



Small Engine Technology Conference

Small Engine Technology Conference

September 9-11, 2008
The Midwest Airlines Center
Milwaukee, Wisconsin USA

EVENT GUIDE

Includes Final Program and
Exhibit Directory



SAE International™



www.sae.org/setc

PAVE-Seal® Wire Harnesses Are Ideal For Low Emission Fuel Tanks or Transmissions

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Congress and Exhibition



October 7-9, 2008

Donald E. Stephens Convention Center
Rosemont, Illinois USA

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SAE International[™]

Monday 8 September	Tuesday 9 September	Wednesday 10 September	Thursday 11 September
Tour Registration Hours 07.00 – 09.30 Hyatt 3rd Street Entrance	Registration Hours 07.00 – 17.00	Registration Hours 08.00 – 17.00	Registration Hours 08.00 – 12.00
Technical Tour of BRP US Inc. and Synerject 08.00 – 15.30 or 09.30 – 17.00	Opening Ceremony 08.00 – 09.30	Technical Sessions 09.00 – 11.30	Technical Sessions 09.00 – 11.00
	Welcoming remarks from JSAE and SAE International		
	Keynote Presentations		Closing Ceremony 11.00 – 11.30
	Networking Break 09.30 – 10.00		
	Technical Sessions 10.00 – 11.30	Lunch on Exhibit Floor 11.30 – 13.30	Lunch on Exhibit Floor 11.30 – 13.00
	Lunch on Exhibit Floor 11.30 – 13.30	Technical Sessions 13.30 – 16.30	Technical Sessions 16.30 – 18.30
Technical Sessions 13.30 – 16.30	Welcome Reception in Exhibit Hall 16.30 – 18.00 Sponsored by: 	Plenary Session 16.30 – 18.30	
		Banquet at Mader's German Restaurant 19.00 – 21.00	

EXHIBIT HOURS:	
Tuesday 9 September	11.00 - 13.30 16.00 - 18.00
Wednesday 10 September	11.00 - 13.30
Thursday 11 September	11.00 - 13:00

Since the first event in 1989, the Small Engine Technology Conference (SETC) continues to be the international technology conference for small engines and related products. SETC is jointly sponsored each year by the Society of Automotive Engineers of Japan, Inc. (JSAE) and SAE International.

SETC History

Conference	City	Country
SETC 1989	Milwaukee	USA
SETC 1991	Yokohama & Hamamatsu	Japan
SETC 1993	Pisa	Italy
SETC 1995	Milwaukee	USA
SETC 1997	Yokohama	Japan
SETC 1999	Madison	USA
SETC 2001	Pisa	Italy
SETC 2002	Kyoto	Japan
SETC 2003	Madison	USA
SETC 2004	Graz	Austria
SETC 2005	Bangkok	Thailand
SETC 2006	San Antonio	USA
SETC 2007	Niigata	Japan
SETC 2008	Milwaukee	USA
SETC 2009	Penang	Malaysia



FISITA Introduction

FISITA is an independent world body representing over 147,000 automotive engineers belonging to national automotive societies in 38 countries. FISITA was founded in 1948 to provide a global forum for the exchange of technical knowledge on every aspect of vehicle design and manufacture. FISITA brings together engineers and decision-makers from industry, academia and government to work towards the improvement of transportation systems, the conservation of energy and the protection of the environment.

www.fisita.com

SETC Technical Committee



2008 SETC Technical Committee Chair – SAE International

Robert Fleck

Head of School
Mechanical & Aerospace Engineering
Queen's University of Belfast

Professor Fleck graduated from QUB with Bachelor's degree in 1973 and awarded Doctoral degree in 1976 for research work on Wankel rotary engines. He joined Mercury Marine, USA, in 1977 working on design of new small outboards. Professor Fleck returned to QUB in 1982 to concentrate on two-stroke engine research where he is responsible for development of Computer Aided Design tools for engine optimization. Professor Fleck participated in the extensive development of high performance two-stroke engines which led to the operation of a grand prix motor-cycle road racing team from 1993 through 2001.

Professor Fleck has author/co-author of over 100 technical articles on engine research and was awarded a Doctor of Science degree in 2006, in recognition of career contribution to engine research. He is also a member of Editorial Board, International Journal of Engine Research.



2008 SETC Technical Committee Chair – JSAE

Kazuyuki Shiomi

Chief Engineer
Honda R&D Co., Ltd.
Power Products R&D Center

Mr. Kazuyuki Shiomi is a Chief Engineer at Honda R&D Co., Ltd.'s Power Products R&D Center.

Mr. Shiomi began his professional career at Yamaha Motor Co., Ltd. in 1979. In 1985 he joined Honda R&D. Since then, he has been involved in the research and development of engines and power products using CAE technologies and testing. He has been actively engaged in the development of Honda's power products such as engines, generators, MCHP systems, snow blowers, lawn and garden equipment, and outboard motors. In 1996, he became a Chief Engineer.

Technical Committee Members:

SAE Members

James Carroll, Southwest Research Institute
Roy Douglas, Queen's University of Belfast
Robert Fleck, Queen's University of Belfast
Robert Kee, Queen's University of Belfast
Kenneth Kicinski, Harley – Davidson Motor Co.
Franz Laimboeck, Southwest Research Institute
Nagesh Mavinahally, Cummins Inc.
Daniel Nehmer, BRP US Inc.
Paul Richards, Innospec Fuel Specialties
Sebastian Strauss, STIHL Inc
Andrew Traxel, Briggs & Stratton Daihatsu LLC
Jeff White, Southwest Research Institute

JSAE Members

Kazuyuki Shiomi, Honda R&D Co., Ltd.
Minoru Iida, Yamaha Motor Co., Ltd.
Ryozo Okita, Japan Boating Industry Association Yamaha Marine Co., Ltd.
Tadao Okazaki, Japan Land Engine Manufacturers Association Kubota Corporation
Toshimi Kobayashi, Kawasaki Heavy Industries, Ltd.
Tomoo Shiozaki, Honda R&D Co., Ltd.
Hiroimi Deguchi, Suzuki Motor Corporation
Takashi Mitome, Suzuki Motor Corporation
Koji Yoshida, Nihon University

SETC General Committee

2008 SETC General Committee Chair – SAE International

Jeff White

Director, Emissions Research and Development
Office of Automotive Engineering
Southwest Research Institute

2008 SETC General Committee Chair – JSAE

Shunichi Kometani

Yamaha Motor Co., Ltd

General Committee Members:

SAE Members

James Carroll, Southwest Research Institute
Roy Douglas, Queen's University of Belfast
Robert Fleck, Queen's University of Belfast
Jaal Ghandhi, University of Wisconsin, Madison
Robert Kee, Queen's University of Belfast
Franz Laimboeck, Southwest Research Institute

Nagesh Mavinahally, Cummins Inc
Daniel Nehmer, BRP US Inc.
Paul Richards, Innospec Fuel Specialties
Sebastian Strass, STIHL
Anthony Szczotka, Robert Bosch LLC
Andrew Traxel, Briggs & Stratton Daihatsu LLC
Jeff White, Southwest Research Institute

JSAE Members

Shunichi Kometani, Yamaha Motor Co., Ltd.
Hiroshi Iio, Suzuki Motor Corporation
Ryozo Okita, Japan Boating Industry Association Yamaha Marine Co., Ltd.
Tadao Okazaki, Japan Land Engine Manufacturers Association Kubota Corporation
Yuji Tsushima, Honda R&D Co., Ltd.
Akio Miguchi, Kawasaki Heavy Industries, Ltd.

