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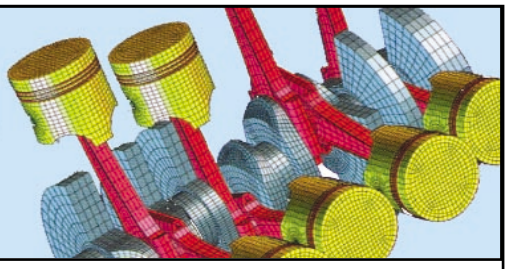
Internal Combustion Engine



Newsletter of the Internal Combustion Engine Division of ASME Spring 2006

SURI RAJAN ▪ Editor

FROM THE EDITOR'S DESK

The Internal Combustion Engine Division of ASME continues to be one of the most dynamic and congenial organizations within ASME. It's vibrant nature provides the ideal setting for strong technical growth and in-depth technical expertise dissemination. With this Spring semi-annual issue the ICED Newsletter breaks new ground in bringing the membership an electronic version of Division Events and Announcements. On behalf of the Administrative Committee and the individual contributors, here's wishing you happy reading.

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Dr. Stefan Pischinger of FEV Motorentechnik GmbH is Featured Aachen Speaker

Ramesh Poola

Keynote Speech: "The Future of the Combustion Engine"

Prof. Dr-Ing. Stefan Pischinger
President and CEO, FEV Motorentechnik GmbH

The Executive Committee of ASME-ICED and the Local Host Organizing Committee are pleased to announce that Prof. Dr-Ing. Stefan Pischinger, President and CEO of FEV has kindly agreed to deliver the keynote speech at the inaugural event of the spring conference.

Professor Pischinger has assumed the President and CEO position at FEV Motorentechnik GmbH, Aachen in April 2003. Also, he is the Director of the Institute of Combustion Engines at Aachen University of Technology. Prior to taking up senior leadership positions at FEV, Professor Pischinger held several key engineering positions at Daimler-Benz, AG that include Head of the Department "Diesel Engine" in Advanced Engineering and Project Manager for V8-Diesel engine from 1994-97, Project Manager "Future Spark Ignition Engine," in the Research Department from 1992-1994 and Group Leader in Design Department 4-Valve Pre-Chamber Engine from 1989-92. Professor Pischinger has received Ph.D. in Mechanical Engineering from MIT, Cambridge, USA in 1989. He served as a Research Assistant at the Sloan Automotive Laboratory, MIT from 1985 to 1989. He received his Diploma in Mechanical Engineering at Aachen University of Technology.

Professor Pischinger will discuss some of the internal combustion engine challenges for the future, more specifically the current development trends of engine technologies. Some of the topics that are going to be discussed include diesel engine emissions reduction strategies, fuel consumption trends, future engine torque characteristics, and engine downsizing and fuel economy. With respect to gasoline engines, he will discuss methods to achieve levels comparable to that of diesel engines with respect to fuel consumption and torque characteristics, valve train variability, downsizing and transient performance. In general, a short Q&A follows the presentation.

Recent Division Events and Highlights

V. Wong

1. **IC Engine Division on the Info-Bahn:** As you may notice, this edition of the Newsletter is delivered to you electronically. This allows the Division to deliver more up-to-date information to its members more than once a year. The Division also fully utilizes the web pages for its conference program announcements, registration and paper submission. Visit it often: **http://www.asmeconferences.org/iceX0N**, where X is either s for spring or f for fall, and 0N is the year, such as 06 for 2006.

2. **ASME Leadership Boot Camp:** A/k/a Leadership Training Conference. Every spring, ASME Society and Division leaders convene in a Leadership Training Conference to discuss strategic visions and operation of the Society, is organization and how it can better serve its members and society. The purpose of the LTC 2006 is to provide ASME unit leaders and key committee personnel with an opportunity to share best practices and form partnerships with other units and focus on critical issues important to the success of the Society. This year's attendees: Frank Aboujaoude and Andy Pope - the Executive Committee New Member and new Incoming Chair respectively - will share their experiences with the Division at large upon their return from the captivating March 3-5 mission in Houston.

