### TECHNICAL SESSIONS

**TUESDAY, NOVEMBER 15 - MORNING**  
Technical and Business Sessions

<table>
<thead>
<tr>
<th>TIME</th>
<th>Ballroom C1/C2/C3</th>
<th>Meeting Room 12/13</th>
<th>Meeting Room 10/11</th>
<th>Meeting Room 6/7</th>
</tr>
</thead>
</table>
| 10:30 a.m. | **Advocate Combustion: Part 1 of 2 (SETC1)**  
(9:30-10:30 a.m.)  
Organizers: William P. Attard, Fiat Chrysler Automobiles; Hao Li, G. G. Sports, Univ. of Wisconsin-Madison; Adrin Innescu, Simonive Motors, Instituto Nacional de Navegación; Koji Yoshida, Nihon University  
Chairpersons: Kei W. Back, Moti GmbH; Co-Chair: Koji Yoshida, Nihon University | **Diesel Engine (SETC4)**  
(10:30-11:30 a.m.)  
Organizers: Brian J. Callahan, Automotive Power Inc.; Paul Little, USAF; Luca Marchetti, Instituto Motor CNR; Amasslia Sgubomik, Kubota Corp.  
Chairpersons: Paul Little, USAF; Co-Chair: Tadashi Ohara, Kubota Corp. | **Engine Controls: Part 1 of 3 (SETC8)**  
(10:30-11:30 a.m.)  
Organizers: Ken Fossaer, Karda Technologies; Tobias Koppert, Robert Bosch GmbH; Yuta Naka, SUZUKI MOTOR CORPORATION  
Chairpersons: Ken Fossaer, Karda Technologies; Co-Chair: Tetsuji Deguchi, Suzuki Motor Corp. | **Functional Safety (SETC20)**  
(10:30-11:30 a.m.)  
Organizers: Thomas L. Lavoie, Quanshield Technologies Europe AB; Takashi Mitome, Suzuki Motor Corp.  
Chairpersons: Thomas L. Lavoie, Quanshield Technologies Europe AB; Co-Chair: Takashi Mitome, Suzuki Motor Corp. |

