



INTERNATIONAL POWERTRAINS, FUELS AND LUBRICANTS MEETING

Gasoline Direct Injection Deposits Workshop
20 September 2018



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SPEAKERS

SMALL ENGINE TECHNOLOGY CONFERENCE

6-8 November 2018
Düsseldorf, Germany

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AGENDA



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CTO
Cambridge University



HONGMING XU
Professor
University of Birmingham

SESSION 1 - FORMATION MECHANISMS AND DEPOSIT EFFECTS

As an introduction this first session an overview of the development of direct injection gasoline engines and the concurrent development of deposit formation issues and then focuses on some of the latest research into deposit formation mechanisms.

- 08:30 - 09:00 Fuel Requirements and Deposit - Related Matters for DISI Engines
Gautam Kalghatgi (ret.), Principal Professional, Saudi Aramco
- 09:00 - 09:30 Impact of Injector Fouling on Combustion Performance in Gasoline Direct Injection Engines
Roger Cracknell, Technology Expert, Shell
- 09:30 - 10:00 Mechanism and Model of the Formation of Carbonaceous Injector Deposits in Internal Combustion Engines,
Radomir I. Slavchov, CTO, Cambridge University
- 10:00 - 10:30 **COFFEE BREAK**

SESSION 2 - DEPOSIT EFFECTS AND TEST METHOD DEVELOPMENT

The second session of the morning presents some recent research developments into the effects that fuel degradation and deposits can have on DIG engine performance.

- 10:30 - 11:00 Stochastic Preignition and Engine Deposits: Is there a Connection?
Elana Chapman, Fuels/ Biofuels Engineer, General Motors
- 11:00 - 11:30 Adverse Effects of Fuel Combustion/ Degradation
Ladislav Fuka, Division Manager, SGS Czech Republic
- 11:30 - 12:00 A Study of Particulate Emission Mechanism from Injector Tip Deposit of Direct-Injection Gasoline Engines
Yoshihiro Imaoka, Engineer, Nissan Motor Co Ltd
- 12:00 - 13:00 **LUNCH**

SESSION 3 - DEPOSIT EFFECTS AND TEST METHOD DEVELOPMENT

The first session of the afternoon looks at recent developments in test methods for generating DIGID and the effects that these deposits produce in engine performance.

- 13:00 - 13:30 Fast Method of Generating Deposits in GDI Engines and Analysis of the Impacts on Emissions
Javier Ariztegui, Manager Discipline Mobility, Repsol Petroleo S.A.
- 13:30 - 14:00 Development of A Gasoline Direct Injection Injector Deposit Test for the Top Tier™ Detergent Gasoline Program
Dean Schoppe, Senior Project Engr, Intertek
- 14:00 - 14:30 Test Method to Monitor Injector Deposit Buildup
Michael Schulz, ISP Salzbergen GmbH & Co. KG
- 14:30 - 15:00 **COFFEE BREAK**

SESSION 4 - ANALYSIS AND DIAGNOSTIC TECHNIQUES

The final session of the day highlights some of the sophisticated observational and analytical techniques that are being employed to understand the nature of DIGID and their formation mechanisms.

- 15:00 - 15:30 The Influence of Engine Test Conditions on Nozzle Tip Coking and Advanced Diagnostic Techniques for its Investigation
Gavin Dober, Professor, University of Southampton
- 15:30 - 16:00 Understanding Fuel Additive Performance through the Use of Modern Chromatography and Mass Spectrometry
G. John Langley, Professor, University of Southampton
- 16:00 - 16:30 Impact of Injector Deposits on GDI Engine Performance and Emission
Hongming Xu, Professor, University of Birmingham
- 16:30 - 17:30 **RECEPTION**

WE ARE PUSHING FUEL TECHNOLOGY BEYOND ALL LIMITS

From where we stand you can see the future of fuel additive technology. As the world's leading manufacturer of treatments for petroleum-based fuels and biofuels it's our job to bring innovation to the market and push the boundaries of what's possible.

We take that responsibility very seriously.

That's why Innospec Fuel Specialties is the only company out there totally focused on fuel. By continually investing in research and development we make sure our customers get tomorrow's technology today. With our vision you get cutting edge solutions, unparalleled technical expertise, first class service and true global coverage.

Let us see what the future holds for your business.



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