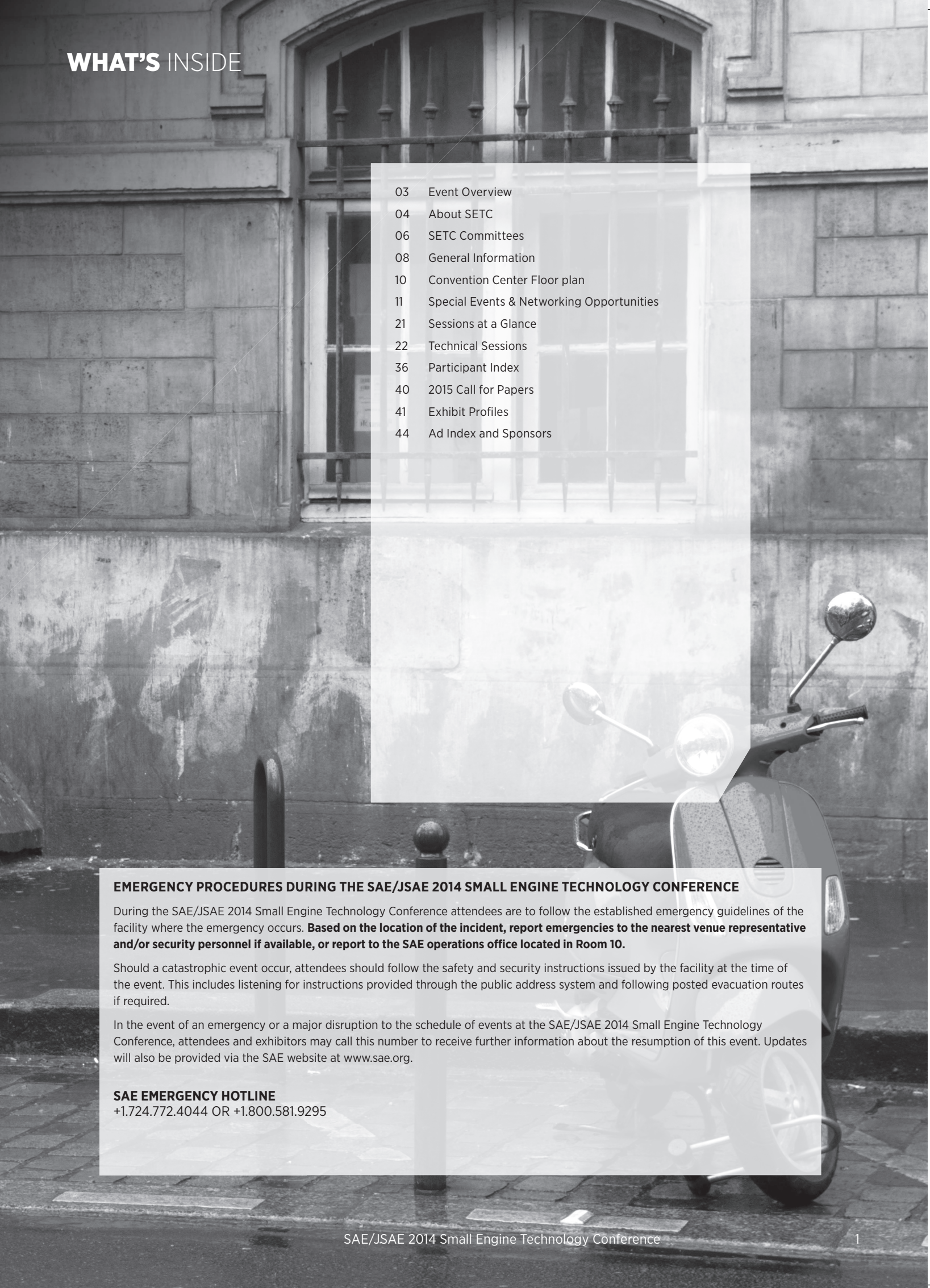
WHAT'S INSIDE



EMERGENCY PROCEDURES DURING THE SAE/JSAE 2014 SMALL ENGINE TECHNOLOGY CONFERENCE

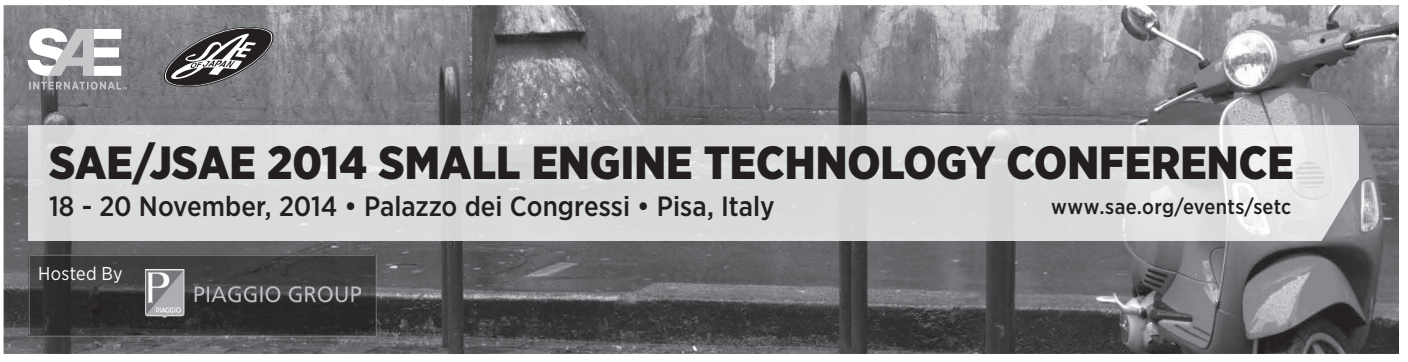
During the SAE/JSAE 2014 Small Engine Technology Conference attendees are to follow the established emergency guidelines of the facility where the emergency occurs. **Based on the location of the incident, report emergencies to the nearest venue representative and/or security personnel if available, or report to the SAE operations office located in Room 10.**

Should a catastrophic event occur, attendees should follow the safety and security instructions issued by the facility at the time of the event. This includes listening for instructions provided through the public address system and following posted evacuation routes if required.

In the event of an emergency or a major disruption to the schedule of events at the SAE/JSAE 2014 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.

SAE EMERGENCY HOTLINE
+1.724.772.4044 OR +1.800.581.9295

CHAIR LETTER



DEAR EXPERTS OF THE SMALL ENGINE INDUSTRY -

It is with great pleasure that I have accepted to serve as the 2014 SAE Small Engine Technology Conference (SETC) chairman and now wish to share some highlights of the program, in hopes that you will join me in Pisa, Italy this November.

The theme is, "Small Engines Leaning Towards Enhanced Personal Mobility," and from the many tours, technical sessions, and networking functions planned, you will undoubtedly benefit from what and who you see and learn about during your stay in this lovely region of Tuscany.

Plan now to come and share in the knowledge of the small engine industry with your peers on such topics as advanced combustion, alternative fuels, hybrids, safety, components and many others under development, due to pending regulations and global demands.

I personally look forward to meeting and welcoming you to Pisa. For full details of the event, please visit http://www.sae.org/events/setc/.

Ciao,

Maurizio Marcacci
2014 SETC Chairman

EVENT OVERVIEW

Monday 17 November	**Tuesday** 18 November	**Wednesday** 19 November	**Thursday** 20 November
Tour Registration Hours 7:30 – 8:30	**Registration Hours** 7:30– 17:00	**Registration Hours** 7:30 – 17:00	**Registration Hours** 7:30 – 13:30
SOLD OUT **Technical Tours of Continental, Magna, and Piaggio** 8:30 – 16:30	**Opening Ceremony & Keynote** 8:30 – 10:00	**Plenary Session** 8:30 – 10:00	**Technical Sessions** 8:30 – 10:00
	Networking Break 10:00 – 10:30	**Networking Break** 10:00 – 10:30	**Networking Break** 10:00 – 10:30
	Technical Sessions 10:30 – 12:00	**Technical Sessions** 10:30 – 12:00	**Technical Sessions** 10:30 – 11:30
	Lunch 12:00 – 13:30	**Lunch** 12:00 – 13:30	**Lunch** 11:30 – 12:30
Early Bird Registration and Exhibitor Setup 14:00 – 17:00	**Technical Sessions** 13:30 – 15:00	**Technical Sessions** 13:30 – 15:00	**Closing Ceremony** 12:30 - 13:30
	Networking Break 15:00 – 15:30	**Networking Break** 15:00 – 15:30	
	Technical Sessions 15:30 – 17:00	**Technical Sessions** 15:30 – 17:00	
	Welcome Reception **Sponsored by: Piaggio & C.s.p.a.** **Piaggio Museum** 18:30 – 19:30	**Banquet** **Sponsored by: Synerject** **Stazione Leopolda** 18:30 – 21:30	

EMERGENCY HOTLINE
724-772-4044

SAE INTERNATIONAL

Warrendale Office
400 Commonwealth Drive
Warrendale, PA 15096-0001
USA
Phone: +1-724-776-4841
Fax: +1-724-776-0790

Customer Service
+1-877-606-7323
(toll free U.S. and Canada)
+1-724-776-4970
www.sae.org
customerservice@sae.org

Troy Office
755 W. Big Beaver Rd.
Troy, MI 48084
Phone: +1-248-273-2455
Fax: +1-248-273-2494

ABOUT SETC

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
SETC 2010	Linz	Austria
SETC 2011	Sapporo	Japan
SETC 2012	Madison	USA
SETC 2013	Taipei	Taiwan
SETC 2014	Pisa	Italy

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

PRÜFREX®

THE IGNITION COMPANY

Every spark counts.

Patented Solution

Boost your engine power with the PRUFREX Booster Effect.

Developed and patented by PRUFREX, the booster method ensures an optimal combustion process even in difficult situations and harsh conditions:

- Improved cold starting performance
- Increased acceleration response
- Lower emissions

PRUFREX is a globally leading full-service company developing and manufacturing highly integrated digital ignition systems and electronic control units.

For more information please visit us at booth #18 where you can pick up your case study.

www.prufrex.com

SETC GENERAL COMMITTEE

General Committee Members:

SAE Members

William Attard
Chris Barecki, AVL North America Inc
Kai Beck, Mot GmbH
Glenn Bower, University of Wisconsin Madison
Brian Callahan, Achates Power Inc
Renzo Capitani, Universita degli Studi di Firenze
Luca Carmignani, Piaggio & C SpA
James Carroll, Southwest Research Institute
Paolo Citti, Guglielmo Marconi Unversity
Derek Cleasby, Bosch Engineering GmbH
Jan Czerwinski, University of Applied Sciences Biel-Bienne
Brent Dohner, Lubrizol Corp
Roy Douglas, Queen's University of Belfast
Giovanni Ferrara, University of Florence
Ken Fosaaen, Kerdea Technologies
Josef Fuerlinger, BRP-Powertrain GmbH & Co KG
Roberto Gentili, Universita degli Studi di Pisa
Jaal Ghandhi, University of Wisconsin Madison
Alessandro Giorgetti, University Guglielmo Marconi
Peter Kaub, Re-Sol LLC
Robert Kee, Queen's University Belfast
Ken Kicinski, Harley Davidson Inc
Paul Litke, USAF
Joseph Lomonaco, Harley-Davidson Motor Co
Nagesh Mavinahally, Meggit Control Systems, Chair of Committee
Geoffrey McCullough, Queen's University Belfast
Jay Meldrum, Michigan Technological University
Scott Miers, Michigan Technological University
Daniel Nehmer, John Deere & Co
David Palmer, Bombardier Recreational Product Inc
Marco Pierini, Universita degli Studi di Firenze
Giuseppe Pozzana, Pont-Tech scrl
Thorsten Raatz, Robert Bosch GmbH
Enrico Rebaudo, Continental Automotive Italy SPA
Paul Richards
Mario Santucci, Piaggio & C SpA
Stephan Schmidt, Graz University of Technology
Kay Stepper, Robert Bosch LLC
Sebastian Strauss, STIHL Inc
Tony Szczotka, Robert Bosch LLC
Leonid Tartakovsky, Technion Israel Inst of Technology
Jeff Wasil, Bombardier Recreational Product Inc

JSAE Members

Masayuki Baba, Honda R&D Co Ltd
Takashi Mitome, Suzuki Motor Corp
Yu Motoyama, Yamaha Motor Co Ltd
Michihisa Nakagawa, Kawasaki Heavy Industries Ltd, Chair of Committee
Tadao Okazaki, LEMA (Kubota Corp)
Hideyuki Okumura, JBIA (Yamaha Motor Co Ltd)
Aiko Otsu, JSAE
Koji Yoshida, Nihon University

Technical Committee Members:

SAE Members

Chris Barecki, AVL North America Inc
Kai Beck, Mot GmbH
Glenn Bower, University of Wisconsin, Madison
Brian Callahan, Achates Power Inc
Renzo Capitani, Universita degli Studi di Firenze
Mario Cappelli, Magna Closures SPA
Luca Carmignani, Piaggio & C SpA
James Carroll, Southwest Research Institute
Paolo Citti, Guglielmo Marconi University
Derek Cleasby, Bosch Engineering GmbH
Jan Czerwinski, University of Applied Sciences Biel-Bienne
Brent Dohner, Lubrizol Corp
Roy Douglas, Queen's University of Belfast
Giovanni Ferrara, University of Florence
Ken Fosaaen, Kerdea Technologies
Josef Fuerlinger, BRP-Powertrain GmbH & Co KG
Roberto Gentili, Universita degli Studi di Pisa
Jaal Ghandhi, University of Wisconsin, Madison
Alessandro Giorgetti, University Guglielmo Marconi
Tobias Kallerhoff, Robert Bosch GmbH
Peter Kaub, Re-Sol LLC
Robert Kee, Queen's University, Belfast, Chair of Committee
Ken Kicinski, Harley-Davidson Inc
Paul Litke, USAF
Alastair Long, Queen's University Belfast
Nagesh Mavinahally, Meggitt Control Systems
Geoffrey McCullough, Queen's University Belfast
Jay Meldrum, Michigan Technological University
Simona Merola, Istituto Motori CNR
Scott Miers, Michigan Technological University
Daniel Nehmer, John Deere & Co
David Palmer, Bombardier Recreational Product Inc
Philip Pierce, Harley-Davidson Inc
Marco Pierini, Università degli Studi di Firenze
Giuseppe Pozzana, Pont-Tech
Thorsten Raatz, Robert Bosch GmbH
Enrico Rebaudo, Continental Automotive Italy SPA
Paul Richards
Mario Santucci, Piaggio & C SpA
Stephan Schmidt, Graz University of Technology
Kay Stepper, Robert Bosch LLC
Sebastian Strauss, STIHL Inc
Tony Szczotka, Robert Bosch LLC
Leonid Tartakovsky, Technion Israel Inst of Technology
David Thornhill, Queen's University of Belfast
Cinzia Tornatore, Istituto Motori CNR
Jeff Wasil, Bombardier Recreational Product Inc

JSAE Members

Masayuki Baba, Honda R&D Co Ltd
Hiromi Deguchi, Suzuki Motor Corp
Shigeru Fujii, Yamaha Motor Co Ltd
Satoshi Inoue, Honda R&D Co Ltd
Tatsuya Kuboyama, Chiba University
Hirotaka Kurita, Yamaha Motor Co Ltd
Takashi Mitome, Suzuki Motor Corp
Yasuyuki Muramatsu, Yamaha Motor Co Ltd
Michihisa Nakagawa, Kawasaki Heavy Industries Ltd
Hiroshi Nakahara, Kawasaki Heavy Industries Ltd
Thoru Nakazono, LEMA (Yanmar Co Ltd)
Yutaka Nitta, Suzuki Motor Corp
Tadao Okazaki, LEMA (Kubota Corp), Chair of Committee
Hideyuki Okumura, JBIA (Yamaha Motor Co Ltd)
Hirohi Omote, LEMA (Yanmar Co Ltd)
Tomoo Shiozaki, Honda R&D Co Ltd
Masahiko Sugimoto, LEMA (Kubota Corp)
Hiroya Ueda, Honda R&D Co Ltd
Hiroshi Yano, Kawasaki Heavy Industries Ltd
Koji Yoshida, Nihon Univ

LEMA Japan Land Engine Manufacturers Association
JBIA Japan Boating Industry Association

Riding the Future

SYNERJECT
Riding the Future

Your supplier of electronic engine management systems, modules, and components for both 4-stroke and 2-stroke engines in port and direct injection applications.

Visit our website
www.synerject.com

Synerject is Joint Venture of Continental Automotive Corporation (70%) and Orbital Corporation (30%).