**Characterization of Different Injection Technologies for High Performance Two-Stroke Engines**  
(9:30-10:30 a.m.)  
Franz Winkler, Roland Cresad, Oliver Schoen, Graz University of Technology; Nigel Fairall, BP/Powertrain GmbH & Co KG  
(10:30-11:30 a.m.)  
Yasuko Miyazato, Kubota Corp.  
(11:00-12:00 a.m.)  
Yasuo Yashida, Kotoke Tanaka, Zhimin Liu, Mieko Yamaura, Nihon University Graduate School, Akiha Iwami, Misaki Saito, Hidetaka Shoji, Nihon University  
(12:00-1:00 p.m.)  
Effects of EGPR Addition onto Combustion Stability and Sliding Performance of a Small, Single-Cylinder Diesel Generator  
(1:00-2:00 p.m.)  
Marc Cyril Bens, April Nicole Covington, Derek Johnson, Nathan Fowler, Robert Helfst, West Virginia University  
(2:00-3:00 p.m.)  
Analysis of the Turbogenera Speed to Estimate the Cylinder-to-Cylinder Injection Variations - Part 1: Timed Domain Analysis  
(3:00-4:00 p.m.)  
Giovanni Vichi, Michelle Baccianti, Isacco Sfioraci, Giovanni Ferrara, University of Florence; Lorenzo Ferrai, National Research Council of Italy; Alessandro Ballatini, Yanmar & R&D Europe; Go Asia, Yanmar Co Ltd  
(4:00-5:00 p.m.)  
Research on Severity Class Evaluation Based on Various Crashes Situations Involved with Motorcycle for ISO 26262  
(5:00-6:00 p.m.)  
Yui Yama, Makoto Hasegawa, Takashi Hartige, Japan Automobile Research Institute  
(6:00-7:00 p.m.)  
A Study of Knocking in a Lean Mixture Using an Optically Accessible Engine  
(7:00-8:00 p.m.)  
Yasuo Yashida, Kotoke Tanaka, Zhimin Liu, Mieko Yamaura, Nihon University Graduate School, Akiha Iwami, Misaki Saito, Hidetaka Shoji, Nihon University  
(8:00-9:00 p.m.)  
Analysis of the Turbogenera Speed to Estimate the Cylinder-to-Cylinder Injection Variations - Part 2: Frequency Domain Analysis  
(9:00-10:00 p.m.)  
Giovanni Vichi, Michelle Baccianti, Isacco Sfioraci, Giovanni Ferrara, University of Florence; Lorenzo Ferrai, National Research Council of Italy; Alessandro Ballatini, Yanmar & R&D Europe; Go Asia, Yanmar Co Ltd  
(10:00-11:00 p.m.)  
Examination of Hazard Analysis and Risk Assessment and Exposure Research in the Real Traffic Situation of ISO 26262 for Motorcycles  
(11:00-12:00 p.m.)  
Makoto Hasegawa, Takahiro Konno, Japan Automobile Research Institute  
(12:00-1:00 p.m.)  
A Study on the Knocking Characteristics of an SI-HECI Engine by Using in-Cylinder Visualization  
(1:00-2:00 p.m.)  
Kotaro Takeda, Shinobu Takashi, Yuki Yoshida, Zhimin Liu, Akira Iwami, Hidetaka Shoji, Nihon University  
(2:00-3:00 p.m.)  
Spray, Mixture and Combustion Characteristics of Small Injection Amount Fuel Spray Injected by Holz Nozzles for Diesel Engine  
(3:00-4:00 p.m.)  
Kazuya Yashita, University of Hiroshima; Takanori Maitani, Mazda Motor Corp; Kengo Yang, Yousuke Oyada, University of Tokyo; Daisuke Shinjo, Mazda Motor Corp  
(4:00-5:00 p.m.)  
Performance Analysis of Data Driven Plant Models on Embedded Systems  
(5:00-6:00 p.m.)  
Tobias Guldani, ETAS Inc.  
(6:00-7:00 p.m.)  
Construction of an ISO 26262 C Class Evaluation Method for Motorcycles  
(7:00-8:00 p.m.)  
Masa Kawasaki, Takashi Kobayashi, Makoto Hasegawa, Japan Automobile Research Institute  
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## TECHNICAL SESSIONS