3. **Newly Elected Members to Board of Associates:** Six new members have been elected to the Division's Board of Associates. An Associate of the ICE Division is an ASME member who is recognized to be taking or will take an active role in accomplishing the Division's objectives and participates in the Division's technical programs. Associates have the responsibility to enhance the Division's operations in the execution of its mission to disseminate and expand state-of-the-art engine technology to ASME members, to those in the Engineering profession, and to industry. The six new members are: Dr. Steve Ciatti of Argonne National Laboratory, Prof. Song-Charng Kong of Iowa State University, Donald M. Newburry of Miratech Corporation, Lynn Douglas Palmer of Ricardo, Inc., Prof. Rudolf H. Stanglmaier of Colorado State University, and Prof. Margaret S. Wooldridge of the University of Michigan, Ann Arbor.

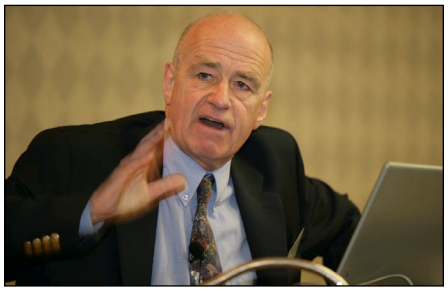
4. **New Chairpersons of the Government Relations and Technical Awards Committees:** Dr. Teoman Uzkan, who initiated the Technical Awards Committee six years ago and served as its only Chair since then, has decided to pass on the tremendous responsibility to a new chair. The Technical Awards Committee identifies and awards the Best Technical Paper contributions in divisional conferences. The Executive Committee, through a comprehensive search and solicitation process, has invited Prof. Jerry Caton to continue the noble mission of the Committee and Jerry has accepted the position. The Government Relations Committee is responsible for coordinating all government relations activities between the Division and the Washington staff and to communicate all relevant government relations information to the Division membership. The Division has tapped the experience of Lynn Douglas Palmer, our new Associate in the Division, to lead the Committee. We expect enhanced government relations with Lynn's active involvement.

5. **New Division Treasurer:** After five years of great service to the Division, Alan C. Anderson has decided to pass the reins of the division coffer to Dr. Victor W. Wong of MIT. Dr. Wong is an engineer by trade but has an MBA from Indiana University and has been a volunteer Treasurer for another non-profit organization. He will continue to provide operating data to the Division to maintain its excellent financial track record.

Fall 2005 Ottawa Conference a Big Success

Kirby Chapman

The Internal Combustion Engine (ICE) covers a wide range of applications from automotive, truck, aircraft, marine, and locomotive engines, to large power plants and other industrial applications. Driven by engineering, economic, and environmental challenges, rapid technical progress continues to be made in cost, performance, fuel economy, durability, and improved emissions. To create these improvements, progress is necessary in almost all areas of internal combustion engines. These areas range from fundamental combustion and emission processes, lubrication, component and system design, and the utilization of various fuels. To provide a forum for discussion and presentation of the most recent results and technical issues, the 2005 Fall Technical Conference of the ASME Internal Combustion Engine Division was held on **September 11 through 14, 2005, in Ottawa, Canada at the Crowne Plaza Hotel**. The conference was hosted by the National Research Council of Canada under the able guidance and leadership of Stuart Neill.



Dr. Len Flint of Lenef Consulting Delivers Keynote Address at Fall 2005 Ottawa Conference

Presentations and papers topics covered the range from innovative designs and redesigns to a better understanding of the emission production mechanisms that occur within the internal combustion engine. More than 80 papers were presented during the two-day technical program. The annual ASME Internal Combustion Engine Division Honors and Awards banquet was held on Tuesday evening. The conference concluded by treating the conference delegates to technical tours of the National Research Council's Combustion Laboratory and Environmental Canada's Environmental Technology Centre.