GENERAL INFORMATION

LOCATION
Palazzo dei Congressi / Pisa Congress Centre

Via Matteotti, 1 - 56124 Pisa
Phone (0039) 050 598212 / (0039) 050 598213
Fax (0039) 050 598019

HOURS OF OPERATION
TOUR CHECK-IN
LOCATION: GALLERY
Monday, 17 November
07.30 – 08.30

CONFERENCE REGISTRATION
LOCATION: GALLERY
Monday, 17 November
14.00 – 17.00

Tuesday, 18 November
07.30 – 17.00

Wednesday, 19 November
07.30 – 17.00

Thursday, 20 November
07.30 – 13.30

EXHIBITION
LOCATION: GALLERY
Tuesday, 18 November
10.00 – 15.30

Wednesday, 19 November
10.00 – 15.30

Thursday, 20 November
10.30 – 12.30

EVENT OPERATIONS OFFICE
Room 10

COMPLIMENTARY WIFI
WIFIPALACON
USERNAME: sae20141
PASSWORD: 919ab6

Lanyards
Sponsored by

Lubrizol

SPECIAL EVENTS AND NETWORKING OPPORTUNITIES
LOCATION: GALLERY
Tuesday, 18 November
10.00 – 10.30
15.00 – 15.30

Wednesday, 19 November
10.00 – 10.30
15.00 – 15.30

Thursday, 20 November
10.00 – 10.30

NETWORKING LUNCH
LOCATION: GALLERY
Tuesday, 18 November
12.00 – 13.30

Wednesday, 19 November
12.00 – 13.30

Thursday, 20 November
11.30 – 12.30

WELCOME RECEPTION
Tuesday, 18 November

Hosted/Sponsored by

PIAGGIO GROUP

Piaggio Museum

Open to all Attendees

Tuesday, 18 November
18.30 – 19.30

Buses depart from Palazzo dei Congressi Gallery at 18.00

BANQUET
Wednesday, 19 November

Sponsored by

SYNERJECT
Riding the Future

Wednesday, 19 November
18.30 – 20.30

$90.00USD

Stazione Leopolda
Piazza Guerrazzi, 56215, Pisa
5 minute walk from the Congressi

Consent to Use of Images
Please note that photographs and video taken by or on behalf of SAE International of event activities and attendees shall be the property of SAE International. By registering for an SAE International event, you consent to the use by SAE International of any photograph or video in which you appear, including for promotional purposes, in print, digital, or other format, without notice or compensation to you.

invest in tuscany

YOUR KEY PUBLIC PARTNER
FOR BUSINESS IN TUSCANY

Invest in Tuscany is the programme promoted by the Region of Tuscany, in collaboration with its dedicated Economic Development Agency, Toscana Promozione, to **assist** investors in the **setting-up** and the **expansion** of their operations in Tuscany.

Invest in Tuscany provides a comprehensive support to foreign investors establishing businesses or planning equity investments in Tuscany.

It assists investors in creating and developing networks with Tuscan partners and facilitates the relations with the local authorities and public and private institutions.

The Tuscan Region (Investment Attraction Sector) coordinates activities of investment promotion and investor assistance and supports enterprises interested in making direct investments.

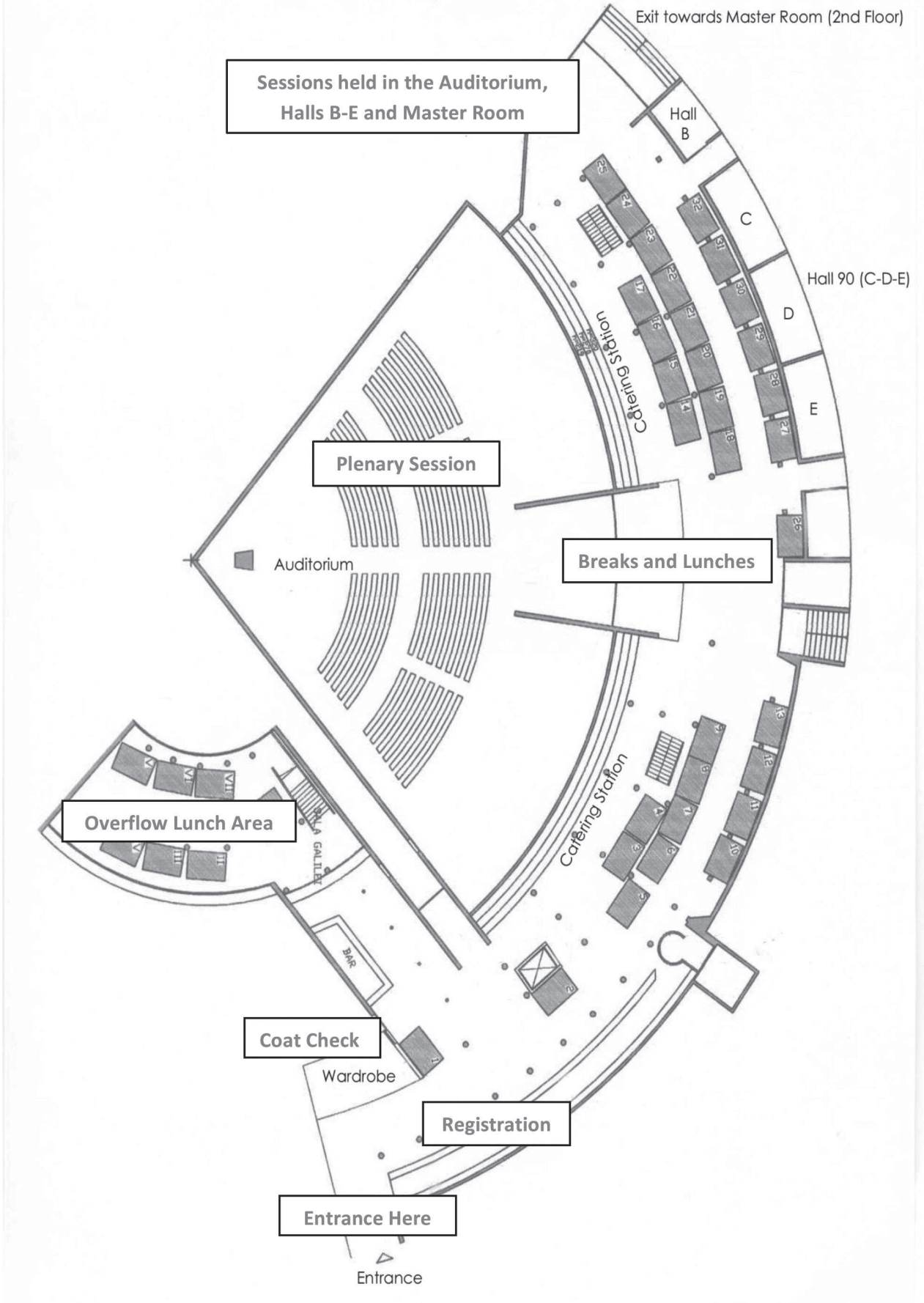
Toscana Promozione performs international promotion activities and offers expert consulting services in support of decisions to locate investment projects in Tuscany.

Tuscany's Provincial and Municipal Administrations offer a service of assistance connected with the local area and with harnessing their own points of excellence and locations, emphasising their advantages and skills.

fDi
EUROPEAN
CITIES & REGIONS
OF THE FUTURE 2014/15
BEST FDI STRATEGY
SOUTHERN EUROPEAN REGIONS
WINNER
TUSCANY

Invest in Tuscany - Regione Toscana - Directorate General for Presidency - Regional policies for attracting inward investments
Piazza Duomo, 10 - 50122 Florence - **Italy** - T +39 055 4384859 /+39 055 4382425 - F +39 055 4384135 - info@investintuscany.com - www.investintuscany.com

HOTEL FLOOR PLAN

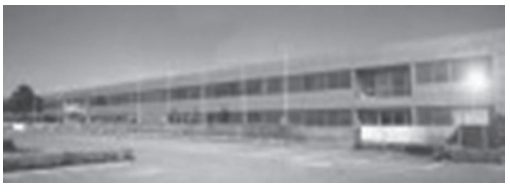


TECHNICAL TOURS OF CONTINENTAL, MAGNA, AND PIAGGIO

MONDAY
17 NOVEMBER

**PRE-REGISTRATION REQUIRED*
***NO CAMERAS OR CELL PHONES WILL BE PERMITTED.*

SOLD OUT
08:30 - 18:00
Registration Check-In 08:00 - 08:30 in the Gallery of the Palazzo dei Congressi
Buses depart Palazzo dei Congressi at 08:30
Lunch is provided.
Stop at Tower of Pisa during return trip.



The Piaggio Group is the largest European manufacturer of two-wheeled motor vehicles and on the world's leaders in its sector. The Group is also a major international player in the commercial vehicle market.

The Continental Pisa Plant, which consists of the two locations of San Piero and Fauglia, is focused on development and manufacturing of Gasoline Injectors and Fuel Systems for Automotive Engines.

Magna Closures Plant of Livorno, is focused on development, testing and manufacturing of vehicle closure systems.

TUESDAY
18 NOVEMBER

OPENING CEREMONY AND KEYNOTE ADDRESSES

AUDITORIUM
08.30 – 10.00

NAGESH MAVINAHALLY - 2014 SAE GENERAL COMMITTEE CHAIRPERSON

PRINCIPAL ENGINEER
MEGGITT CONTROL SYSTEMS

Dr. Nagesh Mavinahally obtained his PhD in I.C. Engines from Indian Institute of Technology, Madras, in 1992, MS from National Institute of Technology, Srinivasnagar, and BS from National Institute of Engineering, Mysore. He completed post-doctoral fellowship at the University of New Orleans in 1994. He has extensive experience in the design, development, and manufacturing of small engines and fuel injection system. He has led projects to develop engines ranging from 30cc two and four-stroke engines for hand held applications to large displacement natural gas Miller cycle engines for power generation.

Dr. Mavinahally has published technical papers in SAE and ASME Journals. He has many issued and pending patents. Over the years Dr. Mavinahally has developed alternative engine architectures including a cam shaft-less mono-shaft four-stroke engine, pump-less lubrication system, all attitude four-stroke engines, carburetors for stratified engine, stratified two-stroke engines, and mono-shaft extended expansion twin engine (Atkinson engine).

Dr. Mavinahally has held positions as Director of Advanced Product Development at Cummins, Director of Advanced Engine Technologies at Homelite, Founder/President of MavinTech, LLC., and is a Principal Engineer at MEGGITT.

Dr. Mavinahally has been involved with SETC since 1993.

KOJI YOSHIDA - 2014 JSAE GENERAL COMMITTEE REPRESENTATIVE

PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING,
COLLEGE OF SCIENCE AND TECHNOLOGY, NIHON UNIVERSITY.

1982 Bachelor degree of Mechanical Engineering, Nihon University
1984 Master Degree of Engineering, Nihon University
1995 Doctorate Degree of engineering, Nihon University
1987 Assistant of Mechanical Engineering course, Junior College of Nihon University
1993 Assistant of Mechanical Engineering, Nihon University
1996 Assistant professor of Mechanical Engineering, Nihon University
2000 Associate professor of Mechanical Engineering, Nihon University
2004 Professor in Department of Mechanical Engineering, Nihon University
Major Research Topics
Combustion characteristic in internal combustion engines

TUESDAY
18 NOVEMBER

WELCOMING REMARKS

MARIO MARCACCI - 2014 SETC CONFERENCE CHAIRPERSON

PIAGGIO & C. S.P.A.

Maurizio Marcacci graduated in Mechanical Engineering in 1976 in the University of Pisa. Employee immediately in Piaggio & C. S.p.A., dealing with Engines Development with roles of increasing responsibility. In 1981 become Manager of Prototype and Testing Dept., coordinating the activities of construction and development both of engines and vehicles. Under his guidance many families of Diesel and Gasoline ICE have been developed, some of them really innovative such as FAST Engine (first 50 cc 2-stroke direct injection), the first European 125 cc. 4 stroke scooter engine and others. In 1997 he acquired the responsability of the Engine Quality Dpt., introducing new methodologies of Quality Management. In 2001 he took over the structure of Engines R&D, including Engine Innovation. He had a leading role in the development of new scooter engine technology, such as electronic fuel injection and direct fuel injection.
In 2003 he assumed responsibility for the Engine Test and Development of the entire Piaggio Group; during this period, in collaboration with the Faculty of Engineering of Pisa, the prototypes of first hybrid scooter (parallel thermal-electric) in the world were developed. The product, known as Piaggio MP3 Hybrid 125 cc and 300 cc., went to the Market in 2009.
In 2007 he took the responsibility for Engines R&D of commercial vehicles of the Group, with the aim of developing new diesel engines for light trucks for the Global Market. Nowadays he's a Senior Consultant for Diesel Engines Business Unit.
Mr. Marcacci is a lecturer of the course "Design and Testing of Motorcycles" held by Piaggio for the Faculty of Engineering of Pisa. He's a member of the Technical Association (ATA) and the Society of Automotive Engineers (SAE). He has published many technical papers in SAE and ASME Journals and he's the Author of many issued and pending patents in very different fields of Engines and Vehicle technology.

TUESDAY
18 NOVEMBER

WELCOMING REMARKS – REGION OF TUSCANY

STEFANO GIOVANNELLI

MANAGING DIRECTOR OF TOSCANA PROMOTION
ECONOMIC PROMOTION AGENCY OF THE TUSCANY REGION

Stefano Giovannelli holds a degree cum laude in Electronics obtained from the University of Florence in April 1978, with a focus on Systems Theory and Computer Science.

After a few years within the Italian industrial and banking private sector, he joined the Industrial Studies Division of the United Nations Industrial Development Organization in January 1983.

In January 1994 he was appointed Director of the Organization's Investment and Technology Promotion Service, a position he kept till April 2004. In such a capacity he developed and managed the investment promotion network of UNIDO in the Mediterranean, establishing offices in Lebanon, Jordan, Egypt, Tunisia and Morocco.

From the year 2000 till 2003 he was also appointed Special Representative of the UNIDO's Director General before the European Commission in Brussels and he conducted the negotiations on UNIDO's strategic partnership with the Commission. From 2005 he assisted the Director General of UNIDO in developing cooperation programmes with International Financing Institutions and mobilizing funds for the Organization's programmes.

In 2009 he left the United Nations to assume the position of Managing Director of the Specialised Economic Promotion Agency of the Regional Government of Tuscany, which has the mandate to promote the exports of Tuscany abroad, as well as that of attracting foreign investment.

Under his guidance, the Agency developed new cooperation programmes with selected target countries, such as China and Vietnam, and launched promotional campaigns for traditional productive sectors such as wine and textiles, as well as for innovative sectors such as ship building, health and life sciences, new technologies.

In 1999 he held the course "Managing globalization" at the Johns Hopkins University Center in Bologna and from 2001 till 2008 was contract professor with the Faculty of Economics of the University of Ferrara where he taught the course 'International Organizations'.

Between year 2002 and 2004 he also collaborated with the School of Public Affairs of the University of Maryland to test new mechanisms to stimulate institutional changes, enhancing the impact of technical assistance programmes, on the basis of a set of incentives and private-public feedbacks.

In 2006, together with Prof. Di Tommaso, he published for Franco Angeli the book "Nazioni Unite e Sviluppo Industriale" on the role and impact of United Nations with respect to industrial development.

He has worked in many countries in Asia, in the Mediterranean and in Africa and has been a speaker in many international conferences.

He is an expert on investment promotion, industrial cooperation and development of SME systems, his experience encompassing enterprise level assistance, business development and financial analysis as well as institutional building.

SAE KEYNOTE ADDRESS

LUCA MARMORINI

CONSULTANT

Dr. Luca Marmorini graduated in Mechanical Engineering in 1987 at the University of Pisa. After 16 months in the Italian Navy Engineer Corp, he started his PhD studies. He became Doctor in Mechanical Engineering at the University of Pisa. Part of his research work was performed in the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology. Luca joined the Ferrari Racing Department in 1990. During this period he covered various positions. In 1992 he was appointed Engine Calculation Leader. In 1995 became Project Leader of the last V12 engine. In 1998 he was appointed Manager in charge of Research and Innovation in the Engine Department. In 1999 Luca joined Toyota Motorsport as Project Leader. During his stay at Toyota in Germany, Luca became Technical Director and Senior General Manager for Engine and Electronics. His duties covered the complete Engine and Electronics activities from Design and

Development to Dyno and Track Application. He coordinated the complete design and development of all the engine evolutions used by Toyota in the Formula 1 Championship (V12, V10 and V8 architectures). In 2009 Luca returned to Ferrari as Engine and Electronics Director. He has developed the last V10 and the Kers System used by the Scuderia till 2013. Starting from 2011 he has led the complete activity that has brought to the development of the new V6 turbo power-train and ERS (energy recovery system) that is currently used in the 2014 Formula 1 Championship. He has been a lecturer at various Universities and an invited key-note speaker in several International Congresses both in Europe and in the USA. For his achievements in Motorsport Luca has received several national and international awards. In 2013 Luca was appointed Honorary Adjunct Professor in Automotive Engineering in the School of Aerospace, Mechanical and Manufacturing Engineering at RMIT (Royal Melbourne Institute of Technology). He has recently separated from Ferrari and is pursuing his own interests.