**TUESDAY, NOVEMBER 15 - AFTERNOON**

<table>
<thead>
<tr>
<th>Time</th>
<th>Ballroom C1/C2/C3</th>
<th>Meeting Room 10/11</th>
<th>Meeting Room 6/7</th>
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<tr>
<td>1:30 p.m. - 3:00 p.m.</td>
<td><strong>Advance Combustion: Part 2 of 2 (SETC1)</strong>&lt;br&gt;This session focuses on advanced combustion technologies in both 4-stroke and 2-stroke engines. The scope of topics includes studies of mixture formation, ignition, equivalence, engine efficiency, emissions formation.</td>
<td><strong>Engine Controls: Part 2 of 3 (SETC8)</strong>&lt;br&gt;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/software 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.</td>
<td><strong>Materials: Part 1 of 2 (SETC14)</strong>&lt;br&gt;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 ceramics, metallic, and polymorphic materials.</td>
<td><strong>Two Stroke Engine: Part 1 of 2 (SETC17)</strong>&lt;br&gt;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.</td>
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<tr>
<td>1:30 p.m. - 3:00 p.m.</td>
<td>Organizers: William P. Allard, Fiat Chrysler Automobiles; J. B. Ghani, Univ. of Wisconsin Medecine; Adrian Imroze, Simonia Silva Marilea, Istituto Motori CNR, Koji Yoshida, Nissan University</td>
<td>Organizers: Ken Fotsaan, Kondo Technologies; Tobias Kellerhoff, Robert Bosch GmbH; Yuuka Nitta, SUZUKI MOTOR CORPORATION</td>
<td>Organizers: Mark Doyle, Mercury Marine; Hirofuki Kanda, Yamaha Motor Co., Ltd.; David Elliot Palmer, BRP US Inc.; Leonid Taratovskiy, Technion Israel Inst. of Technology</td>
<td>Organizers: Brian J. Callahan, Achates Power Inc.; Flors Duran, IFP School; Giovanni Ferrari, Univ. of Florence; Tomo Shizuo, Honda R&amp;D Co., Ltd.</td>
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<tr>
<td>1:30 p.m. - 3:00 p.m.</td>
<td>Chairpersons: Koji Yoshida, Nissan University</td>
<td>Chairpersons: Ken Fotsaan, Kondo Technologies</td>
<td>Chairpersons: Ken Fotsaan, Kondo Technologies</td>
<td>Chairpersons: Giovanni Ferrari, Univ. of Florence</td>
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<tr>
<td>2:00 p.m.</td>
<td>Planned by Small Engine Technology Conference Technical Committee / Small Engine Technology Conference General Committee</td>
<td>The papers in this session are available in SAE Technical Paper Collection, COLI-TCP-05666, and also individually. To purchase visit collections.sae.org</td>
<td>The papers in this session are available in SAE Technical Paper Collection, COLI-TCP-05688, and also individually. To purchase visit collections.sae.org</td>
<td>The papers in this session are available in SAE Technical Paper Collection, COLI-TCP-05686, and also individually. To purchase visit collections.sae.org</td>
</tr>
</tbody>
</table>
## Technical Sessions

### TUESDAY, NOVEMBER 15 - AFTERNOON

**Meeting Room 10/11**

**Engine Controls: Part 3 of 3 (SETC16)**

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.

- **3:30 p.m. - 5:00 p.m.**
  - **Organizers:** Ken Fossaen, Kanda Technologies; Tobias Kallikoff, Robert Bosch GmbH; Yutaka Nitta, SUZUKI MOTOR CORPORATION
  - **Chairperson:** Ken Fossaen, Kanda Technologies
  - **Co-Chair:** Yutaka Nitta, Suzuki Motor Corp.
  - **Presentations:**
    - Shinichi Okunishi, Kon Ogasawara, Honda R&D Co. Ltd
    - Comparative Small Engine Testing Using Hybrid Composite Cylinder Liners (2016-32-0012/20168022)
    - David Weiss, Eck Industries Inc.; Simon Bano, Chris Jordan, Intelligent Components, LLC; Pradeep Pothuri, University of Wisconsin

**Meeting Room 6/7**

**Materials: Part 2 of 2 (SETC14)**

This session will focus on the structure, processing, and properties of materials in internal combustion applications. Some possible topics include lightweighting of engines and vehicle components; heat treatment and surface processing; fatigue, fracture, and wear; coatings; and advanced ceramic, metallic, and polymeric materials.

- **3:30 p.m. - 5:00 p.m.**
  - **Organizers:** Mark Degler, Mercury Marine; Hiroki Kunita, Yamaha Motor Co., Ltd; David Elijah Palmer, ERP US Inc.; Leonid Tartakovsky, Technion-Israel Inst. of Technology
  - **Chairperson:** Brian J. Callahan, Achates Power Inc.
  - **Co-Chair:** Hiroki Kunita, Yamaha Motor Co., Ltd.
  - **Presentations:**
    - Stephan Schneider, German Aerospace Center (DLR); Marco Chiodi, Politecnico di Milano; Horst Friedrich, German Aerospace Center (DLR); Michael Bargenda, Politecnico di Milano

**Ballroom C1/C2/C3**

**NVH Technology: Part 1 of 2 (SETC16)**

All aspects of engine-related noise and vibration are covered in this session including generation, measurement, numerical analysis, NVH materials, source identification, NVH quality and novel solutions.