Hours of Operation

Tour Registration

Hyatt 3rd Street Entrance

Monday 8 September

07.00 – 09.30

Conference Registration

Midwest Airlines Center

Upper Level

Tuesday 9 September

07.00 – 17.00

Wednesday 10 September

08.00 – 17.00

Thursday 11 September

08.00 – 12.00

Registration Fee's:

SAE Member \$595

Non-Member \$895

Participant \$495

(includes Committee Members,
Primary author, panelists, session
organizers and session chairs)

SAE Student Member FREE

Non-Member Student \$25

Exhibitor FREE

(limit 2 per booth)

Exhibit Only \$95

Technical Program

Midwest Airlines Center

Mezzanine Level

Tuesday 9 September

08.00 – 16.30

Wednesday 10 September

09.00 – 18.30

Thursday 11 September

09.00 – 11.00

Exhibition

Midwest Airlines Center

Tuesday 9 September

11.00 – 13.30

16.00 – 18.00

Wednesday 10 September

11.00 – 13.30

Thursday 11 September

11.00 – 13.00

Event Operations Office

201C

Presentation Ready Room

201D

Daily

07.00 – 17.00

Photography, audio and video recordings are NOT permitted in the sessions or on the exhibit floor. Remarks made in any session or featured presentations, by participants or members of the audience cannot be quoted or attributed to the individual or their company.

As a courtesy to presenters and audience members, please turn off cell phones and pagers before entering session rooms.

Emergency Hotline

1-800-581-9295

In the event of an emergency or a major disruption to the schedule of events at the Small Engine Technology Conference, attendees and exhibitors may call this number to receive further information about the resumption of this event. Updates will also be provided via the SAE website at www.sae.org.

Location

Midwest Airlines Center

400 West Wisconsin Avenue

Milwaukee, Wisconsin 53203

Phone: 414-908-6000

Business Center Fax: 414-908-6186

Housing Changes?

Should you require assistance with your housing reservation, please contact The Housing Connection at 801.801.4722.

SAE International

World Headquarters

400 Commonwealth Drive

Warrendale, PA 15096-0001 USA

Phone: 724.776.4841

Fax: 724.776.0790

Customer Service

Toll-free US & Canada: 877.606.7323

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www.sae.org

customerservice@sae.org

Automotive Headquarters

755 W. Big Beaver Rd.

Troy, MI 48084

Phone: 248.273.2455

Fax: 248.273.2494

SETC Organizing Committee

On-site Services

Business Center

2nd floor near Room 201

Monday–Friday

8.00–17.00

Parking

400 W. Wisconsin Ave.

414-908-6167

\$15.00 daily

\$24.00 overnight

Amenities and Restaurants located in the Hyatt Regency Milwaukee

Hotel amenities include a rooftop revolving restaurant Polaris, Pilsner Palace Restaurant, Knuckles Sports Bar, Sarah's Pantry, complimentary fitness center and a business center. The Marquette Recreation Center is located 6 blocks from the hotel and has the following amenities: pool, tennis courts, and golf course. Guests can obtain a day pass from the recreation center for \$7.50.

Things to do in Milwaukee

- Harley Davidson's International Headquarters
- Marquette University
- Lake Michigan
- Milwaukee Breweries
- The Shops of Grand Avenue
- Marcus Center for Performing Arts
- Bradley Center

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SAE International™

Technical Tour BRP US Inc and Synerjet*

MONDAY

**Pre-Registration Required*

***No cameras or cell phones will be permitted.*

One tour...two locations!

You get a two-for-one deal when you participate in this technical tour, visiting both BRP US Inc. and Synerjet. Choose either Tour 1 or Tour 2 hours (hours below).

Registration – Hyatt 3rd Street Entrance

07.00 – 09.30

Tours leave at 08.00 and 09.30 from the Hyatt 3rd Street Entrance

Tour fee is \$50 per person. Please visit registration desk for availability.

Tour 1

Time	Activity
07.00 – 09.30	Registration Hyatt 3rd Street Entrance
08.00 – 09.00	Travel to Synerjet
09.00 – 11.00	Tour at Synerjet
11.00 – 12.00	Travel to BRP
12.00 – 13.00	Lunch at BRP
13.00 – 15.00	Tour at BRP
15.00 – 15:30	Travel from BRP to Hotel

Tour 2

Time	Activity
07.00 – 09.30	Registration Hyatt 3rd Street Entrance
09.30 – 10.00	Travel to BRP
10.00 – 12.00	Tour at BRP
12.00 – 13.00	Lunch at BRP
13.00 – 14.00	Travel to Synerjet
14.00 – 16:00	Tour at Synerjet
16.00 – 17.00	Travel from Synerjet to Hotel

TUESDAY **Opening Ceremony and Keynote Address**

201 A & B
08.00 – 09.30

Introductory Remarks:

Jeff White

SAE International General Committee Chair

Welcoming Remarks - JSAE



Yoji Onishi

Research & Development Division
Consumer Products & Machinery Company
Kawasaki Heavy Industries, Ltd

Yoji Onishi is currently a general manager overseeing the development/design of consumer products, including motorcycles, all-terrain vehicles, multi-purpose utility vehicles, and jet skis.

After completing the master course in mechanical engineering at Osaka University in 1979, he started working as a mechanical engineer at Kawasaki Heavy Industries.

After engaging in body design of racing motorcycles for two years, he has been working to date in the development/design of lightweight, high-performance motorcycle engines for mass-produced sport models, for over 20 years.

As a member of the board of directors at the Society of Automotive Engineers of Japan (JSAE), he devotes himself to revitalizing events by actively giving technical support and advice to the universities and students participating in Formula-SAE.

Welcoming Remarks - SAE & FISITA

TUESDAY



Thomas W. Ryan III
2008 SAE President

Dr. Ryan is a mechanical engineer who began his career at Southwest Research Institute (SwRI) in 1979 after spending two years as an assistant professor in the Mechanical Engineering Department of the Pennsylvania State University. Over the past 30 years Dr. Ryan has specialized in the areas of engine, fuels and combustion technology. He has performed both basic and applied combustion research in experiments involving very basic combustion processes and sophisticated diagnostics to actual internal

combustion engine systems. Much of his work has involved the application of the appropriate diagnostic techniques in experiments involving both real and simulated combustion environments.

Over the course of his career at Southwest Research Institute, Dr. Ryan has managed projects for almost all of the engine OEM's, fuels and lubricants companies, and agencies of the US government. As Institute Engineer, Dr. Ryan has assumed an Institute wide responsibility in the areas of engines, fuels and combustion research. He is currently managing one Industry consortium in this area and he is responsible for management of a consulting service operated by SwRI for engine and component manufacturers from around the world.

His involvement in SAE began as a student member during his graduate studies at Penn State University, presenting his first paper at the 1974 Congress. He has over 100 publications in the areas of engine, fuels and combustion research. He has been very active at both the local and national levels of SAE. He was involved in revitalizing the South Texas Section, serving as the local chairman of the Fall Fuels and Lubricants meetings in 1996 and 2001, and as chairman of the Section from 2001-2002. He has also been involved in the Fuels and Lubricant Activity, serving as Vice Chair for Combustion, and as Chair of the Activity from 1998-2000. He has served on the Land and Sea Group and is the recent past Chair. He is currently a Director on the SAE Board. He has served on the Membership Benefits Committee, the Strategic Planning Committee of the EMB, the Horning Award Committee, the Fellows Committee, and the Springer Award Committee.

Dr. Ryan has served on the Board and as president of his homeowners association, and on the school board of his church. He also has several interests, including woodworking, golf, racket ball, water skiing, and motorcycling.