JSAE KEYNOTE ADDRESS

TOSHIYUKI TANEDA

SENIOR MANAGER, OEM R&D
ENGINE ENGINEERING DEPARTMENT

KUBOTA CORPORATION

Mr. Taneda graduated from the Department of Mechanical Engineering of Osaka University in 1989. He joined Kubota Corporation in 1989 and started his career as a research and development regarding industrial engines. He worked in Kubota Europe S.A.S. as a Pan-European technical director from 1999 to 2005. There, he faced with the technical issues of industrial engines on a global scale and provided solutions to make OEM customer's machines innovative from engine supplier's point of view. Now, he is responsible for OEM engine R&D in Kubota and focuses on the futuristic view of industrial engines.

WELCOME RECEPTION

TUESDAY, 18 NOVEMBER

Hosted/Sponsored by
Piaggio C.s.p.A.

PIAGGIO GROUP

PIAGGIO MUSEUM
Open to all Attendees
Tuesday, 18 November
18.30 – 19.30

Buses depart from Palazzo dei Congressi Gallery at 18.00

WEDNESDAY
19 NOVEMBER

PLENARY PANEL DISCUSSION - MITIGATION OF GHG EMISSIONS
AUDITORIUM
08.30 – 10.00

ROBERTO GENTILI - MODERATOR
PROFESSOR
UNIVERSITA DEGLI STUDI DI PISA

Roberto Gentili graduated in Mechanical Engineering from the University of Pisa in 1974. In 1976 and 1977 he spent his first two years of research activity at the University of Florence. In 1978 he joined the University of Pisa, where he is teachings Fluid Machines and Internal Combustion Engines. In very large prevalence the scientific activity of Roberto Gentili regards engines for land vehicles (cars and motorcycles) and is aimed at developing solutions that are often original and involve a multidisciplinary approach, thanks to the contribution of specialists of other fields. A number of studies takes advantage of the cooperation with prestigious Italian and foreign research institutes and universities.
It is worth mentioning the conception and implementation of an original stratified scavenging system for carburetted two-stroke engines, which proved to reduce unburned hydrocarbon emissions and specific fuel consumption and which today is widely employed in small engines for agricultural use (chainsaws, lawnmowers, etc.), various solutions of direct injection for small two-stroke engines, an original system of low-pressure hydrogen direct injection, the use of ammonia plus hydrogen as a fuel in S.I. and a low-emission compression-ignition engine. More than one hundred papers, published on proceedings of conferences and scientific reviews, as well as several patents, prove this activity, that in addition finds acknowledgment in the roles of chairman or organiser that Gentili had in several national and international conferences, besides various invitations to meetings and conventions on I.C. engines and motor vehicles. Several times Gentili has coordinated research groups for research supported by CNR (Italian National Research Council), by Pisa University, by Italian Ministries and by agreements with industrial companies. He was member of several commissions for university contests. In the three-year period 1984-'86 he served on CUN (National University Council) 09 Advisory Committee for the assignment of M.P.I. (Public Instruction Ministry) 40% funds for scientific research. Since 1994 he has been SAE member. He is currently Vice President of ATA (Technical Association of Automobile) Tuscany, which he chaired from 2009 to 2012 and on the guiding board of which he has been serving for over twenty years.

WEDNESDAY
19 NOVEMBER

PIERRE DURET - PANELIST

DIRECTOR, CENTER FOR "ENGINES & UTILIZATION OF HYDROCARBONS"
IFP SCHOOL, FRANCE

Direct fuel injection two-stroke engines for range extender applications

Pierre DURET was graduated in 1981 from the French Engineer School "Ecole Centrale de Paris" and started his career at IFPEN (IFP New Energy) in 1982 as research engineer responsible of the study and development of direct fuel injected two-stroke engines.
In 1987, he became Projects leader "Two-Stroke Engines" at IFPEN, responsible of a R&D group working on several projects of design and development of low emissions high fuel economy small two-stroke engines and gasoline controlled auto-ignition engines for world-wide customers.
In 1996, he joined the management of the IFPEN engines R&D as Assistant Director and then in 2011 as Deputy Director of the "Engines & Energy" Technology Business Unit. During this period he sometimes acted as expert for French Public authorities and for the European Commission in internal combustion engines and also coordinated several EU Projects, Network of Excellence and International Consortium Projects driven by IFPEN.
In September 2003, he moved to the IFP School as Director of the Center for "Engines and Utilization of Hydrocarbons", still his current position.
In parallel, since May 2005, he is also the Chairman of the "Powertrain" Steering Committee of the French Society of Automotive Engineers (SIA), especially involved in the organization of several International Congresses on Powertrains.
During his career, P. Duret applied for more than 30 families of granted patents and published more than 50 international papers on engines and powertrains for automotive and other applications. He got several "Best paper" Awards including two at SETC 1993 in Pisa and 2002 in Kyoto.

WEDNESDAY
19 NOVEMBER

HELMUT EICHLSEDER - PANELIST

PROFESSOR
GRAZ UNIVERSITY

Mitigation of GHG Emissions

Helmut Eichlseder was born in Steyr, Austria. He received the Master's degree in mechanical engineering in 1984 and the Ph.D. degree in 1989, both from Graz University of Technology, Austria.

After he finished his Master, he started as a calculation engineer in AVL Graz and went then back to University working on two stroke engines. After finishing the Ph.D., he joined BMW's Diesel Development in Steyr, Austria, in 1990, working then in pre- and series development where he was responsible for performance, fuel efficiency and emissions of a new DI Diesel engine family of 4, 6, and 8 cylinder engines until start of production. From 1997 to 2001, he was responsible for Alternative Combustion Systems and DI Gasoline Engines in the Gasoline development unit of BMW in Munich. Products were the V12 Gasoline DI engine for the BMW 760i and the Rolls Royce Phantom.

In April 2001, he became Professor for Internal Combustion Engines at TU Graz. His research interests include combustion system development, alternative fuels, emission reduction especially for small, passenger car and truck eingines.

The results were published in some books (Gasoline Engine Technology, Hydrogen in Vehicle Technology), book chapters (Gasoline Direct Injection, ICE Basics,..), and more than 150 articles.

Since October 2002 Prof. Eichlseder is head of the Institute for Internal Combustion Engines and Thermodynamics at Graz Technical University. The research activities are focussed in 6 areas covering Engine Design and Layout especially for small Engines, Combustion Systems, Large Engines, Emissions, Traffic and Air Quality, and Thermodynamics with an overall staff of 140 employees.

A.RAMESH - PANELIST

PROFESSOR OF MECHANICAL ENGINEERING
NDIAN INSTITUTE OF TECHNOLOGY MADRAS

Dr. A. Ramesh is currently a Professor of Mechanical Engineering at the Indian Institute of Technology Madras (IIT Madras). He did his Ph.D in internal combustion engines in IIT Madras in 1990 and then worked for a year as Assistant Manager in the engine R & D in Bharat Earth Movers Limited. Then he joined the faculty of mechanical engineering in IIT Delhi as an Assistant Professor and subsequently joined IIT Madras. He did his post doctoral research work in Ecole Des Mines De Nantes, France. Dr. A. Ramesh has published over 125 research papers in International and national journals and conferences. His main research interests include gasoline direct injection, homogeneous charge compression ignition, engine management, engine instrumentation, new and innovative engine designs and alternative fuels. Much of his work has been directed towards developing cost effective solutions for the improvement of small engines. He has guided several students for their doctoral and masters degrees. Several of his students have received best project awards during their masters program. Dr. Ramesh has undertaken many consultancy projects for leading automotive industries. He has also taken up large government sponsored projects in areas of interest to Indian Automotive industries. His work has culminated in several innovative designs and components for engines. He has filed nine patents of which some are with automotive industries. He has coordinated a User Oriented M.Tech Program on Automotive Engine Technology in IIT Madras, which was exclusively developed and conducted for several years for practicing engineers from leading Automotive Industries. He has also conducted several tailor made short term courses for industries. He has obtained awards for teaching, guiding students and for best paper presentations. Dr. Ramesh has been a member of several governmental committees looking into funded projects on alternative fuels, hydrogen energy, instrumentation, engine development and skill development. He has also served in the board of studies of several leading educational institutions.

WEDNESDAY
19 NOVEMBER

SETC 2014 BANQUET
18.30 – 21.30

STAZIONE LEOPOLDA
PIAZZA GUERRAZZI, 56125 PISA

5 minute walk from PALAZZO dei CONGRESSI

Cost Per Person - $90 USD

Sponsored by

SYNERJECT
Riding the Future

FEATURING ENTERTAINMENT FROM:
Philharmonic Society of Pontedera

Compliments of

MOVET

THURSDAY
20 NOVEMBER

CLOSING CEREMONY

AUDITORIUM
12.30 - 13.30

ROBERT KEE - SAE TECHNICAL COMMITTEE CHAIRPERSON

SENIOR LECTURER

Queen's University Belfast

Dr Kee graduated from QUB in with a BSc 1981 and was awarded a PhD in 1989 for research work on stratified charge two-stroke engines. This research was jointly funded by Mercury Marine, USA and Yamaha, Japan. On completion of the research, Dr Kee was appointed to the position of Visiting Researcher at Yamaha for a 1 year period, during which he worked on fuel economy and emissions improvement of two-stroke outboard motors.

In 1990, Dr Kee returned to post-doctoral research position at QUB and was appointed to a lectureship in 1991. His research has focused on the testing and simulation of engines under transient conditions, coupled 1D and 3D CFD simulation of unsteady gas flow, fast response temperature measurement, controlled autoignition in internal combustion engines, and simulation of hybrid vehicles. Dr Kee is an Associate Editor of the SAE International Journal of Engines, and a 2005 recipient of the SAE Forest R. McFarland Award. He has published over 50 technical articles on engine research.

TADAO OKAZAKI- JSAE TECHNICAL COMMITTEE CHAIRPERSON

DEPUTY MANAGER

FUNDAMENTAL AND ENVIRONMENTAL R&D

ENGINE ENGINEERING DEPT

Kubota Corporation

Mr. Okazaki graduated from the Department of Mechanical Engineering of Osaka University in 1982.

He joined Kubota Corporation in 1982 and started his career in Engineering Development Laboratory regarding fundamental study of industrial engines and steel plant control. He moved to Engine Engineering Department in 1986. He studied in Mechanical Engineering Department of UMIST (Now, Manchester University) in UK from 1994 to 1996 and got MSc degree. After that, he went back to Kubota and started his work again.

His major subject is numerical analyses and NVH technologies concerning about industrial engines, especially CFD approach for in-cylinder behavior.

Now, he is responsible for numerical approaches and fundamental measurement technologies for industrial engines and struggling to improve their performance day after day.

STUDENT POSTER AWARDS

BEST PAPER AND BEST PRESENTATION AWARDS

2015 SETC ANNOUNCEMENTS

TAKESHI ARAKI, KAWASAKI HEAVY INDUSTRIES LTD AND CHAIRPERSON OF SETC 2015 ORGANIZNG COMMITTEE

TECHNICAL SESSIONS WEEK AT A GLANCE BY TECHNOLOGY

	TUE		WED		THUR			
	AM	PM	AM	PM	AM	PM	Room No.	Page No.
Advanced Combustion (Part 1 of 2) (SETC1)	-	✔	-	-	-	-	Hall 90E	24
Advanced Combustion (Part 2 of 2) (SETC1)	-	✔	-	-	-	-	Hall 90E	25
Alternative Fuels (Part 1 of 2) (SETC2)	-	✔	-	-	-	-	Hall 90D	24
Alternative Fuels (Part 2 of 2) (SETC2)	-	✔	-	-	-	-	Hall 90D	25
Collegiate Events (SETC3)	-	✔	-	-	-	-	Master Room	24
Diesel Engine (Part 1 of 4) (SETC5)	-	-	-	✔	-	-	Hall 90D	30
Diesel Engine (Part 2 of 4) (SETC5)	-	-	-	✔	-	-	Hall 90D	31
Diesel Engine (Part 3 of 4) (SETC5)	-	-	-	-	✔	-	Hall 90D	33
Diesel Engine (Part 4 of 4) (SETC5)	-	-	-	-	✔	-	Hall 90D	34
Emissions (Part 1 of 3) (SETC6)	-	-	-	✔	-	-	Auditorium	31
Emissions (Part 2 of 3) (SETC6)	-	-	-	-	✔	-	Auditorium	33
Emissions (Part 3 of 3) (SETC6)	-	-	-	-	✔	-	Auditorium	34
Engine Components (Part 1 of 2) (SETC8)	-	-	-	-	✔	-	Hall 90E	33
Engine Components (Part 2 of 2) (SETC8)	-	-	-	-	✔	-	Hall 90E	34
Engine Controls (Part 1 of 5) (SETC9)	✔	-	-	-	-	-	Auditorium	22
Engine Controls (Part 2 of 5) (SETC9)	-	✔	-	-	-	-	Auditorium	24
Engine Controls (Part 3 of 5) (SETC9)	-	✔	-	-	-	-	Auditorium	27
Engine Controls (Part 4 of 5) (SETC9)	-	-	✔	-	-	-	Auditorium	28
Engine Controls (Part 5 of 5) (SETC9)	-	-	-	✔	-	-	Auditorium	30
Engine Technology (Part 1 of 4) (SETC10)	-	-	✔	-	-	-	Hall 90C	28
Engine Technology (Part 2 of 4) (SETC10)	-	-	-	✔	-	-	Hall 90C	30
Engine Technology (Part 3 of 4) (SETC10)	-	-	-	✔	-	-	Hall 90C	31
Engine Technology (Part 4 of 4) (SETC10)	-	-	-	-	✔	-	Hall 90C	33
Fuel Supply Systems (SETC11)	✔	-	-	-	-	-	Hall 90E	22
HCCI (Part 1 of 2) (SETC12)	-	-	-	✔	-	-	Hall 90B	30
HCCI (Part 2 of 2) (SETC12)	-	-	-	✔	-	-	Hall 90B	32
Hybrids, Electric Drives, Fuel Cells (SETC13)	✔	-	-	-	-	-	Hall 90D	22
Lubricants (SETC14)	-	-	-	-	✔	-	Hall 90C	35
Materials (SETC15)	-	✔	-	-	-	-	Hall 90C	27
Measurement & Simulation (Part 1 of 4) (SETC4)	✔	-	-	-	-	-	Hall 90B	23
Measurement & Simulation (Part 2 of 4) (SETC4)	-	✔	-	-	-	-	Hall 90B	25
Measurement & Simulation (Part 3 of 4) (SETC4)	-	✔	-	-	-	-	Hall 90B	27
Measurement & Simulation (Part 4 of 4) (SETC4)	-	-	✔	-	-	-	Hall 90B	28
NVH Technology (Part 1 of 2) (SETC16)	-	-	-	-	✔	-	Hall 90B	34
NVH Technology (Part 2 of 2) (SETC16)	-	-	-	-	✔	-	Hall 90B	35
Plenary Panel: Mitigation of GHG Emission (PANEL)	-	-	✔	-	-	-	Auditorium	28
SETC Closing Ceremony (PLENARY)	-	-	-	-	-	✔	Auditorium	35
SETC Opening Ceremony and Plenary Session (PLENARY)	✔	-	-	-	-	-	Auditorium	22
Two Stroke Engines (Part 1 of 2) (SETC17)	✔	-	-	-	-	-	Hall 90C	23
Two Stroke Engines (Part 2 of 2) (SETC17)	-	✔	-	-	-	-	Hall 90C	25
Vehicle Components (SETC19)	-	-	✔	-	-	-	Hall 90D	29
Vehicle Dynamics & Safety (Part 1 of 3) (SETC18)	-	-	✔	-	-	-	Hall 90E	29
Vehicle Dynamics & Safety (Part 2 of 3) (SETC18)	-	-	-	✔	-	-	Hall 90E	31
Vehicle Dynamics & Safety (Part 3 of 3) (SETC18)	-	-	-	✔	-	-	Hall 90E	32

The purpose of this session is to provide an open exchange of ideas. Remarks made by participants or members of the audience cannot be quoted or attributed to the individual or their company unless express permission has been granted by the individual and their company. Any record of remarks, discussion, or photographs may not be used unless express permission has been granted by the individual and their company.