- **3:30 p.m. - 5:00 p.m.**
  - **Organizers:** Thomas L. Lago, QimsSound Technologies Europe AB; Hiroshi Yano, Kawasaki Heavy Industries, Ltd.
  - **Chairperson:** Thomas L. Lago, QimsSound Technologies Europe AB
  - **Co-Chair:** Hiroshi Yano, Kawasaki Heavy Industries, Ltd.
  - **Presentations:**
    - Experimental Acoustic Analysis of a Motorcycle Descriptive Muffler in Presence of Mean Flow (2016-32-0036/20168039)
      - Andrea Florisavanti, Giovanni Vichi, Isacco Sciacchitano, Giovanni Ferrara, University of Florence; Lorenzo Ferrara, National Research Council of Italy
    - Mapping of Fuel Anti-Knock Requirements for a Small Remotely Piloted Aircraft Engine (2016-32-0045/20168045)

**Meeting Room 12/13**

**Two Stroke Engine: Part 2 of 2 (SETC14)**

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.

- **3:30 p.m. - 5:00 p.m.**
  - **Organizers:** Brian J. Callahan, Achates Power Inc.; Pierre Durel, IFP School; Giovanni Ferrara, Univ. of Florence; Tomoko Sonozaki, Honda R&D Co., Ltd.
  - **Chairperson:** Giovanni Ferrara, Univ. of Florence
  - **Co-Chair:** Michiozuki Nakaogawa, Kanazawa
  - **Presentations:**
    - Thomac-L. Lago, QimsSound Technologies Europe AB
    - Mapping of Fuel Anti-Knock Requirements for a Small Remotely Piloted Aircraft Engine (2016-32-0045/20168045)
    - Mapping of Fuel Anti-Knock Requirements for a Small Remotely Piloted Aircraft Engine (2016-32-0045/20168045)

### Presentation Details

- **3:30 p.m.**
  - **Title:** New Method to Estimate the Flow Rate of LPL-EGC Using Cylinder Pressure Sensor (2016-32-0048/20168048)
  - **Authors:** Tatsuya Sugio, Shinpei Okazaki, Honda R&D Co., Ltd.; Mitsuco Keneko, FUISEIKO Co., Ltd.

- **4:00 p.m.**
  - **Title:** Application of Rapid Heat and Cool Molding to High Strength Outer Parts without Painting Treatment (2016-32-0024/20168024)
  - **Authors:** Tatsuya Sugio, Hiroko Ogasawara, Honda R&D Co., Ltd.; Mitsuco Keneko, FUISEIKO Co., Ltd.

- **4:30 p.m.**
  - **Title:** Thermoplastic Bearings for Lubricated Applications (2016-32-0021/20168021)
  - **Authors:** Stephan Gurchinoff, Solvay Specialty Polymers LLC

- **4:30 p.m.**
  - **Title:** Method for Optimizing Scooter Engine Mounts Position for Reduced Vibration (2016-32-0042/20168042)
  - **Authors:** Dhananjay Rajeapal Jayapal, Vansh Krishna, Kiran Marudhachalam, TVS Motor Co., Ltd.

