilson III</i>	
Further Developments in the Measurement of Liquid Phase H₂S in Marine Fuels	1812
<i>Wanda Fabriek, Chris Roach, Mike Sherratt</i>	

POSTER SESSION

Session Chair: Pam Serino

The Development of a Portable Instrument and Automated Data Processing Software to Predict/Control Heavy Fuel Oils Stability/Compatibility Characteristics	1848
<i>Neil Ryding, Corina Sandu, Huzeifa Ismail, Sebastian Csutak</i>	

Coordinating Research Council (CRC) Overview and Program Summary	1849
<i>Brent K. Bailey, Jan R. Tucker, Joanna Bauldreay</i>	
FALEX 400, A New Jet Fuel Thermal Oxidation Tester, ASTM D 3241	1850
<i>Jim Hepp</i>	
An Evaluation of Biocides to Control Microbial Contamination of Hydrocarbon Fuels, Including Biofuels and Their Blends	1851
<i>Phil Keene</i>	
Could Jet Fuel Thermal Oxidative Degradation be at Least Partially Responsible for a Recent Crash? A Proposed Hypothesis & Experimental Plan to Test this Hypothesis	1852
<i>Bruce Beaver, Chris Kabana</i>	
Technical Issues to Consider When Evaluating Bioluminescence as an Analytical Tool.....	1873
<i>Edward English II, Charlotte Lindhardt</i>	
Diesel Fuel Contamination – Analysis of Some Unusual New Contaminants.....	1874
<i>Steven R. Westbrook</i>	
Enhanced Thermal Stability & Storage of High Viscosity Fuels and Oils Using Phyre’s Oil De-Oxygenation System (PODS)	1884
<i>Steven Walker, Wesley Jung, Stuart Robertson, Santosh Limaye</i>	
Measured Physical Chemical Properties of Model Components	1886
<i>Kavitha Moorthy, James E. Johnson, George R. Wilson III</i>	
Microbial Growth on Selected Aircraft Materials	1887
<i>Marlin Vangsness, Lisa Brown, Loryn Bowen, Susan Mueller, Lori Balster, Ellen Strobel</i>	
Variation of JP-8 Properties in CONUS and Potential Implications During Blending with Synthetic Paraffinic Kerosene (SPK).....	1888
<i>Erin Shafer, Richard Striebich, Matthew J. DeWitt, Timothy Edwards, William Harrison</i>	
Emissions Evaluations of Diesel Engines Operated with JP-8 and a 50/50 Fischer-Tropsch/JP-8 Blend	1913
<i>Edwin Corporan, Matthew J. DeWitt, Christopher Klingshirn</i>	
Next-Generation Fuel Quality Surveillance: The Navy Fuel Property Monitor	1934
<i>Mark H. Hammond, Robert E. Morris, Kevin Johnson, Jeffrey A. Cramer, Braden Giordano, Christopher Von Bergen, Susan L. Rose-Pehrsson</i>	
Assessment of Methods for the Minimisation of Interference from Suspended Water Droplets in Jet Fuel During Particle Counting	1954
<i>Vic Hughes, Paula Zard</i>	

PHOTOS FROM THE CONFERENCE

11th International Conference on Stability, Handling and Use of Liquid Fuels 2009.....	1955
--	-------------

N/A

Author Index