TUESDAY

Keynote Address

201 A & B
08.00 - 09.30



Yasuhiro Shimizu

Managing Director

Chief Operating Officer, Power Product R&D Center
Honda R&D Co., LTD.

Mr. Yasuhiro Shimizu is a Managing Director of Honda R&D Co., Ltd. and the Chief Operating Officer of Honda's Power Products R&D Center, where he has the responsibility of overseeing Honda Power Product's global R&D operations.

He began his professional career at Honda R&D in 1978 and has worked continuously since then for the Power Products R&D Center. In 1992, he became Chief Engineer; in 2003 he became Senior Chief Engineer. In those capacities, he designed a wide variety of innovative engines and unique engine technologies. As a project leader, he has developed many general purpose engines such as 4-stroke OHV and OHC gasoline engines and diesel engines.

For the past 10 years, he has managed the development of all of Honda's power products such as engines, generators, home power generation, snow throwers, lawn and garden equipment, water pumps, and outboard motors. In 2005, he became Managing Director of Honda R&D Co., Ltd. He has gained an excellent reputation for forecasting future engine technology trends based on his very broad research and development experience and backgrounds.

Mr. Yasuhiro Shimizu graduated from Shizuoka University in 1978 with a B.S. in Mechanical Engineering and holds more than 75 patents for engine technologies. His current concern and focus is balancing the performance, ease and comfort of use, and environmental impact of products by the application of new environmentally friendly technologies.



Roch Lambert

General Manager, BRP Marine Engines

Roch Lambert is the Vice-President and General Manager for the Outboard Engines division of BRP US Inc., based in Sturtevant, Wisconsin. He is also in charge of manufacturing operations at the Sturtevant, Spruce Pine and Dalang manufacturing sites.

Lambert joined Bombardier in 1994 in a plant engineering management position. Afterward, he held different operations management positions within Bombardier until 1997 when he became Vice President

of Production for the Sea-Doo® personal watercraft and Ski-Doo® snowmobiles operation in Valcourt, Quebec. Later that year, he took over the operations of the boat division until becoming Vice President and General Manager of the entire division in 1998.

Lambert was involved in the acquisition of OMC assets and became Vice President and General Manager of the newly formed Boats and Outboard Engines Division in spring of 2001. Prior to Bombardier, Lambert worked in engineering and then management of operations and general management for a Canadian company.

Lambert graduated from Polytechnic School of Montreal with a Mechanical Engineering degree in 1986 and also holds a graduate business degree from Laval University in Quebec.

TUESDAY

Networking Lunch in the Exhibit Hall

Exhibit Hall

11.30 – 13.30

Welcome Reception

Exhibit Hall

16.30 – 18.00

**Tuesday Welcome Reception
Sponsored by**

Lubrizol

WEDNESDAY

Networking Lunch in the Exhibit Hall

Exhibit Hall
11.30 – 13.30

Plenary Session

Energy Efficiencies, Alternative Fuels, and Emission Controls

201 A & B
16.30 – 18.30

Moderator:

Jaal Ghandhi, Professor of Mechanical Engineering, University of Wisconsin – Madison

Jeff Coughlin, Director Powertrain Design Engineering, Harley-Davidson

David Foulkes, Vice President R&D, Mercury Marine

Brian West, Development Engineer, Fuel Combustion & Energy Technology, Oak Ridge National Labs

SETC 2008 Banquet

Madre's German Restaurant
19.00 – 21.00

Mader's German Restaurant

1041 North Third Street
Milwaukee, WI 53203



Buses depart from the Hyatt 3rd Street Entrance starting at 18.30

**Tickets are \$75.00 per person and include meal, drinks and shuttle. Please visit registration desk for availability.



Closing Ceremony

201 A & B
11.00 – 11.30

Introductory Remarks:

Jeff White, SAE International General Committee Chair

Best Paper” and “Best Presentation” Awards

Robert Fleck, SAE International Technical Committee Chair

SETC 2009 Announcement

Kazuyuki Shiomi, JSAE Technical Committee Chair

Shed Mohamad Aidid, Chair of SETC2009 Organizing Committee of Malaysia

Sakae Mizumura, Chair of SETC2009 Organizing Committee of Japan (JSAE)

Networking Lunch in the Exhibit Hall

Exhibit Hall
11.30 – 13.00

THURSDAY

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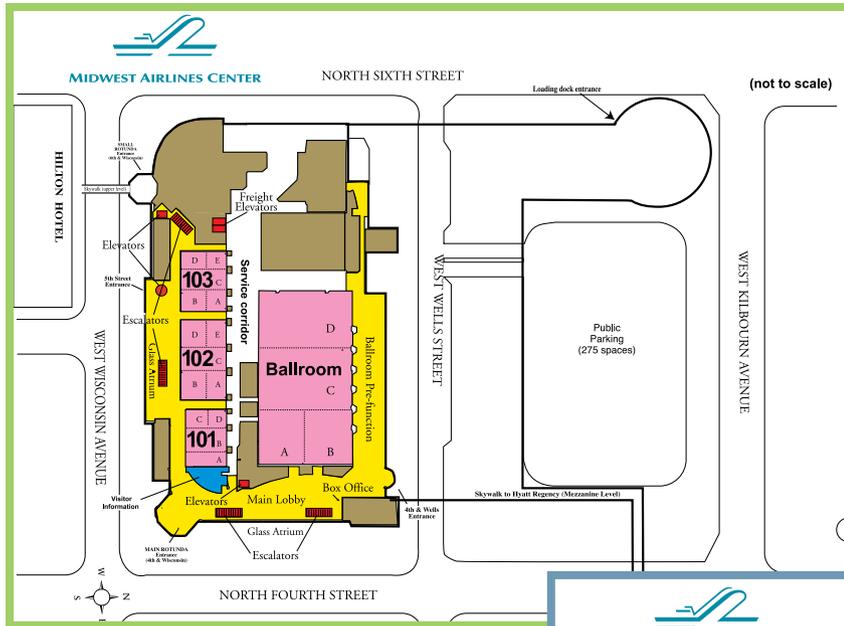
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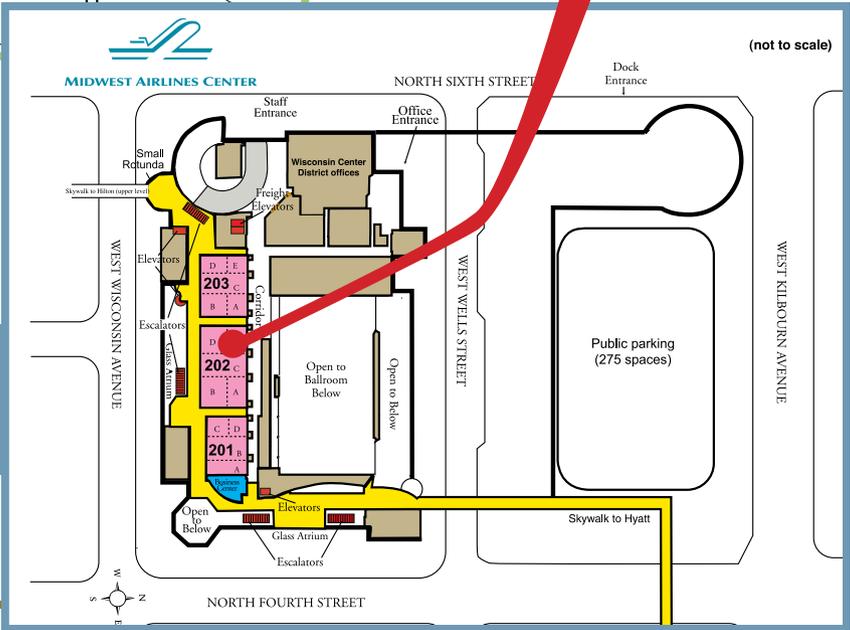
FLOORPLAN CONFERENCE CENTER FLOOR PLAN