TUESDAY, NOVEMBER 18 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Auditorium	Auditorium	Hall 90E	Hall 90D
	SETC Opening Ceremony and Plenary Session (PLENARY) 08:30 - 10:00 Organizers: Robert Kee; Tadao Okazaki, Kubota Corp. Chairpersons: Nagesh Mavinahally, Meggitt Control Systems Panelists: Maurizio Marcacci, Piaggio & C SpA Luca Marmorini, Consultant, Formerly Ferrari Spa Nagesh Mavinahally, Meggitt Control Systems Toshiyuki Taneda, Kubota Corp. Koji Yoshida, Nihon University	**Engine Controls (Part 1 of 5) (SETC9)** Papers in this session are related to design, development and testing of new or innovative electronic controls or control systems for internal combustion engines. Topics may include hardware, software and algorithm/function innovations as well as the associated sensors or actuators employed in the control system. Applications may range from very simple systems for 1-cylinder engines to more complex systems for high-performance or multi-cylinder engines. 10:30 - 12:00 Organizers: Laurent Fabre, Synerject SAS; Tobias Kallerhoff, Robert Bosch GmbH; Yutaka Nitta, Suzuki Motor Corp.; Thorsten Raatz, Robert Bosch GmbH; Tony Szczotka, Robert Bosch LLC Chairpersons: Tony Szczotka, Robert Bosch, LLC; Yutaka Nitta, Suzuki Motor Corp.	**Fuel Supply Systems (SETC11)** 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. 10:30 - 11:30 Organizers: Francois Brun, Synerject SAS; Hiromi Deguchi, Suzuki Motor Corp.; Peter Kaub, Re-Sol LLC; Daniel Nehmer, John Deere & Co. Chairpersons: Francois Brun, Synerject SAS; Roland Kirchberger, Graz University of Technology; Tatsuya Kuboyama, Chiba Univ.	**Hybrids, Electric Drives, Fuel Cells (SETC13)** This session will discuss hybrid and EV Applications 10:30 - 12:00 Organizers: Glenn Bower, University Of Wisconsin Madison; Luca Carmignani, Piaggio & C SpA; Jay Meldrum, Michigan Technological Univ.; Yasuyuki Muramatsu, Yamaha Motor Co., Ltd. Chairpersons: Glenn Bower, University of Wisconsin-Madison; Tadao Okazaki, Kubota Corp.
10:30		Online Engine Speed based Altitude Adaptation of Air Charge and Limp Home for Two-Wheelers **(2014-32-0067/20149067)** Henning Heikes, Christian Steinbrecher, Bastian Reineke, Jürgen Berkemer, Thorsten Raatz, Wolfgang Fischer, Robert Bosch GmbH	An Advanced Fuel Supply Unit for Single Cylinder Gas Engines **(2014-32-0040/20149040)** John Walters, Francois Brun, Synerject LLC	A Study of Electric Motorcycle **(2014-32-0012/20149012)** Yoshimoto Matsuda, Kawasaki Heavy Industries, Ltd.
11:00		A Method to Increase Ignition Duration and Spark Energy **(2014-32-0068/20149068)** Klaus Stuhlmüller, Denis Lenz, PRÜFREX Engineering e Motion GmbH & Co.; Sebastian Hook, PRUFREX Innovative Power Products GmbH; Dirk Hohenhaus, Michael Schwarz, PRÜFREX Engineering e Motion GmbH & Co.	Spray Characterization of a Single-Hole Gasoline Injector under Flash Boiling Conditions **(2014-32-0041/20149041)** Luigi Allocca, Alessandro Montanaro, Istituto Motori CNR; Rita Di Gioia, Giovanni Bonandrini, Magneti Marelli Powertrain SPA	Numerical Evaluation of an Electric Turbo Compound for SI Engines **(2014-32-0013/20149013)** Stefano Frigo, Gianluca Pasini, Università di Pisa; Silvia Marelli, Università Degli Studi di Genova; Giovanni Lutzemberger, Università di Pisa; Massimo Capobianco, Università Degli Studi di Genova; Paolo Bolognesi, Roberto Gentili, Massimo Ceraolo, Università di Pisa
11:30		Evaluation of a Novel Low-Cost, Low-Power Narrow-Band Oxygen Sensor on a 2014 Honda Grom 125E (125 cc) Motorcycle Using a Chassis Dynamometer (3 of 3) **(2014-32-0069/20149069)** Ken Fosaaen, Kerdea Technologies		Control of a Low Cost Range Extender for L1e Class PHEV Two-Wheelers **(2014-32-0014/20149014)** Hans-Juergen Schacht, Manuel Leibetseder, Niko Bretterklieber, Stephan Schmidt, Roland Kirchberger, Graz University of Technology
		The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00455, and also individually. To purchase visit collections.sae.org		The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org

TUESDAY, NOVEMBER 18 - MORNING Technical and Business Sessions		
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**	
	Hall 90B	**Hall 90C**
	Measurement & Simulation (Part 1 of 4) (SETC4) The session is associated with engine and vehicle simulation tasks and their related measurements. Simulation and measurement methodology as well as the simulation and measurement application on development tasks will find a place within the session. 10:30 - 12:00 Organizers: Stephan Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Shigeru Fujii, Yamaha Motor Co., Ltd. Chairpersons: Giovanni Ferrara, Univ. of Florence; Shigeru Fujii, Yamaha Motor Co., Ltd.; Stephan Schmidt, Graz University of Technology	**Two Stroke Engines (Part 1 of 2) (SETC17)** This session contains manuscripts focused on two-stroke engines. Topics such as emissions, performance, and efficiency will be explored. Advanced combustion control, direct fuel injection, simulation models and experimental results will be presented. 10:30 - 12:00 Organizers: Brian J. Callahan, Achates Power Inc.; Giovanni Ferrara, Univ. of Florence; Roberto Gentili, Universita degli Studi di Pisa; Scott A. Miers, Michigan Technological Univ.; Tomoo Shiozaki, Honda R&D Co., Ltd. Chairpersons: Luca Carmignani, Piaggio & C SpA; Tomoo Shiozaki, Honda R&D Co., Ltd.
10:30	Multi-Objective Optimization of the Timing System on a Small 2-Wheeler Engine (SOHC): Methodology and Case Study **(2014-32-0055/20149055)** Francesco Maiani, Alessio Sisi, Walther Leardini, Piaggio & C SpA	Comparison of In-Cylinder Pressure Measurement Methods in a Small Spark Ignition Engine **(2014-32-0007/20149007)** Joseph K. Ausserer, Air Force Institute of Technology; Alexander K. Rowton, Air Force Research Laboratory; Keith D. Grinstead, Innovative Scientific Solutions Inc; Paul J. Litke, Air Force Research Laboratory; Marc D. Polanka, Air Force Institute of Technology
11:00	Improvement of the Specific Fuel Consumption at Partial Load in SI Engines by Design Strategies based on High Compression Ratio **(2014-32-0060/20149060)** Giovanni Vichi, Luca Romani, Giovanni Ferrara, Univ. of Florence; Luca Carmignani, Francesco Maiani, Piaggio & C SpA	Air Cooled 50cm^3 Scooter Euro 4 Application of the Two-Stroke LPDI Technology **(2014-32-0008/20149008)** Stefan Krimplstätter, Franz Winkler, Roland Oswald, Roland Kirchberger, Graz University of Technology
11:30	Vibro-Acoustic Modeling and Validation of Fuel Rails for GDI Wet Systems **(2014-32-0059/20149059)** Antonio Agresta, Continental Automotive Italy S.p.A.; Francesca Di Puccio, Universita degli Studi di Pisa; Paola Forte, University of Pisa; Gabriele Benigni, Universita degli Studi di Pisa	System Optimization for a 2-Stroke Diesel Engine with a Turbo Super Configuration Supporting Fuel Economy Improvement of Next Generation Engines **(2014-32-0011/20149011)** Pavel Brynych, Jan Macek, Czech Technical Univ.; Pascal Tribotte, Renault; Gaetano De Paola, Cyprien Ternel, IFP Energies Nouvelles
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00453, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org

Pens and Notepads
sponsored by Intertek

Intertek

Valued Quality. Delivered.

TUESDAY, NOVEMBER 18 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90E	**Hall 90D**	**Master Room**	**Auditorium**
	Advanced Combustion (Part 1 of 2) (SETC1) This session focuses on advanced combustion technologies in both 4-stroke and 2-stroke engines. The scope of topics includes studies of mixture formation, dilution effects, ignition, abnormal combustion, engine efficiency, flame propagation, and emissions formation. 13:30 - 15:00 Organizers: William P. Attard; Roberto Gentili, Universita degli Studi di Pisa; Jaal B. Ghandhi, Univ. of Wisconsin Madison; Simona Silvia Merola, Istituto Motori CNR; Koji Yoshida Chairpersons: Adrian Irimescu, Istituto Motori CNR; Koji Yoshida, Nihon University	**Alternative Fuels (Part 1 of 2) (SETC2)** This session includes papers focused on the gaseous and particulate emissions performance from operating small engines, both diesel and gasoline on oxygenated fuel blends. 13:30 - 15:00 Organizers: Simona Merola, Istituto Motori CNR; Takashi Mitome, Suzuki Motor Corp.; Hirohi Omote, LMEA/Yanmar Co.,LTD.; Paul Richards Chairpersons: Simona Merola, Istituto Motori CNR; Tohru Nakazono, Yanmar Co.,LTD.	**Collegiate Events (SETC3)** Papers in this session discuss innovations regarding entries in the SAE Collegiate Design Series (CDS) events. This year two papers describe Formula SAE innovations. The first discusses a novel approach to improved fuel economy using part load mapping. The second describes a highly integrated parallel hybrid design for the Formula Hybrid competition. 13:30 - 14:30 Organizers: Geoffrey McCullough, Queen's Univ. of Belfast; Takashi Mitome, Suzuki Motor Corp. Chairpersons: Roland Kirchberger, Graz University of Technology; Takashi Mitome, Suzuki Motor Corp.	**Engine Controls (Part 2 of 5) (SETC9)** Papers in this session are related to design, development and testing of new or innovative electronic controls or control systems for internal combustion engines. Topics may include hardware, software and algorithm/function innovations as well as the associated sensors or actuators employed in the control system. Applications may range from very simple systems for 1-cylinder engines to more complex systems for high-performance or multi-cylinder engines. 13:30 - 15:00 Organizers: Laurent Fabre, Synerject SAS; Tobias Kallerhoff, Robert Bosch GmbH; Yutaka Nitta, Suzuki Motor Corp.; Thorsten Raatz, Robert Bosch GmbH; Tony Szczotka, Robert Bosch LLC Chairpersons: Tony Szczotka, Robert Bosch, LLC; Yutaka Nitta, Suzuki Motor Corp.
13:30	Abnormal Combustion Induced by Combustion Chamber Deposits Derived from Engine Oil Additives in a Spark-Ignited Engine **(2014-32-0091/20149091)** Kazushi Tamura, Toshimasa Utaka, Hideki Kamano, Idemitsu Kosan Co., Ltd.; Norikuni Hayakawa, Tomomi Miyasaka, Takashi Ishino, Akira Iijima, Hideo Shoji, Nihon University Graduate School	Gaseous and Particulate Emissions Using Isobutanol-Extended Fuel in Recreational Marine Two-Stroke and Four-Stroke Engines **(2014-32-0087/20149087)** Jeff R. Wasil, Bombardier Recreational Product Inc.; Thomas Wallner, Argonne National Laboratory	Torque Vectoring of a Formula SAE through Semi Active Differential Control **(2014-32-0088/20149088)** Claudio Annicchiarico, Renzo Capitani, Universita degli Studi di Firenze	Model-Based Combustion Control of a HCCI Engine using External EGR and the Exhaust Rebreathed **(2014-32-0079/20149079)** Yuta Kugimachi, Yusuke Nakamura, Norimasa Iida, Keio Univ
14:00	A Study on the Effect of a Calcium-Based Engine Oil Additive on Abnormal SI Engine Combustion **(2014-32-0092/20149092)** Tomomi Miyasaka, Kenta Miura, Norikuni Hayakawa, Takashi Ishino, Akira Iijima, Hideo Shoji, Nihon University Graduate School; Kazushi Tamura, Toshimasa Utaka, Hideki Kamano, Idemitsu Kosan Co. Ltd.	Diesel Combustion Characteristics of Palm Oil Methyl Ester with 1-Butanol **(2014-32-0085/20149085)** Takeshi Otaka, Kazuyo Fushimi, Eiji Kinoshita, Kagoshima Univ.; Yasufumi Yoshimoto, Niigata Inst. of Technology	Development of a Miller Cycle Powersports Engine **(2014-32-0090/20149090)** Jeffrey Blair, Glenn Bower, Univ. of Wisconsin	Efficiency Optimization Using a Power-Guided Engine Control for Management of Thermal-and Mechanical Demands Using the Example of a Micro Combined Heat and Power Unit **(2014-32-0080/20149080)** Jens Steinmill, Ralf Struzyna, Ruhr-University Bochum - LVM
14:30	A Study on the Effect of Zn- and Mo-Based Engine Oil Additives on Abnormal SI Engine Combustion using In-Cylinder Combustion Visualization **(2014-32-0096/20149096)** Norikuni Hayakawa, Kenta Miura, Tomomi Miyasaka, Takashi Ishino, Akira Iijima, Hideo Shoji, Nihon University Graduate School; Kazushi Tamura, Toshimasa Utaka, Hideki Kamano, Idemitsu Kosan Co. Ltd.	Diesel Combustion Characteristics of Coconut Oil Ester Fuels **(2014-32-0084/20149084)** Eiji Kinoshita, Akira Itakura, Takeshi Otaka, Kenta Koide, Kagoshima Univ.; Yasufumi Yoshimoto, Niigata Inst of Technology; Thet Myo, UNIDO Myanmar		Air Fuel Ratio Control for V2 Engine with On-Line System Identification of Fuel Film Dynamics **(2014-32-0078/20149078)** Bo-Chiuan Chen, Yuh-Yih Wu, Wen-Han Tsai, Hsien-Chi Tsai, Huang-Min Lin, Yao-Chung Liang, National Taipei University of Technology
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org		The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00455, and also individually. To purchase visit collections.sae.org

TUESDAY, NOVEMBER 18 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90B	**Hall 90C**	**Hall 90E**	**Hall 90D**
	Measurement & Simulation (Part 2 of 4) (SETC4) The session is associated with engine and vehicle simulation tasks and their related measurements. Simulation and measurement methodology as well as the simulation and measurement application on development tasks will find a place within the session. 13:30 - 15:00 Organizers: Stephan Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Shigeru Fujii, Yamaha Motor Co., Ltd. Chairpersons: Giovanni Ferrara, Univ of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Stephan Schmidt, Graz University of Technology	**Two Stroke Engines (Part 2 of 2) (SETC17)** This session contains manuscripts focused on two-stroke engines. Topics such as emissions, performance, and efficiency will be explored. Advanced combustion control, direct fuel injection, simulation models and experimental results will be presented. 13:30 - 15:00 Organizers: Brian J. Callahan, Achates Power Inc.; Giovanni Ferrara, Univ. of Florence; Roberto Gentili, Universita degli Studi di Pisa; Scott A. Miers, Michigan Technological Univ.; Tomoo Shiozaki, Honda R&D Co., Ltd. Chairpersons: Roberto Gentili, Universita degli Studi di Pisa; Akira Iijima, Nihon University	**Advanced Combustion (Part 2 of 2) (SETC1)** This session focuses on advanced combustion technologies in both 4-stroke and 2-stroke engines. The scope of topics includes studies of mixture formation, dilution effects, ignition, abnormal combustion, engine efficiency, flame propagation, and emissions formation. 15:30 - 17:30 Organizers: William P. Attard; Roberto Gentili, Universita degli Studi di Pisa; Jaal B. Ghandhi, Univ. of Wisconsin Madison; Simona Silvia Merola, Istituto Motori CNR; Koji Yoshida Chairpersons: Adrian Irimescu, Istituto Motori CNR; Koji Yoshida, Nihon University	**Alternative Fuels (Part 2 of 2) (SETC2)** This session includes papers focused on aspects of operating small engines on non-petroleum based fuels or non-conventional blends of fuels. In particular this session looks at metrics such as spray behaviour and combustions characteristics for gasoline and diesel engines. 15:30 - 17:00 Organizers: Simona Merola, Istituto Motori CNR; Takashi Mitome, Suzuki Motor Corp.; Hirohi Omote, LMEA/Yanmar Co.,LTD.; Paul Richards Chairpersons: Simona Merola, Istituto Motori CNR; Tohru Nakazono, Yanmar Co.,LTD.
13:30	Method for Predicting Erosion Due to Cavitation of Outboard-Motor **(2014-32-0054/20149054)** Toshio Watanabe, Hiroki Sakamoto, Suzuki Motor Corp.	Advantages and Challenges of Lean Operation of Two-Stroke Engines for Hand-Held Power Tools **(2014-32-0009/20149009)** Alexander Trattner, Helmut Grassberger, Oliver Schoegl, Stephan Schmidt, Roland Kirchberger, Helmut Eichlseder, Graz University of Technology; Armin Kölmel, Stephan Meyer, Tim Gegg, ANDREAS STIHL AG & Co. KG		
14:00	Robust Diagnostic Concept for Vehicle Gearbox with Artificial Pitting Defect in Gear using Vibration Measurements **(2014-32-0047/20149047)** Mohamed El Morsy, Czech Tech Univ Prague & Helwan Univ.; Gabriela Achtenova, Czech Technical University	CFD Analysis of a Two-Stroke Air Cooled Engine Designed for Handheld Products **(2014-32-0006/20149006)** Federico Brusiani, Gian Marco Bianchi, Cristian Catellani, University of Bologna; Marco Ferrari, Paolo Verziagi, Dario Catanese, EMAK Spa		
14:30	Development of a 0D Model Starting from Different RANS CFD Tumble Flow Fields in Order to Predict the Turbulence Evolution at Ignition Timing **(2014-32-0048/20149048)** Stefania Falfari, Claudio Forte, Federico Brusiani, Gian Marco Bianchi, Giulio Cazzoli, Cristian Catellani, University of Bologna	Measuring Scaling Effects in Small Two-Stroke Internal Combustion Engines **(2014-32-0010/20149010)** Alexander K. Rowton, Air Force Research Laboratory; Joseph K. Ausserer, Air Force Institute of Technology; Keith D. Grinstead, Innovative Scientific Solutions Inc; Paul J. Litke, Air Force Research Laboratory; Marc D. Polanka, Air Force Institute of Technology		
15:30			Design Guidelines of the Single-Point Auto-Ignition Engine based on Supermulti-Jets Colliding for High Thermal Efficiency and Low Noise: Obtained by Computational Experiments for a Small Strongly-Asymmetric Double-Piston Engine **(2014-32-0100/20149100)** Ken Naitoh, Takuma Okamoto, Tomoaki Kubota, Kan Yamagishi, Yoshiyuki Nojima, Taro Tamura, Waseda University	Influence of the Kind of Fatty Acid Methyl Esters on Diesel Combustion and the Characteristics of Soot Formation in Single Droplet Combustion **(2014-32-0086/20149086)** Yasufumi Yoshimoto, Niigata Inst. of Technology; Eiji Kinoshita, Kazuyo Fushimi, Kagoshima Univ; Masayuki Yamada, Niigata Inst. of Technology
16:00			Ethanol Addition Influence on Backfire Phenomena during Kickback in a Spark-Ignition Transparent Small Engine **(2014-32-0093/20149093)** Francesco Catapano, Silvana Di Iorio, Paolo Sementa, Bianca Maria Vaglieco, Istituto Motori CNR; Marcello Fiaccavento, Francesco Giari, Antonio Marchetti, Piaggio S.P.A.	Study on Spray Combustion Characteristics of Fatty Acid Methyl Ester Mixed with Diesel Oil **(2014-32-0083/20149083)** Akihiko Azetsu, Tokai University; Hiroomi Hagio, Honda Motor Co., Ltd.
16:30			Two Small Prototype Engines Developed based on Pulsed Supermulti-Jets Colliding: Having a Potential of Thermal Efficiency Over 60% with Satisfactory Strength of Structure **(2014-32-0099/20149099)** Ken Naitoh, Daiki Ikoma, Hiroki Sagara, Taro Tamura, Taiki Hashimoto, Yoshiyuki Nojima, Masato Tanaka, Kentaro Kojima, Kenya Hasegawa, Takuya Nakai, Shouhei Nonaka, Tomoaki Kubota, Waseda University	Further Insight into the Possibility to Fuel a SI Engine with Ammonia plus Hydrogen **(2014-32-0082/20149082)** Stefano Frigo, Roberto Gentili, Università di Pisa - DESTEC; Franco De Angelis, EDI Progetti & Sviluppo