The technical program began Monday morning with the Keynote session. Keynote lecturer Dr. Len Flint of Lenef Consulting Ltd. offered the keynote address, entitled **"Canada's Oil Sands: Challenges and Opportunities."** The Canadian oil sands are the largest source of crude oil in North America. Estimates by known technology suggest that approximately 175 billion barrels of oil can be recovered from these sands.

Following the Keynote Address, the technical program continued through Tuesday with four concurrent sessions. Session Topics included Advanced Materials, Emissions, Fuel Sprays, Combustion, Engine Modeling, Basic Engine Design, and Lubrication and Friction.

The ASME Internal Combustion Engine Division deeply appreciates the support of the track and session chairs, and the dozens of reviewers that are required to review the approximately 100 papers that were submitted for this conference. Without these leaders, the conference would not be possible.

The papers presented at the conference were distributed in the form of a searchable CD. We recognize and honor all the authors of these papers, and trust that you find the information well worth the time investment.
It's getting even better!

Spring 2006 ICE Meeting to be held in Aachen Germany, May 8-10, 2006

Tim Callahan and Ramesh Poola

Consistent with the long range planning strategy to be an international organization, the Spring ICE meeting will once again be held overseas to promote international participation and membership. The Spring 2006 ICE meeting will be held in Aachen Germany and hosted by the international research and development firm FEV. The conference site is the Dorint Quellenhof Hotel in Aachen. Rooms have been blocked at numerous hotels close to the conference site to accommodate various tastes and budgets. Hotel arrangements can be made online through the Aachen tourist agency at the link below.

To be competitive in today's market, engine professionals need information and the ASME Internal Combustion Engine Conference is the place to get it. We also know your time is valuable, so we pack a lot of information into a two day technical program. The conference addresses the design, development and application of compression-ignition (diesel), spark ignition, rotary or reciprocating engines. A special focus for this conference will be on **end user applications** of engines in the **Marine, Stationary, Rail, and Automotive markets**. The Conference is hosted by FEV in Aachen, Germany. The Technical Program is shaping up with over 80 technical papers to be presented, and a panel discussion on "Future UIC-EC-EPA Locomotive Exhaust Emission Regulations."

The Technical Program will begin Monday morning with the Keynote Address by Prof. Dr-Ing. Stefan Pischinger, President and CEO of FEV. Professor Pischinger will discuss some of the internal combustion engine challenges for the future, more specifically the current development trends of engine technologies. Some of the topics that are going to be discussed include diesel engine emissions reduction strategies, fuel consumption trends, future engine torque characteristics, and engine downsizing and fuel economy. With respect to gasoline engines, he will discuss methods to achieve levels comparable to that of diesel engines with respect to fuel consumption and torque characteristics, valve train variability, downsizing and transient performance. In general, a short Q&A follows the presentation.

Following the Keynote Address, the Technical Program will continue through Tuesday afternoon with four (4) concurrent sessions. Session Topics End use operations and maintenance, Small Engine Technology, New Developments in engine and emissions technologies, After-treatment systems modeling and testing, Developments in large bore diesel and natural gas engines, Alternate fuels, Hydrogen and Pyrolysis of fuels, Combustion and emissions, Advancements HCCI engine combustion, Fuel injection and sprays, Engine design, Design, Mechanics, and NVA, Lubrication and Friction, and Controls, Sensors, and Instrumentation

Aachen is located in westernmost Germany near the tri-border region of Belgium, Netherlands, and Germany. Aachen, once an imperial Roman City, has a rich history and unique blend of medieval and modern architecture that includes the Cathedral and Town Hall which date to the 14th century. Hot springs, fountains and monuments are among the many famous sights the city has to offer. The host hotels are within a short walk of the city center and offer easy access to many shops, restaurants, and historic sights.

This historic city lies within a short distance of the international airports of Brussels, Dusseldorf, and Cologne. Meeting participants choosing other international airports, such as Frankfurt, Paris, or Amsterdam, can conveniently link to Aachen via rail or car. A taxi ride from the Aachen Rail station to one of the host hotels is approximately 6 Euro.