Street Level

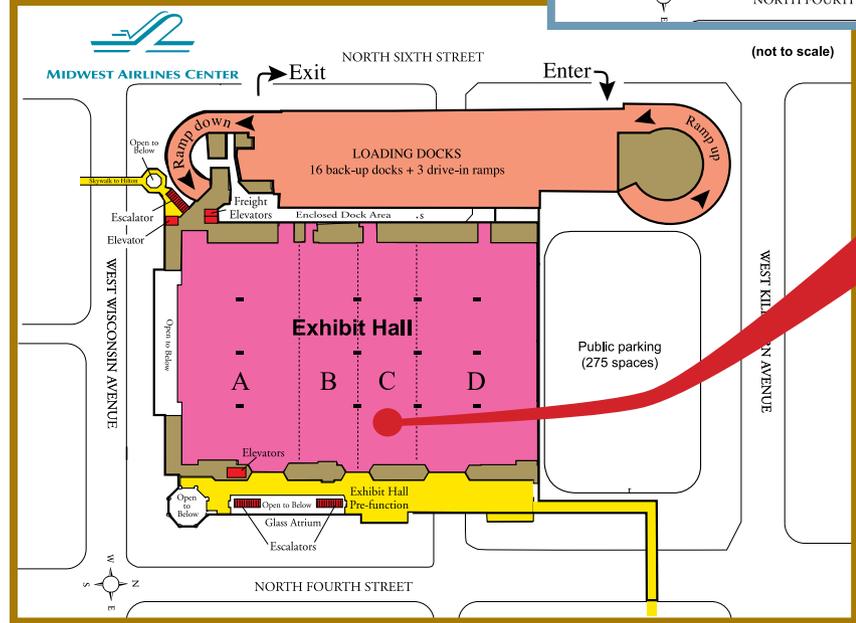
Technical Sessions

Mezzanine Level



Registration and Exhibit area

Upper Level



SESSIONS AT-A-GLANCE

	AM	PM	Room No.	Page No.
Tuesday 9 September				
Emissions (1 of 2) (SETC10)	✓	-	202D	18
Emissions (2 of 2) (SETC10)	-	✓	202D	19
Engine Technology (1 of 2) (SETC1)	✓	-	202B	18
Engine Technology (2 of 2) (SETC1)	-	✓	202B	19
Opening Ceremony and Keynote Address (SETC18)	✓	-	201A&B	18
Two-Stroke Engine (1 of 2) (SETC3)	✓	-	202A	18
Two-Stroke Engine (2 of 2) (SETC3)	-	✓	202A	20
Vehicle Dynamics/Safety (1 of 2) (SETC15)	✓	-	202E	19
Vehicle Dynamics/Safety (2 of 2) (SETC15)	-	✓	202E	20
Wednesday 10 September				
Alternative Fuel's (1 of 2) (SETC12)	✓	-	202E	21
Alternative Fuel's (2 of 2) (SETC12)	-	✓	202E	22
Collegiate Events (SETC13)	✓	-	202D	21
Design and Simulation (1 of 2) (SETC7)	✓	-	202B	21
Design and Simulation (2 of 2) (SETC7)	-	✓	202B	22
Engine Component (SETC2)	-	✓	202A	23
Fuel Supply Systems (SETC6)	-	✓	202D	23
Lubricants (SETC9)	✓	-	202A	22
Plenary Session (SETC PLENARY)	-	✓	201A&B	23
Thursday 11 September				
Advanced Combustion (SETC14)	✓	-	202D	24
Closing Ceremony (SETC19)	✓	-	201A&B	25
Control Systems (SETC16)	✓	-	202B	24
Hybrid, Electric Drive & Fuel Cell (SETC17)	✓	-	202A	24
Materials (SETC11)	✓	-	202E	24
NVH Technology (SETC5)	✓	-	202A	25

Opening Ceremony and Keynote Address (SETC18)

08.00

Room - 201A&B

Moderators:

Jeff J. White, Southwest Research Institute

Welcoming Remarks:

Yoji Onishi, Kawasaki Heavy Industries, Ltd.

Thomas W. Ryan, Southwest Research Institute

Welcoming Remarks:

Yasuhiro Shimizu, Honda R&D Co., Ltd.

Roch Lambert, BRP US Inc.

Emissions (1 of 2) (SETC10)

10.00

Room - 202D

Emission regulations are continuing to drive development of new technology for small engines. This session will consider advances in catalyst and other emission reduction technologies and their application to small engines.

Organizers:

Hiromi Deguchi, Suzuki Motor Corp.; Jeff J. White, Southwest Research Institute

Chairpersons:

Hiromi Deguchi, Suzuki Motor Corp.; Jeff J. White, Southwest Research Institute

10.00

(2008-32-0004/20084704)

Ring Pack Crevices and Crankcase Pressure Effects on the Hydrocarbon Emissions from an Air-Cooled Utility Engine

Victor Salazar, Jaal Ghandhi, Univ. of Wisconsin Madison

(2008-32-0011/20084711)

Reduction of Nano-particle Emissions from Gasoline 2-Stroke Engines Using CLM - Ceramic Exhaust Filters (Written Only -- No Oral Presentation)

Noah Loren, Robert Miller, GEO2 Technologies

Engine Technology (1 of 2) (SETC1)

10.00

Room - 202B

The primary focus of the session is to encompass technical papers in the areas of engine technologies including but not limited to; the alternate concepts, design and performance of components, engine management systems, manufacturing processes, etc. that contribute to the improvement in over all design and performance of the engine.

Organizers:

Nagesh S. Mavinahally, Cummins Inc.; Tomoo Shiozaki, Honda R&D Co., Ltd

Chairpersons:

Nagesh S. Mavinahally, Techtronic Industries NA Inc.; Kazuyuki Shiomi, Honda R&D Co., Ltd.

10.00

(2008-32-0003/20084703)

A Novel Model for Computing the Trapping Efficiency and Residual Gas Fraction Validated with an Innovative Technique for Measuring the Trapping Efficiency

Vittorio Manente, Per Tunestal, Bengt Johansson, Lund Institute of Technology

10.30

(2008-32-0010/20084710)

Application of Chaos Theory to Engine System

Kazuhiro Matsumoto, Hans Diebner, INM; Ichiro Tsuda, Hokkaido Univ.; Yukiharu Hosoi, Yamaha Motor Co., Ltd.

Two-Stroke Engine (1 of 2) (SETC3)

10.00

Room - 202A

Emissions regulations and fuel economy improvements are continuing to drive development of new technology for small engines. This session will consider advances in fuel injection, fuels, modeling, and controls as applied to 2 stroke engines to improve emissions & fuel economy.

Organizers:

Yukio Matsushita, Yamaha Marine Co., Ltd.; Daniel Nehmer, BRP US Inc.