TUESDAY, NOVEMBER 18 - AFTERNOON Technical and Business Sessions				
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**			
	Hall 90B	**Hall 90C**	**Hall 90E**	**Hall 90D**
	Measurement & Simulation (Part 2 of 4) (SETC4) The session is associated with engine and vehicle simulation tasks and their related measurements. Simulation and measurement methodology as well as the simulation and measurement application on development tasks will find a place within the session. 13:30 - 15:00 Organizers: Stephan Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Shigeru Fujii, Yamaha Motor Co., Ltd. Chairpersons: Giovanni Ferrara, Univ of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Stephan Schmidt, Graz University of Technology	**Two Stroke Engines (Part 2 of 2) (SETC17)** This session contains manuscripts focused on two-stroke engines. Topics such as emissions, performance, and efficiency will be explored. Advanced combustion control, direct fuel injection, simulation models and experimental results will be presented. 13:30 - 15:00 Organizers: Brian J. Callahan, Achates Power Inc.; Giovanni Ferrara, Univ. of Florence; Roberto Gentili, Universita degli Studi di Pisa; Scott A. Miers, Michigan Technological Univ.; Tomoo Shiozaki, Honda R&D Co., Ltd. Chairpersons: Roberto Gentili, Universita degli Studi di Pisa; Akira Iijima, Nihon University	**Advanced Combustion (Part 2 of 2) (SETC1)** This session focuses on advanced combustion technologies in both 4-stroke and 2-stroke engines. The scope of topics includes studies of mixture formation, dilution effects, ignition, abnormal combustion, engine efficiency, flame propagation, and emissions formation. 15:30 - 17:30 Organizers: William P. Attard; Roberto Gentili, Universita degli Studi di Pisa; Jaal B. Ghandhi, Univ. of Wisconsin Madison; Simona Silvia Merola, Istituto Motori CNR; Koji Yoshida Chairpersons: Adrian Irimescu, Istituto Motori CNR; Koji Yoshida, Nihon University	**Alternative Fuels (Part 2 of 2) (SETC2)** This session includes papers focused on aspects of operating small engines on non-petroleum based fuels or non-conventional blends of fuels. In particular this session looks at metrics such as spray behaviour and combustions characteristics for gasoline and diesel engines. 15:30 - 17:00 Organizers: Simona Merola, Istituto Motori CNR; Takashi Mitome, Suzuki Motor Corp.; Hirohi Omote, LMEA/Yanmar Co.,LTD.; Paul Richards Chairpersons: Simona Merola, Istituto Motori CNR; Tohru Nakazono, Yanmar Co.,LTD.
17:00			An Investigation on the Auto-Ignition of Fuel-Air Mixture Induced by Release of Oil-Fuel Droplets from Cylinder-Liner Using Multi-Zone Model **(2014-32-0094/20149094)** Yuichi Seki, Keito Negoro, Norimasa Iida, Keio Univ; Katsuya Matsuura, Hiroshi Sono, Honda R&D Co., Ltd. Automobile R&D Center	
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00453, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org

TUESDAY, NOVEMBER 18 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	Auditorium	Hall 90C	Hall 90B
	Engine Controls (Part 3 of 5) (SETC9) Papers in this session are related to design, development and testing of new or innovative electronic controls or control systems for internal combustion engines. Topics may include hardware, software and algorithm/function innovations as well as the associated sensors or actuators employed in the control system. Applications may range from very simple systems for 1-cylinder engines to more complex systems for high-performance or multi-cylinder engines. 15:30 - 16:30 Organizers: Laurent Fabre, Synerject SAS; Tobias Kallerhoff, Robert Bosch GmbH; Yutaka Nitta, Suzuki Motor Corp.; Thorsten Raatz, Robert Bosch GmbH; Tony Szczotka, Robert Bosch LLC Chairpersons: Gregory W. Davis, Kettering Univ.; Yutaka Nitta, Suzuki Motor Corp.	**Materials (SETC15)** This session will focus on the structure, processing, and properties of materials in small engine applications. Some possible topics include lightweighting of engine and vehicle components; heat treatment and surface processing; fatigue, fracture, and wear; coatings; and advanced ceramic, metallic, and polymeric materials. 15:30 - 17:00 Organizers: Alessandro Giorgetti, University Guglielmo Marconi; Hirotaka Kurita, Yamaha Motor Co., Ltd.; Alastair D. Long, Queen's Univ. of Belfast; David Elijah Palmer, BRP US Inc. Chairpersons: Robert Kee, Queen's University Belfast; Hirotaka Kurita, Yamaha Motor Co., Ltd.	**Measurement & Simulation (Part 3 of 4) (SETC4)** The session is associated with engine and vehicle simulation tasks and their related measurements. Simulation and measurement methodology as well as the simulation and measurement application on development tasks will find a place within the session. 15:30 - 17:00 Organizers: Stephan Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Shigeru Fujii, Yamaha Motor Co., Ltd. Chairpersons: Giovanni Ferrara, Univ. of Florence; Shigeru Fujii, Yamaha Motor Co., Ltd.; Stephan Schmidt, Graz University of Technology
15:30	Improvement Potential at Electronic Control Units by Integration Across Clusters and Applications **(2014-32-0071/20149071)** Christian Schweikert, Infineon Technologies AG; David Witt, Infineon Technologies North America Corp; Dirk Schweitzer, Marco Nicolo, Liu Chen, Infineon Technologies	Development of High Strength, High Thermal Conductivity Cold Sprayed Coatings to Improve Thermal Management in Hybrid Motorcycles **(2014-32-0044/20149044)** Simone Vezzù, Veneto Nanotech; Carlo Cavallini, Università Degli Studi Guglielmo Marconi; Silvano Rech, Enrico Vedelago, Veneto Nanotech; Alessandro Giorgetti, Università Degli Studi Guglielmo Marconi	Friction Measurement of Al-17%Si Monolithic Cylinder with using Newly Developed Floating Liner Device **(2014-32-0052/20149052)** Tatsuhiko Sato, Hirotaka Kurita, Yamaha Motor Co., Ltd.; Akemi Ito, Hideyuki Iwasaki, Tokyo City University
16:00	Transient Correction by Manifold Pressure in a TPS-Free FI System **(2014-32-0072/20149072)** Kenta Sugimoto, Suzuki Motor Corp.	Development of Improved Method for Magnetically Formed Decorative Painting **(2014-32-0045/20149045)** Akiko Tanaka, Ikue Sato, Honda R&D Co., Ltd.	Piston Temperature Measurement in Internal Combustion with Telemetric Method **(2014-32-0051/20149051)** Akira Ishibashi, Muneaki Nakamura, Hitoshi Muramatsu, Suzuki Motor Corp.
16:30	Towards an Open Source Framework for Small Engine Controls Development **(2014-32-0070/20149070)** Paolo Gai, Francesco Esposito, Riccardo Schiavi, Evidence Srl; Marco Di Natale, Scuola Superiore S. Anna; Claudio Diglio, Michele Pagano, Carlo Camicia, Luca Carmignani, Piaggio & C SpA	Accurate Simulation for Multi-Phase Materials in the Small Engine Industry **(2014-32-0042/20149042)** Bernard Alsteens, e-Xstream Engineering	Development of Temperature Estimation Method of Whole Engine Considering Heat Balance under Vehicle Running Conditions **(2014-32-0050/20149050)** Tomokazu Nomura, Koichiro Matsushita, Yoshihiko Fujii, Hirofumi Fujiwara, Honda R&D Co., Ltd.
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00455, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00453, and also individually. To purchase visit collections.sae.org

WEDNESDAY, NOVEMBER 19 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Auditorium	Auditorium	Hall 90C	Hall 90B
	Plenary Panel: Mitigation of GHG Emission (PANEL) 08:30 - 10:00 Moderators: Roberto Gentili, Universita degli Studi di Pisa Panelists: Pierre Duret, IFP School Helmut Eichlseder, Graz University of Technology Dr. A Ramesh, Indian Institute of Technology	**Engine Controls (Part 4 of 5) (SETC9)** Papers in this session are related to design, development and testing of new or innovative electronic controls or control systems for internal combustion engines. Topics may include hardware, software and algorithm/function innovations as well as the associated sensors or actuators employed in the control system. Applications may range from very simple systems for 1-cylinder engines to more complex systems for high-performance or multi-cylinder engines. 10:30 - 12:00 Organizers: Laurent Fabre, Synerject SAS; Tobias Kallerhoff, Robert Bosch GmbH; Yutaka Nitta, Suzuki Motor Corp.; Thorsten Raatz, Robert Bosch GmbH; Tony Szczotka, Robert Bosch LLC Chairpersons: Tobias Kallerhoff, Robert Bosch, LLC; Tatsuya Kuboyama, Chiba Univ.	**Engine Technology (Part 1 of 4) (SETC10)** Advanced engine technologies, design, and development for thermal efficiency, performance, and emissions, including cycle simulation. 10:30 - 12:00 Organizers: Satoshi INOUE, Honda R&D Co., Ltd.; Nagesh Mavinahally, Meggitt Control Systems; Mamoru Mikame, Honda; Hideyuki Okumura, Yamaha Motor Co., Ltd.; Alessio Sisi, Piaggio & C SpA; Sebastian Strauss, STIHL Inc. Chairpersons: Hideyuki Okumura, Yamaha Motor Co., Ltd.; Sebastian Strauss, STIHL Inc.	**Measurement & Simulation (Part 4 of 4) (SETC4)** The session is associated with engine and vehicle simulation tasks and their related measurements. Simulation and measurement methodology as well as the simulation and measurement application on development tasks will find a place within the session. 10:30 - 12:00 Organizers: Stephan Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Shigeru Fujii, Yamaha Motor Co., Ltd. Chairpersons: Giovanni Ferrara, Univ of Florence; Michihisa Mick Nakagawa, Kawasaki Heavy Industries, Ltd.; Stephan Schmidt, Graz University of Technology; Shigeru Fujii, Yamaha Motor Co Ltd
10:30		Detecting a Fully-Closed Throttle by Manifold Pressure in Fuel Injection System with Idle Speed Control **(2014-32-0075/20149075)** Kazuyoshi Shimatani, Suzuki Motor Corp.	Development of a Cam Phaser System to Improve the Performance of a Small Engine **(2014-32-0110/20149110)** P S Satyanarayana, Balasubramanian Loganathan, V Lakshminarasimhan, TVS Motor Company Ltd.; A Ramesh, S Sujatha, Indian Institute of Technology	An Analytical Model of a Two-Phase Jet with Application to Fuel Sprays in Internal Combustion Engines **(2014-32-0062/20149062)** Jonathan Tenenbaum, Michael Shapiro, Leonid Tartakovsky, Technion Israel Inst. of Technology
11:00		Online Engine Speed based Adaptation of Combustion Phasing and Air-Fuel Ratio **(2014-32-0076/20149076)** Christian Steinbrecher, Bastian Reineke, Wolfgang Fischer, Henning Heikes, Thorsten Raatz, Robert Bosch GmbH	Numerical Investigations of a Naturally Aspirated Cogeneration Engine Operating with Overexpanded Cycle and Optimised Intake System **(2014-32-0109/20149109)** Denis Neher, Maurice Kettner, Fino Scholl, Karlsruhe University of Applied Sciences; Markus Klaissle, Danny Schwarz, Senertec Kraft-Wärme-Energiesysteme GmbH; Blanca Gimenez, Univ. de Valladolid	Measurement and Validation of Two Wheeled Vehicle Single Cylinder Engine Unbalance Force Calculation on the Crankshaft **(2014-32-0061/20149061)** Rama Subbu, Baskar Anthony Samy, Piyush Mani Sharma, Prasanna Mahendiran, Hero MotoCorp Limited
11:30		The Application of a Resistive Type O2 Sensor to a Small Engine EFI System **(2014-32-0073/20149073)** Horizon Walker Gitano, University KL - MSI; Ray Chim, Jian Loh, Focus Applied Technologies	Extended Expansion Engine with Mono-Shaft Cam Mechanism for Higher Efficiency - Layout Study and Numerical Investigations of a Twin Engine **(2014-32-0102/20149102)** Patrick Pertl, Philipp Zojer, Michael Lang, Oliver Schoegl, Alexander Trattner, Stephan Schmidt, Roland Kirchberger, Graz University of Technology; Nagesh Mavinahally, Vinayaka Mavinahalli, MavinTech, LLC.	Study of Effects of Residual Stress on Natural Frequency of Motorcycle Brake Discs **(2014-32-0053/20149053)** Yoshihiro Nakagawa, Shinya Takahashi, Mikihito Masaki, Ranju Imao, Honda R&D Co., Ltd.
		The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00455, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00452, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00453, and also individually. To purchase visit collections.sae.org

WEDNESDAY, NOVEMBER 19 - MORNING Technical and Business Sessions		
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**	
	Hall 90D	**Hall 90E**
	Vehicle Components (SETC19) This session focuses on hardware not associated with the engine and drivetrain that supports the purpose of the vehicle such as suspensions, lighting, dampers, marine hulls, steering, vehicle frame, and heating and cooling systems. 10:30 - 12:00 Organizers: Masayuki Baba, Honda R&D Co., Ltd.; Ken Fosaaen, Kerdea Technologies; Robert Kee, Queen's University Belfast; Mario Santucci, Piaggio & C SpA Chairpersons: Tadao Okazaki, Kubota Corp.; Mario Santucci, Piaggio & C SpA	**Vehicle Dynamics & Safety (Part 1 of 3) (SETC18)** This session will focus on the application of technology to improve the stability, handling, ride and comfort of two and three wheeled vehicles. 10:30 - 12:00 Organizers: Masayuki Baba, Honda R&D Co., Ltd.; Derek L. Cleasby, Bosch Engineering GmbH; Marco Pierini, Università degli Studi di Firenze Chairpersons: Masayuki Baba, Honda R&D Co., Ltd.; Arnaldo Mazzei, Kettering Univ.
10:30	Load Control Module in a Two Wheeler **(2014-32-0027/20149027)** T Manikandan, S Sarmadh Ameer, A Sivakumar, Samaraj Dhinagar, TVS Motor Co. Ltd.	Objective Driveability Development of Motorcycles with AVL-DRIVE **(2014-32-0020/20149020)** Patrick Falk, Christian Hubmann, AVL List GmbH
11:00	Instant Mileage Assistance (IMA) in a Geared Two Wheeler **(2014-32-0028/20149028)** T Manikandan, S Sarmadh Ameer, A Sivakumar, Davinder Kumar, R Venkatesan, VenkataKalyana Kumar, TVS Motor Co. Ltd.	Development of a Fall Detection Algorithm for Powered Two Wheelers Application **(2014-32-0022/20149022)** Federico Giovannini, Niccolò Baldanzini, Marco Pierini, Università degli Studi di Firenze
11:30	Surface Fatigue Design Method for Automotive Components Subjected to Torsional Vibrations in Modern Engine Applications **(2014-32-0026/20149026)** Alessandro Franceschini, Emanuele Pellegrini, Raffaele Squarcini, Pierburg Pump Technology Italy	Sensitivity Analysis of a FE Model for Motorcycle-Car Full-Scale Crash Test **(2014-32-0023/20149023)** Daniele Barbani, Niccolò Baldanzini, Marco Pierini, Università degli Studi di Firenze
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org