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### TECHNICAL SESSIONS

**WEDNESDAY, NOVEMBER 16 - MORNING**  
Technical and Business Sessions

<table>
<thead>
<tr>
<th>TIME</th>
<th>Meeting Room 12/13</th>
<th>Meeting Room 6/7</th>
<th>Meeting Room 10/11</th>
<th>Ballroom C1/C2/C3</th>
</tr>
</thead>
</table>
| 10:30 a.m. | Engine Technology: Part 1 of 2 (SETC9) Advanced engine technologies, design, and development for thermal efficiency, performance, and emissions, including cycle simulation.  
Organizers: Yuj Anh, Yamaha Motor Co., Ltd.; Satoshi INOUE, Honda R&D Co., Ltd.; Adrian Inamizu, Laura Marchetti, Ishikawa Motori CNPI Nippon Maxima, Maggioli Control Systems  
Chairpersons: Roland Kitchberger, Graz University of Technology  
Co-Chair: Yuj Anh, Yamaha Motor Co., Ltd. | Hybrids, Electric Drives, and Fuel Cells (SETC12) This session will discuss hybrid and EV applications  
10:30 a.m. - 11:00 a.m.  
Organizers: Glenn Bower, University of Wisconsin-Madison; Jay Meldrum, Michigan Technological Univ.; Hisayuki Sugiya, Suzuki Motor Corp.  
Chair: Jay Meldrum, Michigan Technological Univ.  
Co-Chair: Hisayuki Sugiya, Suzuki Motor Corp. | Measurement and Simulation: Part 1 of 4 (SETC16) This 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 a.m. - 12:00 p.m.  
Organizers: Stephen Schmidt, Graz University of Technology; Teado Okazumi, Kubota Corp.; Shigeru Fujii, Yamaha Motor Co., Ltd.; Giovanni Fantoni, Univ. of Florence  
Chair: Stephen Schmidt, Graz University of Technology  
Co-Chair: Shigeru Fujii, 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 a.m. - 11:30 a.m.  
Organizers: Thomas L. Lago, QimaSound Technologies Europe AB; Hiroshi Yano, Kawasaki Heavy Industries, Ltd.  
Chair: Thomas L. Lago, QimaSound Technologies Europe AB  
Co-Chair: Hiroshi Yano, Kawasaki Heavy Industries, Ltd. |
| 10:50 a.m. | Assessment of Minimum Fuel Consumption Operation Strategy for Hybrid Powertrain Drive-Train by Means of Dynamic Programming Method  
(2016-32-0016/20168015)  
Bernhard Schwenkhofer, Hannes Wegerfer, Michael Zissler, Paul Rieger, Christian Zimmer, Stephan Schmidt, Graz University of Technology, Austria | Use of Anti-Windup Techniques for Control of Solid Oxide Fuel Cells  
(2016-32-0016/2018016)  
Maryam Sadeghizadeh, Feryar Jabeiri, University of California, Irvine | Analysis of Low-Cost MEMS Accelerometer and Gyroscopic Characteristics for Sensor Simulation of Motorcycle Models  
(2016-32-0027/20168027)  
Alexander Winkler, Gerhard Grabmüller, University of Applied Sciences Upper Austria | Research on Combustion Noise for Controlled Auto Ignition Engine Fueled with Natural Gas Effect of Stroke Bore Ratio and Ignition Timing  
(2016-32-0044/20168044)  
Gaku Naoe, Honda R&D Co., Ltd. |
| 11:00 a.m. | Mass Balancing Measures of a Linkage-Based Extended Expansion Engine  
(2016-32-0006/20168096)  
Patrick Fahrl, Michael Lang, Stephan Schmidt, Roland Klettenberger, Graz University of Technology | Use of Anti-Windup Techniques for Control of Solid Oxide Fuel Cells  
(2016-32-0016/2018016)  
Maryam Sadeghizadeh, Feryar Jabeiri, University of California, Irvine | Development of a GPS-Enabled Compact Data Logger to Evaluate Small Engine Usage in Actual Applications  
(2016-32-0032/2018032)  
(2016-32-0043)  
Bernhard J. Graf, Christian Hubmann, Markus Bosen, Matsi Matting, AVL List GmBH |
| 11:30 a.m. | Development of Oil-Cooled Engine for Optimization of Engine Cooling System  
(2016-32-0009/20168089)  
Koichi Tanaka, Kunio Aisii, Ansoni Kidayama, SUZUKI MOTOR CORPoration | The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00568, and also individually. To purchase visit collections.sae.org | The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00581, and also individually. To purchase visit collections.sae.org | The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00568, and also individually. To purchase visit collections.sae.org |
<table>
<thead>
<tr>
<th>TIME</th>
<th>Ballroom C1/C2/C3</th>
<th>Meeting Room 12/13</th>
<th>Meeting Room 6/7</th>
<th>Meeting Room 10/11</th>
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</thead>
</table>