Chairpersons:

Yukio Matsushita, Yamaha Marine Co., Ltd.; Daniel Nehmer, Bombardier Recreational Products NA(BRP)

10.00

(2008-32-0030/20084730)

Comparison of Homogeneous, Stratified and High-Squish Stratified Combustion in a Direct-Injected Two-Stroke Engine

Justin Johnson, BRP US Inc.; Karen Den Braven, Univ. of Idaho

10.30

(2008-32-0037/20084737)

Ion-Current Measurement in Small Two-Stroke SI Engines

Kai W. Beck, Soeren H. Bernhardt, Ulrich Spicher, Universität Karlsruhe (TH); Tim Gegg, Armin Koelmel, Andreas Paa, ANDREAS STIHL AG; Tycho Weissgerber, Marc Westecker, Pulse GmbH

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

11.00 (2008-32-0042/20084742)

CFD Simulation of a Real World High-Performance Two Stroke Engine with Use of a Multidimensional Coupling Methodology

Dalibor Jajcevic, Raimund Almbauer, Stephan Schmidt, Graz Univ. of Technology; Karl Glinsner, BRP-Rotax GmbH & Co. KG

Vehicle Dynamics/Safety (1 of 2) (SETC15)

10.00

Room - 202E

This session will focus on the application of technology to improve the stability, handling, ride and comfort of two- and three-wheeled vehicles.

Organizers:

Masayuki Baba, Honda R&D Co., Ltd.; Deane B. Jaeger, Harley-Davidson Motor Co.

Chairpersons:

Masayuki Baba, Honda R&D Co., Ltd.; Deane B. Jaeger, Harley-Davidson Motor Co.

10.00 (2008-32-0061/20084761)

Comparison Between Experimental and Numerical Handling Tests for a Three-Wheeled Motorcycle

Francesco Frendo, R. Bartolozzi, Massimo Guiggiani, Univ. of Pisa; O. Di Tanna, Piaggio & C. S.p.A

10.30 (2008-32-0062/20084762)

Stability Analysis of a Three-Wheeled Motorcycle

Antonio Sponziello, Francesco Frendo, Massimo Guiggiani, Univ. of Pisa

11.00 (2008-32-0070/20084770)

Effect of Seat Support Structure Stiffness on Handling of Motorcycles

Sai Praveen Velagapudi, Dheeraj Sharma, R. Anand, Karanam Venkata Mangaraju, R. Babu, TVS Motor Co., Ltd.

Emissions (2 of 2) (SETC10)

13.30

Room - 202D

Emission's regulations are continuing to drive development of new technology for small engines. This session will consider advances in catalyst and other emission's reduction technologies and their application to small engines.

Organizers:

Hiroimi Deguchi, Suzuki Motor Corp.; Jeff J. White, Southwest Research Institute

13.30 (2008-32-0013/20084713)

Development of Paper Exhaust Catalyst Material for Emission Control in Small Internal Combustion Engines

Boateng Onwona-Agyeman, Ryo Suzuki, Hiroaki Yano, Shintarou Yagi, Akihiko Tomoda, FCC CO., Ltd.

14.00 (2008-32-0014/20084714)

Discussion of the Role of Fuel-Oil Diffusion in the Hydrocarbon Emissions from a Small Engine

Victor Salazar, Jaal Ghandhi, Univ. of Wisconsin Madison

14.30 (2008-32-0017/20084717)

Meeting Low Evaporative Fuel Emission Requirements Using Two Layer Technology

Maria Gallahue-Worl, Solvay Advanced Polymers

Engine Technology (2 of 2) (SETC1)

13.30

Room - 202B

The primary focus of the session is to encompass technical papers in the areas of engine technologies including but not limited to the alternate concepts, design and performance of components, engine management systems, manufacturing processes, etc. that contribute to the improvement in overall design and performance of the engine.

Organizers:

Nagesh S. Mavinahally, Cummins Inc; Tomoo Shiozaki, Honda R&D

Chairpersons:

Kazuyuki Shiomi, Honda R&D Co., Ltd.; Nagesh S. Mavinahally, Cummins Inc

13.30 (2008-32-0012/20084712)

Research on Extended Expansion General Purpose Engine - Characteristic of Vibration

Gaku Naoe, Sei Watanabe, Honda R&D Co., Ltd.

14.00 (2008-32-0015/20084715)

Development of Accelerator-by-wire System for Variable Valve Lift and Timing Mechanism with Three Dimensional Cam

Yousuke Shimozuma, Shinsaku Sakoh, Suzuki Motor Corp.

14.30 (2008-32-0016/20084716)

Development of a Motorcycle Engine with a Three-dimensional Cam for Continuous Variable Valve Lift and Timing Mechanism

Isato Taki, Yamauchi Kosaku, Takahashi Kazutoshi, Nakama Kenjiro, Nakamura Muneaki, Suzuki Motor Corp.

15.00 (2008-32-0018/20084718)

Effects on Fuel Economy and NOx Emission Using Stratified Charge and EGR System for a Single Cylinder Motorcycle Engine

Kouji Takasu, Hisatoshi Kinoshita, Ryusuke Kato, Yamaha Motor Co., Ltd.

Two-Stroke Engine (2 of 2) (SETC3)

13.30

Room - 202A

Emissions regulations and fuel economy improvements are continuing to drive development of new technology for small engines. This session will consider advances in fuel injection, fuels, modeling, and controls as applied to 2 stroke engines to improve emissions, fuel economy.

Organizers:

Yukio Matsushita, Yamaha Marine Co., Ltd.; Daniel Nehmer, BRP US, Inc.

Chairpersons:

Yukio Matsushita, Yamaha Marine Co., Ltd.; Daniel Nehmer, Bombardier Recreational Products NA(BRP)

13.30 (2008-32-0045/20084745)

Performance Characterization of a Direct Injection LPG Fuelled Two-Stroke Motorcycle Engine

Yew Heng Teoh, Horizon Walker Gitano, Khairil Faizi Mustafa, Univ. Science Malaysia

14.00 (2008-32-0059/20084759)

Application of Low Pressure Direct Injection and Semi-Direct Injection to a Small Capacity Two-Stroke Engine

Franz Winkler, Roland Oswald, Oliver Schoegl, Roland Kirchberger, Andreas Ebner, Graz University of Technology

14.30 (2008-32-0060/20084760)

Pneumatic Fuel Injection in a Coupled Two-Stroke Engine

Wladyslaw Mitianiec, Cracow Univ. of Technology

15.00 (2008-32-0077/20084777)

Development and Testing of a Novel Mixture Injection System for a Two Stroke SI Engine

Marimuthu Loganathan, Annamakai University; A. Ramesh, Indian Institute of Technology Madras

Vehicle Dynamics/Safety (2 of 2) (SETC15)

13.30

Room - 202E

This session will focus on the application of technology to improve the stability, handling, ride and comfort of two- and three-wheeled vehicles.

Organizers:

Masayuki Baba, Honda R&D Co., Ltd.; Deane B. Jaeger, Harley-Davidson Inc.

Chairpersons:

Masayuki Baba, Honda R&D Co., Ltd.; Deane B. Jaeger, Harley-Davidson Motor Co.

13.30 (2008-32-0055/20084755)

Disturbance Rejection Control in Motorcycle that Considers Cooperativeness with the Rider's Driving Operation

Yuya Ezaki, Takayuki Koizumi, Nobutaka Tsujiuchi, Doshisha Univ.

14.00 (2008-32-0056/20084756)

Evaluating Lane-Keeping-Assistance System for Motorcycles by Using Rider-Control Model

Nozomi Katagiri, Yoshitaka Marumo, Hitoshi Tsunashima, Nihon Univ.

14.30 (2008-32-0036/20084736)

Characteristics of Motorcycle Traffic Accidents in Japan

Tetsuya Osakabe, Institute for Traffic Accident Research and Data Analysis

15.00 (2008-32-0068/20084768)

Optimization of Damping Characteristics for Two Wheelers

Venkata Mangaraju Karanam, Venkata Mangaraju, D. Govardan, Chandan Chaven, R. Babu, Rauhavan Venkatesan, TVS Motor Co., Ltd.