WEDNESDAY, NOVEMBER 19 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90D	Auditorium	Hall 90C	Hall 90B
	Diesel Engine (Part 1 of 4) (SETC5) Papers in this session will pertain to studies of naturally aspirated and boosted diesel engines including their design, emission control, NVH, fuel system, fuel type, after-treatment, combustion quality, or engine control. 13:30 - 15:00 Organizers: Luigi Arnone, LOMBARDINI SRL; Brian J. Callahan, Achates Power Inc.; Roberto Gentili, Universita degli Studi di Pisa; Paul Litke, USAF; Masahiko Sugimoto, Kubota Corp.; Cinzia Tornatore, Istituto Motori CNR Chairpersons: Brian J. Callahan, Achates Power Inc.; Keiya Nishida, Univ. of Hiroshima	**Engine Controls (Part 5 of 5) (SETC9)** Papers in this session are related to design, development and testing of new or innovative electronic controls or control systems for internal combustion engines. Topics may include hardware, software and algorithm/function innovations as well as the associated sensors or actuators employed in the control system. Applications may range from very simple systems for 1-cylinder engines to more complex systems for high-performance or multi-cylinder engines. 13:30 - 15:00 Organizers: Laurent Fabre, Synerject SAS; Tobias Kallerhoff, Robert Bosch GmbH; Yutaka Nitta, Suzuki Motor Corp.; Thorsten Raatz, Robert Bosch GmbH; Tony Szczotka, Robert Bosch LLC Chairpersons: Shosaku Chiba; Tobias Kallerhoff, Robert Bosch GmbH	**Engine Technology (Part 2 of 4) (SETC10)** Advanced engine technologies, design, and development for thermal efficiency, performance, and emissions, including cycle simulation. 13:30 - 15:00 Organizers: Satoshi INOUE, Honda R&D Co., Ltd.; Nagesh Mavinahally, Meggitt Control Systems; Mamoru Mikame, Honda; Hideyuki Okumura, Yamaha Motor Co., Ltd.; Alessio Sisi, Piaggio & C SpA; Sebastian Strauss, STIHL Inc. Chairpersons: Nagesh Mavinahally, Meggitt Control Systems; Hideyuki Okumura, Yamaha Motor Co., Ltd.	**HCCI (Part 1 of 2) (SETC12)** This session focuses on studies of auto ignition combustion including HCCI and other low tempertautre combustion regimes. Experimental and simultaion studies pertaining to various means of controlling combustion are welcome. 13:30 - 15:00 Organizers: William P. Attard; Roberto Gentili, Universita degli Studi di Pisa; Jaal B. Ghandhi, Univ. of Wisconsin Madison; Tatsuya Kuboyama, Chiba Univ.; Tomoo Shiozaki, Honda R&D Co., Ltd. Chairpersons: Roberto Gentili, Universita degli Studi di Pisa; Tatsuya Kuboyama, Chiba Univ.
13:30	Evaluation of NOx Production Rate in Diesel Combustion Based on Measurement of Time Histories of NOx Concentrations and Flame Temperature **(2014-32-0133/20149133)** Yuzuru Nada, Yusuke Komatsubara, Thang Pham, Fumiya Yoshii, Yoshiyuki Kidoguchi, The University of Tokushima	The Use of Vibrational Signals for On-Board Knock Diagnostics Supported by In-Cylinder Pressure Analyses **(2014-32-0063/20149063)** Daniela Siano, Istituto Motori CNR; Fabio Bozza, Danilo D'Agostino, Maria Antonietta Panza, Univ of Naples- Ist Motori CNR	A Potentiality of Dedicated EGR in SI Engines Fueled by Natural Gas for Improving Thermal Efficiency and Reducing NO_x Emission **(2014-32-0108/20149108)** Sejun Lee, Kyohei Ozaki, Norimasa Iida, Keio Univ; Takahiro Sako, Osaka Gas Co., Ltd.	A Study of Supercharged HCCI Combustion Using Blended Fuels of Propane and DME **(2014-32-0005/20149005)** Keisuke Mochizuki, Takahiro Shima, Hirotaka Suzuki, Yoshihiro Ishikawa, Akira Iijima, Koji Yoshida, Hideo Shoji, Nihon University Graduate School
14:00	Visualization Analysis of Diesel Combustion with Water and Diesel Fuel Emulsified Blend in a Constant Volume Chamber Vessel **(2014-32-0127/20149127)** Hideyuki Ogawa; Gen Shibata, Yuhei Noguchi, Mutsumi Numata, Hokkaido University	Controlling Variable Coolant Temperature in Internal Combustion Engines and its Effects on Fuel Consumption **(2014-32-0064/20149064)** Koorosh Khanjani, Jiamei Deng, Andrzej Ordys, Kingston University	Evaluation of Engine Performance and Combustion in Natural Gas Engine with Pre-Chamber Plug under Lean Burn Conditions **(2014-32-0103/20149103)** Yoshitane Takashima, Hiroki Tanaka, Takahiro Sako, Osaka Gas Co., Ltd.; Masahiro Furutani, Nagoya Institute of Technology	Molecular Structure of Hydrocarbons and Auto-Ignition Characteristics of HCCI Engines **(2014-32-0003/20149003)** Gen Shibata, Ryota Kawaguchi, Soumei Yoshida, Hideyuki Ogawa, Hokkaido University
14:30	Macro- and Micro-scale Observation on Dynamic Behavior of Diesel Spray Affected by Ambient Density and Temperature **(2014-32-0125/20149125)** Mohd Al-Hafiz Mohd Nawi, Yoshiyuki Kidoguchi, Misato Nakagiri, Naoya Uwa, Yuzuru Nada, The University of Tokushima; Seiji Miyashiro, Tokushima College of Technology	Application of Engine Load Estimation Method Using Crank Angular Velocity Variation to Spark Advance Control **(2014-32-0065/20149065)** Ryosuke Ibata, Hirotaka Kawatsu, Tetsuya Kaneko, Kenji Nishida, Honda R&D Co., Ltd.	Study on Combustion Noise in Small General Purpose Engines **(2014-32-0105/20149105)** Atsushi Maruyama, Gaku Naoe, Honda R&D Co. Ltd.	Prediction of Ignition and Combustion Development in an HCCI Engine Fueled by Syngas **(2014-32-0002/20149002)** Yudai Yamasaki, Shigehiko Kaneko, University of Tokyo
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00454, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00455, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00452, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org

WEDNESDAY, NOVEMBER 19 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90E	Hall 90D	Auditorium	Hall 90C
	Vehicle Dynamics & Safety (Part 2 of 3) (SETC18) This session will focus on the application of technology to improve the stability, handling, ride and comfort of two and three wheeled vehicles. 13:30 - 15:00 Organizers: Masayuki Baba, Honda R&D Co., Ltd.; Derek L. Cleasby, Bosch Engineering GmbH; Marco Pierini, Università degli Studi di Firenze Chairpersons: Shigeru Fujii, Yamaha Motor Co., Ltd.; Arnaldo Mazzei, Kettering Univ.	**Diesel Engine (Part 2 of 4) (SETC5)** Papers in this session will pertain to studies of naturally aspirated and boosted diesel engines including their design, emission control, NVH, fuel system, fuel type, after-treatment, combustion quality, or engine control. 15:30 - 17:00 Organizers: Luigi Arnone, LOMBARDINI SRL; Brian J. Callahan, Achates Power Inc.; Roberto Gentili, Universita degli Studi di Pisa; Paul Litke, USAF; Masahiko Sugimoto, Kubota Corp.; Cinzia Tornatore, Istituto Motori CNR Chairpersons: Yoshiyuki Kidoguchi, Tokushima Univ.; Paul Litke, USAF	**Emissions (Part 1 of 3) (SETC6)** Papers in this session pertain to studies of exhaust emission control and the emission effects from fuels, engine controls, engine design, combuston quality, catalytic converters, diesel particulate filters, and other aftertreatment. The focus of the session is on reducing emissions and meeting international emission standards. 15:30 - 17:00 Organizers: Kai W. Beck, MOT GmbH; Hiromi Deguchi, Suzuki Motor Corp.; Leonid Tartakovsky, Technion Israel Inst. of Technology; James N. Carroll, Southwest Research Institute Chairpersons: Kai W. Beck, Mot GmbH; Hiromi Deguchi, Suzuki Motor Corp.; Leonid Tartakovsky, Technion Israel Inst. of Technology	**Engine Technology (Part 3 of 4) (SETC10)** Advanced engine technologies, design, and development for thermal efficiency, performance, and emissions, including cycle simulation. 15:30 - 17:00 Organizers: Satoshi INOUE, Honda R&D Co., Ltd.; Nagesh Mavinahally, Meggitt Control Systems; Mamoru Mikame, Honda; Hideyuki Okumura, Yamaha Motor Co., Ltd.; Alessio Sisi, Piaggio & C SpA; Sebastian Strauss, STIHL Inc. Chairpersons: Satoshi INOUE, Honda R&D Co., Ltd.; Sebastian Strauss, STIHL Inc.
13:30	Steering Effort Reduction by DC Motor Assisted Steering Mechanism in 3- Wheeler Vehicle **(2014-32-0017/20149017)** R Varunprabhu, Himadri Bushan Das, S Jabez Dhinagar, TVS Motor Co., Ltd.			
14:00	Studies of Shimmy Phenomenon by Statistical Approaches **(2014-32-0018/20149018)** Kenichi Morimoto, Kenichi Tanaka, Honda R&D Co., Ltd.			
14:30	Study on Analysis of Input Loads to Motorcycle Frames in Rough Road Running **(2014-32-0021/20149021)** Kazuhiro Ito, Yoshitaka Tezuka, Atsushi Hoshino, Honda R&D Co., Ltd.; Keita Sakurada, Honda R&D (India) Pvt. Ltd.			
15:30		Assessing the Limits of Downsizing in Diesel Engines **(2014-32-0128/20149128)** Francisco Payri, José Javier Lopez, Benjamin Pla, Diana Graciano Bustamante, CMT Motores Termicos UPV	Particle Emissions of Modern Handheld Machines **(2014-32-0036/20149036)** Jan Czerwinski, Univ. of Applied Sciences Biel-Bienne; Markus Kurzwart, Motorex Lubrication Technology; Andreas Mayer, Technik Thermische Maschinen; Pierre Comte, Univ of Applied Sciences Biel-Bienne	Comparison between 2 and 4-Stroke Engines for a 30 kW Range Extender **(2014-32-0114/20149114)** Enrico Mattarelli, Carlo Alberto Rinaldini, Giuseppe Cantore, Universita di Modena e Reggio Emilia; Enrico Agostinelli, HPE Srl
16:00		Engine Performance and Emissions of a Small Diesel Engine Fueled with Various Diesel/RME Blends **(2014-32-0135/20149135)** Silvana Di Iorio, Istituto Motori CNR; Agnese Magno, Istituto Motori & Univ. FedericoII of Naples; Ezio Mancaruso, Bianca Maria Vaglieco, Istituto Motori CNR; Luigi Arnone, Lorenzo Dal Bello, Lombardini S R L	Pulsed Secondary Air Injection System for Emission Reduction in Small Generator Sets **(2014-32-0035/20149035)** Sayaka Yasoshina, Ryo Saito, Honda R&D Co. Ltd.	Development of a Small Rotary SI/CI Combustion Engine **(2014-32-0104/20149104)** Alexander Shkolnik, Daniele Littera, Mark Nickerson, Nikolay Shkolnik, LiquidPiston; Kukwon Cho, Aramco Services Co.
16:30		Reduction Techniques of Exhaust Gas Emissions to Meet US EPA Tier4 Standard for Non-Road In-Direct Injection Diesel Engines **(2014-32-0130/20149130)** Takashi Onishi, Kubota Corp.; Tomoya Akitomo, Kubota Corp; Yuichi Tamaki, Yoshikazu Takemoto, Kubota; Hideyuki Goto, Kubota Corp; Mitsugu Okuda, Kubota	The Effect of a TiO_2 Coating with the Addition of H_2 Gas on Emissions of a Small Spark-Ignition Engine **(2014-32-0034/20149034)** Saager Paliwal, Alex S. Bare, Katherine J. Lawrence, Marc Anderson, Glenn Bower, University of Wisconsin	Rotary Valve Four-Stroke Technology Applied to Handheld Power Tools **(2014-32-0111/20149111)** Brian Mason, Keith Lawes, RCV Engines Limited
17:00		Acoustic Assessment in a Small Displacement Diesel Engine (2014-32-0129/20149129) Giancarlo Chiatti, ROMA TRE University; Erasmo Recco; Ornella Chiavola, Silvia Conforto, ROMA TRE University		
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00454, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00452, and also individually. To purchase visit collections.sae.org

WEDNESDAY, NOVEMBER 19 - AFTERNOON Technical and Business Sessions		
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**	
	Hall 90B	**Hall 90E**
	HCCI (Part 2 of 2) (SETC12) This session focuses on studies of auto ignition combustion including HCCI and other low tempertautre combustion regimes. Experimental and simultaion studies pertaining to various means of controlling combustion are welcome. 15:30 - 16:30 Organizers: William P. Attard; Roberto Gentili, Universita degli Studi di Pisa; Jaal B. Ghandhi, Univ. of Wisconsin Madison; Tatsuya Kuboyama, Chiba Univ.; Sherry E. McCaskey, SAE International; Tomoo Shiozaki, Honda R&D Co., Ltd. Chairpersons: Roberto Gentili, Universita degli Studi di Pisa; Tomoo Shiozaki, Honda R&D Co., Ltd.	**Vehicle Dynamics & Safety (Part 3 of 3) (SETC18)** This session will focus on the application of technology to improve the stability, handling, ride and comfort of two and three wheeled vehicles. 15:30 - 17:00 Organizers: Masayuki Baba, Honda R&D Co., Ltd.; Derek L. Cleasby, Bosch Engineering GmbH; Marco Pierini, Università degli Studi di Firenze Chairpersons: Masayuki Baba, Honda R&D Co., Ltd.; Arnaldo Mazzei, Kettering Univ.
15:30	Study of Supercharged Gasoline HCCI Combustion by Using Spectroscopic Measurements and FT-IR Exhaust Gas Analysis **(2014-32-0004/20149004)** Yuma Ishizawa, Munehiro Matsuishi, Yasuhide Abe, Go Emori, Akira Iijima, Hideo Shoji, Nihon University Graduate School; Kazuhito Misawa, Hiraku Kojima, Kenjiro Nakama, Suzuki Motor Corporation	One Approach to Definition of MSILs and Their Connections with ASILs **(2014-32-0016/20149016)** Sei Takahashi, Hideo Nakamura, Nihon University; Makoto Hasegawa, Japan Automobile Research Institute
16:00	A Study of HCCI Combustion Assisted by a Streamer Discharge Based on Visualization of the Entire Bore Area **(2014-32-0001/20149001)** Naoya Ito, Nihon University Graduate School; Akira Iijima, Nihon University; Akira Terashima, Junki Sahara, Takashi Shimada, Masanori Yamada, Nihon University Graduate School; Tomohiko Asai, Mitsuaki Tanabe, Koji Yoshida, Hideo Shoji, Nihon University	Basic Characteristics of Motorcycle Riding Maneuvers of Expert Riders and Ordinary Riders **(2014-32-0025/20149025)** Maki Kawakoshi, Takashi Kobayashi, Makoto Hasegawa, Japan Automobile Research Institute