Mr. Pleimling and Ms. Anne Wittstamm, both from FEV, are the local hosts for the conference. The conference will begin on Sunday with a welcoming reception at the Quellenhof Hotel. Monday evening, participants are encouraged to dine at one of the many fine restaurants in the downtown area. The conference dinner on Tuesday evening will be held at the Coronation Hall.

The Aachen meeting is drawing great participation from European engine manufacturers and end-users in the areas of power generation, rail transportation, and marine industry. Works tours in conjunction with the technical meeting will include FEV, an internationally recognized leader in the design and development of internal combustion engines, and Deutz, a world wide operating leading manufacturer of diesel engines for on-road and off-road applications.

Helpful and informative links:

ASME Conference Web Site: www.asmeconferences.org/ICEs06
Aachen Web Site: www.aachen.de/EN/index.html
Rail Travel Information: www.bahn.de
Hotel Reservations: www.aachen-congress.de/asme06

Fall 2006 ICE Meeting to be held in Sacramento, California, November 6-8, 2006

Tim Callahan

The Fall ICE meeting will be held at the Sheraton Grand Hotel in Sacramento, California. The conference will be hosted by Union Pacific Railroad. The combination of pending emission regulations for locomotives, a conference host from the rail industry, and the California venue promise to make the conference a major attraction to the locomotive industry. Also included in the program will be the latest from the ARES-ARICE natural gas engine programs. Union Pacific will guide the technical tour in conjunction with the technical meeting.

CALL FOR PAPERS

Internal Combustion Engine Division of ASME

Invite Papers for the

2006 Fall Technical Conference

November 5th - 8th, 2006 ~ Sacramento, California

Hosted by: Union Pacific Railroad

The 2006 ASME Internal Combustion Engine Division Fall Technical Conference will be held in Sacramento, California in November 5th – 8th, 2006. The conference is being hosted by Union Pacific Railroad and will include a tour of Union Pacific's Roseville facility. Highlights of the conference will include a panel session on locomotive emission reduction efforts in California, and a "Clean Air Technology Showcase" at the UP's Roseville Yard where several low-emission technologies for locomotives will be on display. Social events will be held at the California State Railroad Museum.

Papers are invited for publication and presentation on topics related to all types of automotive, marine, locomotive, off-highway, and industrial engines. Papers may address any aspect of the design, development or application of compression-ignition, spark-ignition, rotary, or reciprocating engines. Light-duty and heavy-duty engines, as well as large-bore I.C. engine systems for power generation and transportation propulsion are welcome.

Anticipated technical sessions span the range from fundamental research to practical in-use applications. Examples of topics include, but are not limited to, Advanced Engine Technologies, Turbochargers, Fuels and Combustion, Fuel Injection Sprays, Alternate Fuels, Emission reduction technologies, Instrumentation, Control and Monitoring, Engine Simulation and Diagnostics, Lubrication & Friction, Component dynamics, Wear, Materials, Engine After Treatment Systems, Engine Design and Modeling, Engine Efficiency Improvements, Engine Design, and Gas-Engine Systems Development. Engine manufacturers, engine consulting companies, and end-users are encouraged to participate.

All accepted papers that are accepted will be published in the Conference Proceedings, which will be in CD-ROMs available at the conference, and papers will be considered for the Journal of Engineering for Gas Turbines and Power. Exceptional written papers and presentations will be considered for ASME ICE Division Conference awards. ASME review and publication policies will apply. Please submit your 400-word (or less) text only abstract at the FTC 2006 website by May 1, 2006: **www.asmeconferences.org/ICEF06/**

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Important Dates Are:

May20, 2006	**Offer of Paper, One Page Abstract**
June 5, 2006	**Abstracts Accepted**
July 10, 2006	**Draft Manuscript Due for Review**
August 14, 2006	**Draft Paper Reviews Complete**
September 18, 2006	**Camera Ready Paper Due**