(2008-32-0033/20084733)

Design of Automatic Slack Adjuster for Drum Brake in 150CC 4-Stroke Bike on Indian Road (Written Only -- No Oral Presentation)

Pradeep C. Chandrasekaran, MAHINDRA & MAHINDRA

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Alternative Fuel (1 of 2) (SETC12)

09.00

Room - 202E

This session considers the impact on performance and emissions of introducing alternative fuels to existing engines, both spark ignition and compression ignition.

Organizers:

Paul J. Richards, Innospec, Ltd.; Koji Yoshida, Nihon Univ.

Chairpersons:

James Carroll, Southwest Research Institute; Takashi Mitome, Suzuki Motor Corp.

09.00 (2008-32-0019/20084719)

Assessment on the Impacts of the 3% Ethanol Gasoline Fuel Blend on Passenger Cars and Motorcycles in Taiwan

Mei-Ching Tseng, Rui Rung Lin, Fu-Lung Liu, Industrial Technology Research Institute

09.30 (2008-32-0020/20084720)

Effect of Ethanol on Knock in Spark Ignition Gasoline Engine

Kenjiro Nakama, Kenjiro Nakma, Suzuki Motor Corp.; Jun Kusaka, Yasuhiro Daisho, Waseda Univ.

10.00 (2008-32-0021/20084721)

A Study of Carbureted Motorcycle Exhaust Emissions Using Gasoline-Ethanol Blended Fuels

Kou-Tzeng Lin, Ta-Chuan Liu, Industrial Technology Research Institute

Collegiate Events (SETC13)

09.00

Room - 202D

Papers in this session discuss innovations regarding entries in SAE Collegiate Design Series events. Three papers discuss clean and quiet snowmobile designs entered in the SAE Clean Snowmobile Challenge and two papers involve new engine designs for the Formula SAE event.

Organizers:

Robert Kee, Queen's Univ. of Belfast; Jay Meldrum, Michigan Tech. University; Koji Yoshida, Nihon Univ.

Chairpersons:

Robert Kee, Queen's Univ. of Belfast; Jay Meldrum, Michigan Technological Univ.; Isato Taki, Suzuki Motor Corp.

09.00 (2008-32-0031/20084731)

University of Idaho's Clean Snowmobile Design Using a Direct-Injection Two-Stroke Engine

Nicholas Harker, Univ. of Idaho; Andrew Findlay, Justin Johnson, BRP; Karen Den Braven, Univ. of Idaho

09.30 (2008-32-0049/20084749)

Improving Upon Best Available Technology: A Clean Flex Fuel Snowmobile

Nicholas Rakovec, Glenn Bower, Michael Maney, Brian Olenski, Univ. of Wisconsin Madison

10.00 (2008-32-0053/20084753)

Development of Clean Snowmobile Technology for Operation on High-Blend Ethanol for the 2008 Clean Snowmobile Challenge

Gregory W. Davis, Francis Wilson, Brian Daniel Schickel, Andrew Baker, Kettering Univ.

10.30 (2008-32-0073/20084773)

Camshaft Design for an Inlet-Restricted FSAE Engine

Steven McClintock, Jason Walkingshaw, Charles McCartan, Geoffrey McCullough, Geoffrey Cunningham, Queen's Univ. Belfast

11.00 (2008-32-0079/20084779)

Experimental Validation of a FSAE Engine Model

Jason Walkingshaw, Steven McClintock, Geoffrey McCullough, Charles McCartan, Geoffrey Cunningham, Queen's Univ. Belfast

Design and Simulation (1 of 2) (SETC7)

09.00

Room - 202B

This session contains the study on design and testing for parts of small engines and motorcycles. Information regarding the drum brake, stress-strain of a crankcase and cast footrest will be discussed.

Organizers:

Roy Douglas, Queen's Univ. of Belfast; Toshimi Kobayashi, Kawasaki Heavy Industries, Ltd.

Chairpersons:

Roy Douglas, Queen's Univ. of Belfast; Toshimi Kobayashi, Kawasaki Heavy Industries, Ltd.

09.00 (2008-32-0066/20084766)

Numerical and Experimental Study on the Thermo-Mechanical Behavior of Drum Brake

Om Prakash Singh, S Mohan, Venkata Mangaraju, R Babu, TVS Motor Company, India

09.30 (2008-32-0067/20084767)

Simulation and Testing of Dynamic Loads of Two-Wheeler Engine Parts

Krishnaswamy Sriram, TVS Motor Co., Ltd.

10.00 (2008-32-0069/20084769)

Material and Geometric Optimization of Cast Footrest Subjected to Shock Loads

Bapannadora Karedla, TVS Motor Co., Ltd.

Lubricants (SETC9)

09.00

Room - 202A

This session contains a variety of presentations regarding engine oil technologies developed for small engines. There are three papers addressing new lubricants for motorcycles ranging from increasing engine power, to new high-performance oils needed to meet the ever increasing demand of new low emission engines. There are also two papers to address reducing friction and wear required for engine conserving performance in small engines.

Organizers:

Michael S. Brenner, Lubrizol Corp.; Hideo Kaido, Hideo Kaito, Kawasaki Heavy Industries, Ltd.

Chairpersons:

Michael S. Brenner, Lubrizol Corp.; Tadao Okazaki, Kubota Corp.

09.00 (2008-32-0080/20084780)

Development of High Performance Four-Cycle Motorcycle Engine Oil

Akira Yaguchi, Hiroyuki Hoshin, Kazuhiro Yagishita, Kenichi Komiya, Nippon Oil Corporation; Masatoshi Akagi, Honda R&D Co., Ltd.

09.30 (2008-32-0002/20084702)

Lubricant Base Oil Effects on Motorcycle Engine Power

Michael E. Webb, Curt M. Beloy, Bel-Ray Co.

10.00 (2008-32-0005/20084705)

Performance of Motorcycle Engine Oil with Sulfur-based Additive as Substitute Zn - DTP

Akira Mitarai, Moritsugu Kasai, Idemitsu Kosan Co., Ltd.; Masatoshi Akagi, Honda R&D Co., Ltd. Motorcycle R&D Center

10.30 (2008-32-0006/20084706)

Friction and Wear of Surface Coatings in a Small Two-Stroke Utility Engine

Ka Jun Ng, Horizon Walker Gitano, Zaidi Ripin, USM

Alternative Fuel (2 of 2) (SETC12)

13.30

Room - 202E

This session considers the impact on performance and emissions of introducing alternative fuels to existing engines, both spark ignition and compression ignition. Consideration is also given to changes in engine design necessary to make the best use of changes in fuel composition.

Organizers:

Paul J. Richards, Innospec, Ltd.; Koji Yoshida, Nihon Univ.

Chairpersons:

James Carroll, Southwest Research Institute; Takashi Mitome, Suzuki Motor Corp.

13.30 (2008-32-0023/20084723)

Conversion of a Homogeneous Charge Air-Cooled Engine for Operation on Heavy Fuels

Dan Gordon; Steven Beyerlein, Judi Steciak, Univ. of Idaho

14.00 (2008-32-0024/20084724)

Comparative Performance Analysis of Single Cylinder Automobile Engine by Using LPG and CNG as Fuel

Rajiv Ramchandra Saraf, Government Polytechnic; Dr. Sukrut S. Thipse, A R A I; Dr.P.K. Saxena, MNIT

14.30 (2008-32-0025/20084725)

A Study on Combustion and Emission Characteristics of Small DI Diesel Engine Fuelled with Dimethyl Ether

Yusheng Zhang, Jingzhou Yu, Shaoren Zhou, Chunlan Mo, Huazhong Univ. of Science and Tech.