THURSDAY, NOVEMBER 20 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90D	**Auditorium**	**Hall 90E**	**Hall 90C**
	Diesel Engine (Part 3 of 4) (SETC5) Papers in this session will pertain to studies of naturally aspirated and boosted diesel engines including their design, emission control, NVH, fuel system, fuel type, after-treatment, combustion quality, or engine control. 08:30 - 10:00 Organizers: Luigi Arnone, LOMBARDINI SRL; Brian J. Callahan, Achates Power Inc.; Roberto Gentili, Universita degli Studi di Pisa; Paul Litke, USAF; Masahiko Sugimoto, Kubota Corp.; Cinzia Tornatore, Istituto Motori CNR Chairpersons: Brian J. Callahan, Achates Power Inc.; Norimasa Iida, Ehlers Engineering Services	**Emissions (Part 2 of 3) (SETC6)** Papers in this session pertain to studies of exhaust emission control and the emission effects from fuels, engine controls, engine design, combuston quality, catalytic converters, diesel particulate filters, and other aftertreatment. The focus of the session is on reducing emissions and meeting international emission standards. 08:30 - 10:00 Organizers: Kai W. Beck, MOT GmbH; Hiromi Deguchi, Suzuki Motor Corp.; Leonid Tartakovsky, Technion Israel Inst. of Technology; James N. Carroll, Southwest Research Institute Chairpersons: Kai W. Beck, Mot GmbH; Hiromi Deguchi, Suzuki Motor Corp.	**Engine Components (Part 1 of 2) (SETC8)** This session focuses on hardware attached to the engine such as support systems, injectors, EGR valves, manifolds, turbo-chargers, water pumps, and ignition systems. 08:30 - 10:00 Organizers: Hiroshi Nakahara, Kawasaki Heavy Industries, Ltd.; Holger Oest, Continental Automotive Italy SPA; David James Thornhill, Queen's Univ. of Belfast Chairpersons: Robert Kee, Queen's University Belfast; Hiroya Ueda, Honda R&D Co., Ltd.	**Engine Technology (Part 4 of 4) (SETC10)** Advanced engine technologies, design, and development for thermal efficiency, performance, and emissions, including cycle simulation. 08:30 - 10:00 Organizers: Satoshi INOUE, Honda R&D Co., Ltd.; Nagesh Mavinahally, Meggitt Control Systems; Mamoru Mikame, Honda; Hideyuki Okumura, Yamaha Motor Co., Ltd.; Alessio Sisi, Piaggio & C SpA; Sebastian Strauss, STIHL Inc. Chairpersons: Satoshi INOUE, Honda R&D Co., Ltd.; Nagesh Mavinahally, Meggitt Control Systems
08:30	Numerical Investigation of the Relationship between Engine Performance and Turbocharger Speed of a Four Stroke Diesel Engine **(2014-32-0126/20149126)** Giovanni Vichi, Isacco Stiaccini, Univ. of Florence; Alessandro Bellissima, Yanmar R&D Europe; Ryota Minamino, Yanmar Co. Ltd.; Lorenzo Ferrari, Giovanni Ferrara, Univ. of Florence	Strategies for Emission Reduction on Small Capacity Two-Wheelers with Regard to Future Legislative Limits **(2014-32-0031/20149031)** Juergen Tromayer, Gerd Neumann, Graz University of Technology; Marcus Bonifer, Rainer Kiemel, Heraeus Catalysts	New Development Approach for Wet Motorcycle Clutch System **(2014-32-0136/20149136)** Thomas Metzinger, Christoph Raber, Christoph Wittmann, Schaeffler	Experimental Verification and Drivability Investigations of a Turbo Charged 2-Cylinder Motorcycle Engine **(2014-32-0112/20149112)** Christian Zinner, Reinhard Stelzl, Stephan Schmidt, Graz University of Technology; Stefan Leiber, Thomas Schabetsberger, BRP-Powertrain GmbH & Co KG
09:00	Small Injection Amount Fuel Spray Characteristics Injected by Hole-Type Nozzle for D.I. Diesel Engine **(2014-32-0124/20149124)** Keiya Nishida, Kuichun LI, Takeru Matsuo, University of Hiroshima; Daisuke Shimo, Wu Zhang, Mazda Motor Corp	Effect of Octane Number Obtained with Different Oxygenated Components on the Engine Performance and Emissions of a Small GDI Engine **(2014-32-0038/20149038)** Silvana Di Iorio, Francesco Catapano, Paolo Sementa, Bianca Maria Vaglieco, Istituto Motori CNR; Salvatore Florio, Elena Rebesco, Pietro Scorletti, Daniele Terna, ENI Div. R&M	Development of a Novel Low-Cost, Low-Power, Narrow-Band Oxygen Sensor for Small Engine Applications. (1 of 3) **(2014-32-0137/20149137)** Ken Fosaaen, Kerdea Technologies	Improvement of the Startability with Reverse Stroke Intake Devices for a Motorcycle Engine **(2014-32-0107/20149107)** Takahiro Masuda, Kouji Sakai, Yuki Yamaguchi, Jun-ichi Kaku, Hirobumi Nagasaka, Yamaha Motor Co., Ltd.
09:30	Medium Pressure Injection System for Small Diesel Engine Application: Numerical Simulation and Experimental Results **(2014-32-0134/20149134)** Giovanni Bonandrini, Rita Di Gioia, Luca Venturoli, Domenico Papaleo, Magneti Marelli Powertrain SpA; Lucio Postrioti, Università degli Studi di Perugia; Leonardo Zappalà, Piaggio & C. SpA	Regulated and Unregulated Emissions from a Flex Fuel Motorcycle Fuelled with Various Gasoline/Ethanol Blends **(2014-32-0032/20149032)** Luiz Carlos Daemme, Renato Penteado, Institute of Technology for Development; Fatima Zotin, UERJ; Marcelo Errera, UFPR	Study on Efficiency Improvement of Compact Generator for Motorcycle **(2014-32-0138/20149138)** Tetsuya Osakabe, Suzuki Motor Corp.	Durability Improvement for 2-Stroke Forced Air Cooled SI Engine **(2014-32-0113/20149113)** Vipin Sukumaran T., Sumith Joseph, Kamal kant, Vipin P, Mohan D Umate, TVS Motor Company Ltd.
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00454, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445 and COLL-TP-00452, and also individually. To purchase visit collections.sae.org

THURSDAY, NOVEMBER 20 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	Hall 90B	**Hall 90D**	**Auditorium**	**Hall 90E**
	NVH Technology (Part 1 of 2) (SETC16) All aspects of small engine related noise and vibration are covered in this session including: generation, experimental techniques, measurement, numerical analysis, NVH materials, source identification, NVH quality and novel solutions. 08:30 - 10:00 Organizers: Giovanni Ferrara, Univ. of Florence; Ken Kicinski, Harley-Davidson Inc.; Hiroshi Yano, Kawasaki Heavy Industries, Ltd. Chairpersons: Giovanni Ferrara, Univ. of Florence; Hiroshi Yano, Kawasaki Heavy Industries, Ltd.	**Diesel Engine (Part 4 of 4) (SETC5)** Papers in this session will pertain to studies of naturally aspirated and boosted diesel engines including their design, emission control, NVH, fuel system, fuel type, after-treatment, combustion quality, or engine control. 10:30 - 11:30 Organizers: Luigi Arnone, LOMBARDINI SRL; Brian J. Callahan, Achates Power Inc.; Roberto Gentili, Universita degli Studi di Pisa; Paul Litke, USAF; Masahiko Sugimoto, Kubota Corp.; Cinzia Tornatore, Istituto Motori CNR Chairpersons: Paul Litke, USAF; Gen Shibata, Hokkaido Univ.	**Emissions (Part 3 of 3) (SETC6)** Papers in this session pertain to studies of exhaust emission control and the emission effects from fuels, engine controls, engine design, combuston quality, catalytic converters, diesel particulate filters, and other aftertreatment. The focus of the session is on reducing emissions and meeting international emission standards. 10:30 - 11:30 Organizers: Kai W. Beck, MOT GmbH; Hiromi Deguchi, Suzuki Motor Corp.; Leonid Tartakovsky, Technion Israel Inst. of Technology; James N. Carroll, Southwest Research Institute Chairpersons: Kai W. Beck, Mot GmbH; Hiromi Deguchi, Suzuki Motor Corp.	**Engine Components (Part 2 of 2) (SETC8)** This session focuses on hardware attached to the engine such as support systems, injectors, EGR valves, manifolds, turbo-chargers, water pumps, and ignition systems. 10:30 - 11:30 Organizers: Hiroshi Nakahara, Kawasaki Heavy Industries, Ltd.; Holger Oest, Continental Automotive Italy SPA; David James Thornhill, Queen's Univ. of Belfast Chairpersons: Robert Kee, Queen's University Belfast; Hideyuki Okumura, Yamaha Motor Co., Ltd.
08:30	Design Method of Motorcycle Exhaust Sound Fitting to Vehicle Concept Regardless of Engine Configurations **(2014-32-0121/20149121)** Kazuhiko Tanaka, Haruomi Sugita, Hibiki Saito, Masahiko Sekita, Honda R&D Co., Ltd.			
09:00	Acoustic Simulation of Vehicle Exhaust System using High Order Transfer Matrix Method Coupled with Finite Element Method **(2014-32-0119/20149119)** Diego Copiello, Ze Zhou, Gregory Lielens, Free Field Technologies, MSC Software Co.			
09:30	Assessment and Experimental Validation of a 3D Acoustic Model of a Motorcycle Muffler **(2014-32-0122/20149122)** Andrea Fioravanti, Giulio Lenzi, Giovanni Vichi, Giovanni Ferrara, Univ. of Florence; Stefano Ricci, Leonardo Bagnoli, Ducati Motor Holding spa			
10:30		An Investigation of Controlling Two-Peak Heat Release Rate for Combustion Noise Reduction in Split-Injection PCCI Engine using Numerical Calculation **(2014-32-0132/20149132)** Hiroki Ikeda, Norimasa Iida, Keio Univ; Hiroshi Kuzuyama, Tsutomu Umehara, Toyota Industries Corp; Takayuki Fuyuto, Toyota Central R&D Labs Inc	Enhancing a Catalyst Formulation for a Big Displacement Motorcycle for Future Emission Regulations **(2014-32-0029/20149029)** Marcus Bonifer, Rainer Kiemel, Heraeus Catalysts	Characterization of the Performance of a Novel Low-Cost, Low-Power Narrow-Band Oxygen Sensor for Small Engine Applications Using a Propane Burner Test Stand (2 of 3) **(2014-32-0143/20149143)** Ken Fosaaen, Kerdea Technologies
11:00			Influence of Oil Mixture on Exhaust Gas Emissions of Two Stroke Engines **(2014-32-0037/20149037)** Stefano Bernardi, Marco Ferrari, Dario Catanese, EMAK Spa	Heat Transfer Performance of a Double Tube Type Light Duty Exhaust Heat Recovery Heat Exchanger **(2014-32-0139/20149139)** Ryutaro Shinohara, Shizuoka Univ.
	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00445, and also individually. To purchase visit collections.sae.org			

THURSDAY, NOVEMBER 20 - MORNING Technical and Business Sessions		
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**	
	Hall 90C	Hall 90B
	Lubricants (SETC14) 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 every increasing demand of new low emission engines. There are also two papers to address reducing friction and wear required for energy conserving performance in small engines. 10:30 - 11:30 Organizers: Brent R. Dohner, Lubrizol Corp.; Hirotaka Kurita, Yamaha Motor Co., Ltd. Chairpersons: Brent R. Dohner, Lubrizol Corp.; Hirotaka Kurita, Yamaha Motor Co., Ltd.	**NVH Technology (Part 2 of 2) (SETC16)** All aspects of small engine related noise and vibration are covered in this session including: generation, experimental techniques, measurement, numerical analysis, NVH materials, source identification, NVH quality and novel solutions. 10:30 - 11:30 Organizers: Giovanni Ferrara, Univ. of Florence; Ken Kicinski, Harley-Davidson Inc.; Hiroshi Yano, Kawasaki Heavy Industries, Ltd. Chairpersons: Hiroshi Yano, Kawasaki Heavy Industries, Ltd.
10:30	Advanced Low Friction Engine Coating Applied to a 70cc High Performance Chainsaw **(2014-32-0115/20149115)** Mikael Bergman, Magnus Bergwall, Thomas Elm, Husqvarna AB; Sascha Louring, Lars Nielsen, Danish Technological Institute	Analysis of the Acoustic Emission of an Oil Pump: Experimental and Numerical Activities **(2014-32-0120/20149120)** Sara Gronchi, Alessandro Franceschini, Riccardo Maccherini, Raffaele Squarcini, Fabio Guglielmo, Emanuela Ligarò, Pierburg Pump Technology Italy
11:00	The Rolling Contact Fatigue Behaviour of Motorcycle Lubricants **(2014-32-0117/20149117)** Matthew Smeeth, PCS Instruments	Single Cylinder Diesel Engine Mount Configuration for Reduced Vibration in a Three-Wheeled Vehicle **(2014-32-0123/20149123)** Vishnu Kumar Kuduva Shanthulal, Kannan Marudachalam, V Pattabiraman, S Jabez Dhinagar, Tvs Motor Company Ltd; Chandramouli Padmanabhan, Indian Institute of Technology Madras

THURSDAY, NOVEMBER 20 - MORNING Technical and Business Sessions	
TIME	**SESSION TITLE, DESCRIPTION, AND ROOM**
	Auditorium
	SETC Closing Ceremony (PLENARY) 12:30 - 13:30 Panelists: Robert Kee. Queen's University Belfast Tadao Okazaki, Kubota Corp.

PARTICIPANTS INDEX

PARTICIPANTS INDEX

TechSelect

An economical, efficient way to access and download multiple SAE technical papers

If you usually purchase seven or more SAE papers over the course of a year, a subscription to TechSelect not only saves you money, but also makes it very easy for you to find and download the papers you want.

- Search the entire Digital Library of over 100,00 SAE technical papers from 1906 to the present
- Choose the number of documents you want – select packages of up to 12, 25, 50, or 100 papers, with significant discount percentages at each level
- Subscriptions are on an annual, 12-month cycle, beginning on the date of purchase

Written by leading experts, SAE technical papers cover the most up-to-date, groundbreaking engineering research on issues impacting the automotive, aerospace, and commercial vehicle industries.

These TechSelect package options save you anywhere from 43-56% (for single users), compared with the $24 per paper list price for purchasing papers individually:

Downloads	Up to 12	Up to 25	Up to 50	Up to 100
Single user	$162	$297	$535	$1,051
2-10 users	$443	$956	$1,705	$3,672
11-20 users	$1,377	$3,147	$5,410	$9,179

Order TechSelect online at http://subs.sae.org/techselect/

To speak to an SAE sales representative:

Email: CustomerSales@sae.org
Phone: +1.888.875.3976 (U.S. and Canada)
+1.724.772.4086 (Outside U.S.)

The 21st Small Engine Technology Conference

Call for Papers

Society of Automotive Engineers of Japan, Inc.

SAE INTERNATIONAL

Osaka International Convention Center
(Grand Cube Osaka) (CC)Her architecture

VENUE : Osaka International Convention Center (Grand Cube Osaka)

PERIOD : November 17 to 19, 2015

DUE DATES

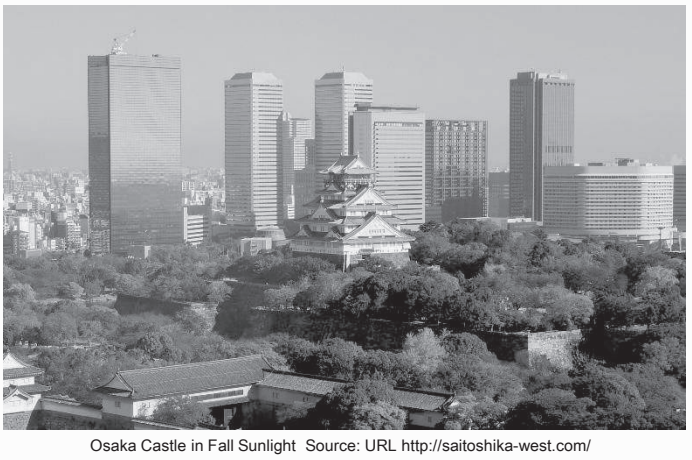
Abstracts due:	January 31, 2015
Draft manuscripts due:	April 30, 2015
Final manuscripts due:	July 31, 2015

FOREWORD

JSAE, Society of Automotive Engineers of Japan, is pleased to announce that the 21st Small Engine Technology Conference (SETC) will be held in Osaka, Japan from November 17 to 19, 2015.

The conference is jointly sponsored by JSAE and SAE International with the support of Japan Land Engine Manufacturers Association (LEMA) and Japan Marine Industry Association (JMIA). We kindly ask prospective researchers and engineers in a diversified field of small engine technology to submit electronic abstracts.

The conference offers up-to-date and new information in the development of small engine technologies in an exchange of participants from the globe. The events include technical visit, keynote speech, plenary session, exhibition and poster session besides ceremonial events of opening and award & closing. Lunch & coffee-break, welcome reception and banquet will be served as well.



Osaka Castle in Fall Sunlight Source: URL http://saitoshika-west.com/

MAIN SUBJECT AREAS

■ **Product Categories** focused in this conference are;

Vehicles with power source such as ATV, Motorcycles, Scooters, Personal Mobility, Marine, Snowmobiles, Recreational Vehicles, Utility Vehicles, Power Assist Devices, Power Assist Bicycles and Unmanned Vehicles.

Automobiles, Large Vessels, Large Aircraft, Locomotives And Spaceships are inapplicable.

Machineries with power source such as Snow Removal Equipment, Portable Power Generators, Agricultural Equipment, Garden Equipment, Hand Tools and Powered Exoskeleton.