Design and Simulation (2 of 2) (SETC7)

13.30

Room - 202B

This session concentrates on the application of software techniques to aid the design and development process. These papers cover a range of topics, such as the application of model-based control algorithms and the prediction of exhaust emissions of a small motorcycle on the ECE-40 drive cycle

Organizers:

Roy Douglas, Queen's Univ. of Belfast; Toshimi Kobayashi, Kawasaki Heavy Industries, Ltd.

Chairpersons:

Roy Douglas, Queen's Univ. of Belfast; Toshimi Kobayashi, Kawasaki Heavy Industries, Ltd.

13.30 (2008-32-0038/20084738)

Model Based Control System Design and Control Strategies on ETC

Kenichi Hazu, Yokoyama Muneakazu, Mikuni Corp.

14.00 (2008-32-0043/20084743)

Experimental Validation of a Carburetor Model in One-Dimensional Engine Software

Christina Morrissey, Timothy Shedd, Univ. of Wisconsin Madison

14.30 (2008-32-0048/20084748)

Powertrain Real-Time Data Acquisition and Calibration without a Memory Description File

Parker T. Mosman, Kyle Schwulst, ElectroJet Inc.

15.00 (2008-32-0063/20084763)

Combined WAVE-Simulink Simulation to Predict the Exhaust Emissions During an ECE-40 Homologation Cycle for a CVT Vehicle

Giovanni Ferrara, Alessandro Bellissima, Univ. of Florence; Francesco Assirelli, Stefano Di Palma, Piaggio & C. s.p.a.

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Engine Component (SETC2)

13.30

Room - 202A

This session will focus on the development of new components and application of new materials for camshafts and transmissions. Also, optimization of engine cooling systems will be discussed.

Organizers:

Hiromi Deguchi, Suzuki Motor Corp.; Robert Fleck, Queen's Univ. of Belfast

Chairpersons:

Hiromi Deguchi, Suzuki Motor Corp.; Robert Fleck, Queen's Univ. of Belfast

13.30 (2008-32-0040/20084740)

New Generation Advanced Hydraulic-Mechanical Transmission with Lock-up Mechanisms and Automatic Start Clutch

Yoshihiro Yoshida, Nobuyuki Yakigaya, Kazuhiko Nakamura, Kazuhiro Takeuchi, Kenichi Nakano, Yasutaka Usukura, Honda R&D Co., Ltd

14.00 (2008-32-0071/20084771)

Optimization of Air-Cooling System of 4-Stroke Scooter Engine

Vishal Kumar, TVS MOTOR COMPANY, INDIA

14.30 (2008-32-0075/20084775)

Composite Assembled Cam Shafts

Ian Howe, North American Hoganas; Thomas Haberberger, Richard Cerini, Alpha Sintered Metals Inc.

15.00 (2008-32-0076/20084776)

Precision Gears with Sintered Cr Materials

Senad Dizdar, Ian Howe, Pernilla Johansson, North American Hoganas

15.30 (2008-32-0078/20084778)

Development of Correlation Model for Manual shift Synchronesh Transmission Efficiency through Experimental Analysis

T M Manoz Kumar, TVS Motor Co., Ltd.

Fuel Supply Systems (SETC6)

13.30

Room - 202D

This session will focus on the unique requirements and challenges to optimize fuel delivery and combustion quality for small engine applications, due to wide ranging environmental conditions as well as fuel type and quality. It will include presentations related to fuel pumps, injectors and other components related to the delivery of the fuel from the tank to the engine as well as optimization of the combustion process, and will discuss systemic and component related issues.

Organizers:

Ryozo Okita, Yamaha Marine Co., Ltd.; Anthony A. Szczotka, Robert Bosch LLC

Chairpersons:

Ryozo Okita, Yamaha Marine Co., Ltd.; Anthony A. Szczotka, Robert Bosch LLC

13.30 (2008-32-0039/20084739)

Development of Compact Fuel Pump Module for Motorcycles

Minoru Ueda, Shunji Akamatsu, Mineo Torikai, Mitsuru Fukuda, Keihin Corporation; Masaki Ueno, Honda R&D Co., Ltd.

14.00 (2008-32-0064/20084764)

Investigation of Spray and Numerical Model Applied for Fuel-Injection Small Engines

Toshiro Kiura, Honda R&D Co., Ltd. Power Product R&D Center; Timothy Shedd, Benjamin Blaser, Univ. of Wisconsin Madison

14.30 (2008-32-0065/20084765)

Practical Design Approach to Improve Injection System for Industrial Diesel Engines Using Simulation Techniques

Tadao Okazaki, Masato Ueda, Takashi Onishi, Masahiko Sugimoto, Kubota Corp.; Mika Kato, Kubota System Inc.

(2008-32-0051/20084751)

Control of Fuel Vapor on Low Pressure Fuel Injection Systems for Small Engines (Written Only -- No Oral Presentation)

Paul Ravenhill, Jeffrey Allen, Scion Sprays, Ltd.

Plenary Session (SETC PLENARY)

16.30

Room - 201A&B

This plenary session will focus on the future fuel and emissions challenges that face the small engine industry. The talks will include information about proposed and pending fuel initiatives, and their likely impact on the industry. The impact that upcoming emissions standards will have on future engine technologies for the motorcycle and marine sectors will also be presented. The effect of future fuel composition and its global availability on the emissions challenge will also be addressed. Following presentations by the panelists there will be an open question period.

Moderators:

Jaal B. Gandhi, Univ. of Wisconsin Madison

Panelists:

Jeffrey Coughlin, Harley-Davidson Motor Co.
David Foulkes, Mercury Marine
Brian West, Oak Ridge National Laboratory

Advanced Combustion (SETC14)

09.00

Room - 202D

This session will focus on papers that describe advances in combustion system development by utilizing new diagnostics; the performance of modern combustion systems such as HCCI and other low temperature combustion systems; and fundamental studies of combustion in engines.

Organizers:

Jaal B. Ghandhi, Univ. of Wisconsin - Madison; Minoru Iida, Yamaha Motor Co., Ltd.

Chairpersons:

Jaal B. Ghandhi, Univ. of Wisconsin - Madison; Minoru Iida, Yamaha Motor Co., Ltd.

09.00 (2008-32-0026/20084726)

A Study on the Combustion and Emission Characteristics of Diesel Fuel Blended with Ethanol in an HCCI Engine

Yung-Jin Kim, Ki-Bum Kim, Ki-Hyung Lee, Hanyang University

09.30 (2008-32-0028/20084728)

Knock Detection for a Large Displacement Air-Cooled V-Twin Motorcycle Engine Using In-Cylinder Ionization Signals

Nicholas Danne, David L.S. Hung, Visteon Corp.; Guoming Zhu, Michigan State Univ.; Jay McKoskey, Polaris Industries Inc

Control Systems (SETC16)

09.00

Room - 202B

Papers in this session discuss design, testing, and results of new and novel systems to control fuel and ignition, and the sensors, electronics, and strategies employed. Applications for these systems range from simple single-cylinder lawn and garden equipment to multi-cylinder vehicular engines.

Organizers:

James Carroll, Southwest Research Institute; Ryozi Okita, Yamaha Marine Co., Ltd.

Chairpersons:

James Carroll, James Carroll, Southwest Research Institute

09.00 (2008-32-0054/20084754)

A Scalable Engine Management System Architecture for Motorcycle/Small-Vehicle Application

Mahesh Balike, Richard Tricoli, Visteon Corp.

(2008-32-0052/20084752)

Engine Management System for Fuel Injection System Specifically Designed for Small Engines (Written Only -- No Oral Presentation)

Jeffrey Allen, Scion Sprays, Ltd.

Hybrid, Electric Drive & Fuel Cell (SETC17)

09.00

Room - 202A

This session's paper discusses electrical power generation in a small cogeneration gas engine.

Organizers:

Jay Meldrum, Michigan Tech. University; Takashi Mitome, American Suzuki Motor Corp.

Chairpersons:

Jay Meldrum, Michigan Tech. University; Takashi Mitome, Suzuki Motor Corp.

09.00 (2008-32-0044/20084744)

Study of Power Generation Loss Decrease in Small Gas Engine Cogeneration

Masanori Ueno, Hiroyuki Eguchi, Takayuki Enomoto, Makoto Ogawa, Honda R&D Co., Ltd.

Materials (SETC11)

09.00

Room - 202E

Materials selection is a fundamental parameter influencing the successful introduction of a new product. Material choices require balancing material performance against total cost. This session will introduce participants to advances in PM steels for power transmission components that can optimize both performance and cost.

Organizers:

James Bonifield, Bombardier Recreational Products NA(BRP); Takashi Mitome, Suzuki Motor Corp.

Chairpersons:

James Bonifield, Bombardier Recreational Products NA(BRP); Hiroshi Yamagata, Yamaha Motor Co., Ltd.

09.00 (2008-32-0041/20084741)

Development of Small-Sized Multilayer Fuel Tank for Motorcycles and ATVs Complying with EPA Gasoline Permeation Control

Akihito Kobayashi, Takahiro Matayoshi, Ko Kurata, Hidesaburo Gotsu, Honda R&D Co., Ltd.

09.30 (2008-32-0047/2004747)

Development of Compound Coating that Reduces Permeation of Chloride Ion in Salty Water for Hexavalent-Chromium-Free Metal Gasket for PWC Engines

Yasuaki Nagai, Shinsuke Mochizuki, Kaoru Hanawa, Kenji Okubo, Honda R&D Co., Ltd.; Shingo Watanabe, Tsunehiko Abe, Nippon Leakless Corporation

10.00 (2008-32-0058/20084758)

The Potential for use of Heat Treated Aluminum High Pressure Die-Castings in Engine Applications

Roger Neil Lumley, CSIRO Light Metals Flagship

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

10.30

(2008-32-0074/20084774)

Lean Cr Containing PM Materials for Optimized Cost-Performance

David Milligan, North American Hoganas; Thomas Haberberger, Alpha Sintered Metals; Ian Howe, North American Hoganas; Richard Cerini, Alpha Sintered Metals Inc

09.30

(2008-32-0057/20084757)

Application of Statistical Energy Analysis to Noise Prediction of Co-generation System

Hiroshi Uehara, Yanmar Co., Ltd.; Takayuki Koizumi, Nobutaka Tsujiuchi, Satoshi Morita, Tomoya Minamino, Doshisha Univ.

NVH Technology (SETC5)

09.30

Room - 202A

All aspects of noise and vibration related to small engines are covered in this session including: generation, experimental techniques, measurement, numerical analysis, NVH materials, source identification, NV Quality and novel solutions.

Organizers:

Kenneth Kicinski, Harley-Davidson Motor Co.; Tadao Okazaki, Kubota Corp.

Chairpersons:

Kenneth Kicinski, Harley-Davidson Motor Co.; Tadao Okazaki, Kubota Corp.

10.00

(2008-32-0035/20084735)

Low-Noise Leaf Blower with Low-Emission Stratified Engine

Markus Herzog, Christian M. Moeser, Gerhard Osburg, Ulrich Keck, ANDREAS STIHL AG & Co. KG; Kai-Ulrich Machens

Closing Ceremony (SETC19)

11.00

Room - 201A&B

Presenters:

Shed Mohamad Aidid, Kah Motor Co.; Sakae Mizumura, Honda R&D Co., Ltd.

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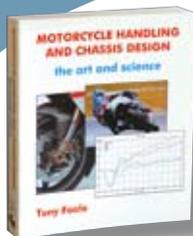
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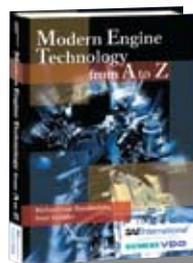
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By Richard Van Basshuysen and Fred Schaefer

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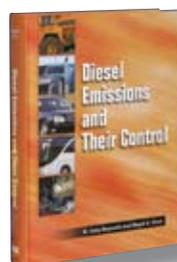
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www.thermotech.com

Booth #109

An industry pioneer since 1949, Thermotech is a technology-driven contract manufacturing company specializing in precision injection molding and assembly. Its three manufacturing facilities are located in Hopkins, Minnesota, and in Juarez and Queretaro, Mexico. All plants are ISO 9001:2000 and ISO/TS 16949 certified.

Transportation Research Center Inc.

10820 State Route 347
East Liberty, OH 43319
United States
www.trcpg.com

Booth #302

TRC Inc. specializes in compliance, research and development testing. Brake, crashworthiness, durability, fuel economy, handling, and performance testing is conducted at the independent proving ground. Facilities include a 7.5 mile test track, 50-acre vehicle dynamics area, 9,000 ft. x 84 ft. skid pad, off-highway area, and crash test facility.

Tripac International

9224 Oak Grove Rd
Fort Worth, TX 76140
United States
www.tripacintl.com

Booth #105

Designs and Manufactures compact Electric motors and Cooling fans for Motor Cycle and ATV.

W

Walbro Engine Management

4144 Doerr Rd
Cass City, MI 48726
United States
www.walbro.com

Booth #110

Walbro is a leading global supplier of engine management components for the small engine market with over 50 years of experience, locations in [6] countries and supplies a diversified customer base. Walbro welcomes the next generation of the small engine market and will rely on its technological innovation to continue as a leading supplier of engine management products.

W.C. Heraeus GmbH

Heraeusstrasse 12-14
Hanau 63450
Germany
www.wc-heraeus.de

Booth #202

Heraeus, a globally active precious metal and technology group is one of the leading small engine catalysts manufacturers. Offering customized exhaust emission solutions Heraeus is serving the small engine catalysts market since 1992. Further Heraeus provides solutions for the following markets: motorcycles, automotive, commercial vehicles, industrial/special and marine applications.

Wineman Technology Inc

1668 Champagne Dr N
Saginaw, MI 48604
United States
www.winemantech.com

Booth #312

WTI is a high tech engineering firm specializing in dynamometer control & data acquisition systems and complete test cell integration. Our systems features our INERTIA application suite coupled with a powerful, real-time control system, that combines the latest in digital control technology with off-the-shelf hardware to produce one of the industry's most powerful and flexible controllers.

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Company	Page	Booth#	Web Address
BASF Catalysts LLC	Cover 3		www.catalysts.basf.com
Delphi	Page 7	311	www.delphi.com
Lubrizol Corporation	Cover 4		www.lubrizol.com
PAVE Technology	Cover 2		www.PAVEtechnologyCo.com

A yellow lawnmower is shown from a low angle, positioned in the foreground on a lush green lawn. The background features a line of trees under a bright blue sky with scattered white clouds. Numerous clear, shimmering bubbles are floating in the air, some appearing to trail behind the lawnmower as if being blown by its engine. The overall scene is bright and clean, suggesting a well-maintained environment.

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**We help it
cost-effectively meet
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