Technologies applicable for the products above are to be presented.

■ **Technological Areas** focused in this conference are;

Combustion Engines such as 4 stroke Engines, 2 stroke Engines, SI Engines, Diesel Engines, HCCI Engines, Unconventional and Competition Engines.

New Energy Sources such as Hybrid Drive, Electric Drive, Fuel Cells and Solar Cells.

Components such as Chassis, Suspensions, Brakes, Transmissions, Drivetrains, Electrical Systems, Electronic Systems, Fuel Supply Systems and Wheels & Tires.

Development Technologies such as Numerical Simulations, Measurements and Production Technologies.

Fuels, Lubricants, and Tribology such as Alternative Fuels, Fuel Reformations, Additives, Friction Loss and Wear.

Vehicle Technologies such as Dynamics, Handling, Drivability, Safety and Human Factors & Ergonomics.

Environmental Impacts such as Noise, Vibration, Emissions, Aftertreatment and Life Cycle & Recyclability.

Materials such as Composites, Metal Alloys, Heat & Surface Treatment, New Material and Material Processing.

EXHIBITOR PROFILES

Exhibitor Directory text is published as submitted by exhibiting companies.

A

AVL LIST GmbH
Hans-List-Platz 1
Graz A-8020
Austria
www.avl.com

BOOTH 7 & 8
AVL is the world's largest independent company for development, simulation and testing technology of powertrains (hybrid, combustion engines, transmission, electric drive, batteries and software) for passenger cars, trucks and large engines.

B

BRP-Powertrain GmbH & Co KG
Rotaxstrasse 1
Gunskirchen 4623
Austria
www.rotax-oem.com

BOOTH 19 & 20
Over 90 years in the powertrain industry, Rotax® engines are at the heart and soul of countless products. BRP's Austrian facility oversees the worldwide development and production of Rotax engines. In fact, BRP has developed more than 350 engine models for recreational products and produced more than 7 million engines.

BSim S.r.l.
Corso Galileo Ferraris, 16
Torino 10121
Italy
www.bsim.it

BOOTH 29
BSim Engineering was born from the passion of its founders for 1D simulation. Thanks to over 10 years of experience in this field, BSim provides advanced engineering services to its clients. BSim is also a technical partner of Siemens Industry Software Product Lifecycle Management, and distributes LMS Imagine.Lab AMESim in Italy:a comprehensive software package used to model and analyze multi-domain intelligent systems and predict their performance. BSim is also distributor of Cosimate, a cosimulation tool (ChiasTek Inc) used to efficiently conduit interaction between heterogeneous simulators tools.

C

Cambustion
347 Cherry Hinton Road
Cambridge CB1 8DH
United Kingdom
www.cambustion.com

BOOTH 6
With analyzers for HC, NOx, CO/CO2 and particulates, Cambustion analyzers are in daily use around the world, assisting engineers and researchers in expanding their knowledge and meeting future emissions targets in a time and cost effective manner. As emissions limits are progressively reduced, and engines become more sophisticated, Cambustion products provide key tools to understand engine behavior.

Costruzioni Novicrom srl
Via Don Sturzo 51/53
Pontedera 56025
Italy
www.costruzioninovicrom.it

BOOTH 14
We work in precision mechanics since 1947 in the automotive field (with Ferrari SpA, Maserati, Piaggio, Aprilia, Guzzi..), defense (Oto Melara, SELEX Galileo..), and in recent years more specialized in the aeronautical sector (EN 9100) in which we operate in important projects, with some of the major international companies such as Agusta Westland Spa (we are the main supplier of machined castings and forgings), Piaggio Aero (machined parts in titanium), etc. .. Ability to start the production cycle while also providing the raw material (castings, forgings and bar) with aeronautical certifications. We provide not only the part but also machined and assembled units complete with processes (Heat treatments, Alodine, DOW, anodic oxidations, cadmiature, Rockhard, etc..), Non Destructive Testing (penetrants), dimensional Zeiss, FAI.

D

Dell'Orto S.p.a.
Via Kennedy 7
Cabiate (CO) 22060
Italy
www.dellorto.it

BOOTH 9
Dellorto produces advanced powertrain solutions. Company sites are located in Italy (Milan), India (Pune) and China (Shanghai). Dellorto Small Engine product range includes the following components: Engine Control Units • Mechanical & Electronic Throttle Body • Exhaust Throttle Valve and Variable Intake Systems • Fuel Pump Modules and Fuel Rails

E

ECO-PowerDrive-2
Institute for Internal Combustion Engines & Thermodynamics
Inffeldgasse 25b
Graz 8010
Austria

BOOTH 23
In the Research Consortium ECO-PowerDrive-2 scientists from Graz develop methods for the reduction of emission and fuel consumption of small powertrains under real world operating conditions. The international research consortium, led by Graz University of Technology, consists of 8 company partners and 4 scientific partners and is focused on propulsion units for two-wheeler, small passenger cars as well as hand-held working and garden tools.

EDI Progetti & Sviluppo
Via Molise 7 Zona Industriale Gello
Pontedera 56025
Italy

BOOTH 14
EDI R&D is an engineering company interested in research and development of new engines and vehicles, test and control machines, equipment for laboratory or special applications. EDI designs, develops and tests machines, engines, vehicles or specific accessories, executes costs analyses, builds prototypes and carries out tests, functional and structural versification.

Evidence Srl
Via Carducci 56
S.Giuliano Terme Pisa 56010
Italy
www.evidence.eu.com

BOOTH 14
We are a company of about 20 high qualified Engineers. One third of us have a PhD degree. We also have over 10 years of experience in national and international research projects. The principal product for this field is ERIKA Enterprise, the first open-source, royalty-free,OSEK/VDX Certified Real Time Operating System.

F

Femto Engineering SRL
Via Etruria San Casciano In Val Pesa
Florence 50026
Italy

BOOTH 14
FemtoEngineering is a mechanical engineering and manufacturing company of a scope and size able to cater to product design, prototyping, engineering, production equipment design and construction and techno-polymer component production requirements. FemtoEngineering furnishes a global engineering service, working alongside customers and providing support from the initial development phases of a new product up to and including complete industrialisation, with a complete suite of skills and instruments covering the entire development cycle, from the initial design phase to the finished product.

Forschungsgesellschaft für Verbrennungskraftmaschinen und Thermodynamik
Inffeldgasse 19
Graz, 8010
Austria

BOOTH 30
The Forschungsgesellschaft für Verbrennungskraftmaschinen und Thermodynamik conducts together with the Institute for Internal Combustion Engines and Thermodynamic of Graz University of Technology innovative and international recognised research in the cross-liked system "Energy-Engine - Traffic - Environment". In the research areas Working Process, Simulation and Analysis / Combustion System Development / Design / Thermodynamics / Emission / Traffic and Environment solutions for actual and future environmentally relevant problems are treated.

Frame Talent srl
Via Mario Giuntini 63
Cascina I-56023
Italy

BOOTH 14
FRAME TALENT SRL is an innovative startup, developing projects based on high technology, innovation and design, especially related to security. Its main project is FRAME ANGEL, a localisation, antitheft and smart rescue system for bicycles and mopeds, aimed at providing quick effective succours in case of robberies, assaults and accidents.

EXHIBITOR PROFILES

Exhibitor Directory text is published as submitted by exhibiting companies.

H

Heraeus Precious Metals GmbH & Co KG
Heraeusstrasse 12-14
Hanau 63450
Germany
www.heraeus-catalysts.com

BOOTH 5

The Hanau-based precious metal and technology group Heraeus is a globally active family-run enterprise with a history of more than 160 years. We provide high-end solutions to our customers to lastingly strengthen their competitive position. Our areas of competence include precious metals, materials and technologies, sensors, biomaterials and medical devices, quartz glass and specialty light sources. In the financial year 2013, Heraeus achieved a revenue from the sale of products of €3.6 bn, while the revenue from precious metal trading was €13.5 bn. With about 12,500 employees in more than 110 companies worldwide, Heraeus is in a leading position on its global sales markets. The Heraeus Boilerplate is available in some other languages; please contact the Heraeus Corporate Communications department.

Honda R&D Co Ltd
Power products
3-15-1 Senzui Asaka-Shi
Saitama 351-0024
Japan
world.honda.com

BOOTH 21 & 22

Honda is leading edge by creating new value and providing products of the highest quality at a reasonable price for worldwide customer satisfaction and has conducted its activities with a commitment to protecting the environment and enhancing safety.

I

Infineon Technologies AG
Am Campeon 1-12
Neubiberg 85579
Germany
www.infineon.com

BOOTH 17

Product portfolio: Semiconductors About Infineon: Infineon Technologies AG, Neubiberg, Germany, offers innovative semiconductor and system solutions addressing three central challenges to modern society: energy efficiency, mobility, and security. Presence: More than 20 research and development centers, 12 production sites, and about 40 sales offices in all key microelectronic markets throughout the globe.

K

Kerdea Technologies Inc.
1800 N Greene St Ste H
Greenville, NC 27834
United States

BOOTH 25

Kerdea Technologies offers a patented sub-miniature Oxygen sensor merging proven resistive-based technology with low cost MEMS fabrication. This technology brings the world's smallest oxygen sensing element with the fastest speed (i.e. improved A/F control), delivering reduced emissions and improved fuel economy in serving global EFI systems growth in small engine markets

See our ad on page 15.

L

LiquidPiston, Inc.
1292A Blue Hills Ave
Bloomfield CT 06002
United States
www.liquidpiston.com

BOOTH 27

LiquidPiston, Inc (LP) develops compact, quiet, high-efficiency, low-vibration, multi-fuel capable combustion engines that are scalable from 1HP to over 1000 HP. LiquidPiston's X Engine is a non-Wankel rotary embodiment of the company's innovative High Efficiency Hybrid Cycle (HEHC)

M

MB Electronica SRL
CS Ossaia 35-35P
Cortona 52044
Italy

BOOTH 14

MB Electronics is an Italian company operating in the field of electronics and high-tech able to collaborate with their customers from design , development and production of Electronic Boards , Devices and Systems primarily in the rail markets , security , aerospace, automotive and communications.

MOVET
Centro d'Iniziativa su
MOtori, VEicoli e Tecnologie
SPONSOR
Viale R Piaggio 32
Pontedera (PI) 56025
Italy
www.movet.org

BOOTH 3

MOVET is a no-profit association among Individuals, Industries, Universities, Centers for Research and Services to firms who aims: To reward and value the scientific, technical and industrial capability and skills existing in Tuscany in the automotive sector. To support and enhance the innovation and the research in the Industry of Vehicles, Engines, Mobility Systems and related Technologies.

P

Passaponti metal cleaning technology
Via Pio La Torre
Scandicci Florence 50018
Italy
www.passaponti.com

BOOTH 14

Since 1966 PASSAPONTI designs and manufactures machines and systems for cleaning parts in the automotive and aerospace industry used worldwide for both production and maintenance applications. The completeness of the know-how allows the "solution of the problem" offering the complete engineering of the system till the final evaluation of cleanliness.

Piaggio & C.s.p.a.
PLATINUM SPONSOR
Viale Rinaldo Piaggio 25
PONTEDERA - PI 56025
Italy
www.piaggiogroup.com/en

BOOTH 1 & 2

The Piaggio Group is the largest European manufacturer of two-wheel motor vehicles and one of the world leaders in its sector. The Group is also a major international player on the commercial vehicle market

See our ad on cover 2, 3 and 4.

Prufrex Innovative Power Products GmbH
Egersdorferstr 36
Cadolzburg 90556
Germany
www.pruefrex.com

BOOTH 18

PRUFREX is a leading developer and manufacturer of digital ignition systems and electronic control units (ECUs) and the partner of choice for system-based designs. Making the most of our expertise in electrical components, we provide tailored solutions supported by a comprehensive range of consulting, development, manufacturing and logistics services.

See our ad on page 3.

Pure Power Control Srl
Via dei Pini 27
Viareggio (LU) 55049
Italy

BOOTH 14

The mission of Pure Power Control S.r.l. is to design and develop environmentally-friendly Propulsion systems based on hybrid electric, hydrostatic and kinetic technologies. The company produces advanced electronic controls developed adopting state-of-the-art model-based design methodologies and tools, and provides engineering services for model-based systems engineering, modelling and simulation.

R

Robert Bosch GmbH
SPONSOR
PO Box 30 02 40
Stuttgart D 70442
Germany
www.bosch.com

BOOTH 10 & 11

The Bosch Group is a leading global supplier of technology and services.Bosch Group's products and services are designed to fascinate, and to improve the quality of life by providing solutions which are both innovative and beneficial. In this way, the company offers technology worldwide that is "Invented for life."

S

Schaeffler GmbH
SPONSOR
Industriestr 1-3
Herzogenaurach 91074
Germany
www.schaeffler.it

BOOTH 24

Schaeffler with its product brands INA, LuK and FAG is a leading global provider of rolling bearing and plain bearing solutions and of linear and direct drive technology, as well as a renowned supplier to the automotive industry of high-precision products and systems for engines, transmissions and chassis. The group of companies with operations around the world generated revenue of approximately 11.2 billion Euros in 2013; with more than 80,000 employees worldwide, Schaeffler is one of the largest German and European technology companies in family ownership. With approximately 170 locations in 49 countries, Schaeffler has a worldwide network of manufacturing locations, research and development facilities, sales companies, engineering offices, and training centers.

See our ad on page 13.

EXHIBITOR PROFILES

Synerject SAS
PLATINUM SPONSOR
BP 54751
17 ter rue Paulin Talabot
Toulouse Cedex 31047
France

BOOTH 12 & 13

Synerject is a Joint Venture of Continental Automotive Corporation (70%) and the Orbital Corporation (30%). Synerject provides a solutions for gasoline engine management systems and components to the Marine, Motorcycle and Recreation industry manufacturers (OEMs) , primarily integrating the products and technologies. Synerject's main expertise is in gasoline fuel injection system design, components manufacturing and system integration for applications in our target markets. Our unique portfolio covers both 2 stroke and 4 stroke engines, making Synerject the only supplier in the industry to have both capabilities.
See our ad on page 5.

T

Toscana Promozione
Invest in Tuscany
Via Vittorio Emanuele II 62-64
Firenze 462801
Italy

BOOTH 4, 14,15 AND 16

Invest in Tuscany is a network of public partners that assists investors for their operations in the region providing a comprehensive support and complete information about all aspects of establishing businesses in Tuscany. It guarantees maximum confidentiality on inquiring companies, projects and specific requests for information. www.investintuscany.com
See our ad on page 9.

Trelleborg Sealing Solutions Kalmar AB
Damping Solutions
Via Sen A Toselli 3
Cuneo 12100
Italy
www.rubore.com

BOOTH 26

Trelleborg Damping Solutions Kalmar is the world leader in the development and production of noise and vibration damping solutions for automotive and industrial applications. Our unique rubber to metal composite materials for noise damping combine a number of valuable properties: vibration absorption, isolation, sealing, bonding strength and excellent adhesion.

UNIVERSITY DISPLAYS

Firenze Race Team – University of Florence
Via di Santa Marta,3
Florence 50139
Italy

BOOTH V2

Firenze Race Team, established in 2000, is the official Formula SAE team of the University of Florence and was the first Italian team ever to take part in a Formula SAE event. The entire design and manufacturing processes can boast of the support of world-renowned sponsors in the motorsport field, in particular Beta Motors, Arrow Exhausts and Bacci Trasmissioni Meccaniche.

University of Pisa – School of Engineering
E-Team Squadra Corse
Dept DESTEC, largo Lucio Lazzarino 2
Pisa 56122
Italy
www.eteamsquadracorse.it/

BOOTH V1

E-Team is the Racing Team carrying the prestigious flag of the University of Pisa to Formula SAE and Formula Student Competitions. ET6 is the latest evolution of the Aprilia SXV 550 Twin-cylinder based project, with a tubular frame, push rod suspension, 13'' wheels, carbon fiber bodywork and electro-pneumatic actuated gear.

POSTER DISPLAYS

LOCATION: GALLERY

SPONSORS

A special thank you to the following companies who have generously chose to support this SAE International event.

PLATINUM SPONSORS

PIAGGIO GROUP

SYNERJECT
Riding the Future

BRONZE SPONSORS

Intertek
Valued Quality. Delivered.

Lubrizol

FRIEND OF INDUSTRY SPONSORS

BOSCH

SCHAEFFLER
LuK INA FAG

invest in tuscany

TOSCANA
PROMOZIONE

AD INDEX

Company	Booth#	Page	Web Address
Kerdea Technologies Inc	25	17	www.kerdea.com
Piaggio Group	1 & 2	Cover 2	www.vespa.com
	1 & 2	Cover 3	www.vespa.com
	1 & 2	Cover 4	www.vespa.com
PRUFREX Innovative Power Products GmbH	18	5	www.prufrex.com
Schaeffler	24	13	www.schaeffler-mobility.com
Synerject	12 & 13	7	www.synerject.com
Toscana Promozione	14 & 15	9	www.investintuscany.com
University of Washington - Madison	Sponsor	26	www.mees.engr.wisc.edu/2014fuelengine