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### TECHNICAL SESSIONS

#### WEDNESDAY, NOVEMBER 16 - AFTERNOON

**Technical and Business Sessions**

<table>
<thead>
<tr>
<th>TIME</th>
<th>Ballroom C1/C2/C3</th>
<th>Meeting Room 6/7</th>
<th>Meeting Room 10/11</th>
<th>Meeting Room 12/13</th>
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<tbody>
<tr>
<td>3:30 p.m.</td>
<td><strong>Emissions: Part 2 of 4 (SETC5)</strong>&lt;br&gt;Sessions on studies of exhaust emission control and the emission effects from fuels, engine controls, engine design, combustion quality, catalytic converters, diesel particulate filters, and other aftertreatment. The focus of the session is on reducing emissions and meeting international emission standards.</td>
<td><strong>HCCI: Part 2 of 2 (SETC11)</strong>&lt;br&gt;This session focuses on studies of auto-ignition combustion including HCCI and other low temperature combustion regimes. Experimental and simulation studies pertaining to various means of controlling combustion are welcome.</td>
<td><strong>Measurement and Simulation: Part 3 of 4 (SETC15)</strong>&lt;br&gt;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.</td>
<td><strong>Lubricants (SETC13)</strong>&lt;br&gt;This session contains one paper that investigates the effect of viscosity grade on engine deposits and fuel economy in motorcycles run on a chassis dynamometer.</td>
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<td>4:00 p.m.</td>
<td><strong>Development of a NOx Reduction Catalyst Based Min-NOx Strategy for Small-Scale NG Fuelled Gas Engines</strong>&lt;br&gt;(2016-32-0072/20160872)&lt;br&gt;Pino Scholl, Paul Gerstsch, Detle Nährer, Maurice Kettler, Kaisers University of Applied Sciences, Thorsen Langhorn, Karlsruhe Institute of Technology, Thomas Koch, KIT, Karlsruhe Institute of Technology&lt;br&gt;A Study of HCCI Operating Range Expansion by Applying Reaction Characteristics of Low-Carbon Alternative Fuels&lt;br&gt;(2016-32-0015/20168011)&lt;br&gt;Koji Umino, Hiroki Horiguchi, Akiko Iwasa, Yui Karasawa, Honda R&amp;D Co., Ltd.; Paschimne Yan, Ye Lu, EAS Corp</td>
<td><strong>Influence of Supercharging and EGR on Multi-stage Heat Release in an HCCI Engine</strong>&lt;br&gt;(2016-32-0009/20160709)&lt;br&gt;Shinya Takeshima, Takahiro Shira, Hiroshi Suzuki, Kento Agui, Nihon University Graduate School: Akira Ijima, Hideo Shoji, Nihon University&lt;br&gt;Comparison of Different Downsquid Strategies for 2- and 5-Cylinder Engines by the Use of 1D-CFD Simulation&lt;br&gt;(2016-32-0007/20160737)&lt;br&gt;Christian Zinner, Stefan Jend, Stephan Schmidt, Graz University of Technology</td>
<td>&lt;br&gt;Establishment of Fuel Economy Estimation Method Focused on Transmission Efficiency of Rubber Belt Type CVT&lt;br&gt;(2016-32-0038/20168080)&lt;br&gt;Takamori Ohara, Ryo Nakayama, Yuki Sakai, Honda R&amp;D Co., Ltd.</td>
<td>&lt;br&gt;The papers in this session are available in SAE Technical Paper Collection, COLL: TP-05658, and also individually. To purchase visit collections.sae.org</td>
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<td>4:30 p.m.</td>
<td><strong>Development of Base Metal Catalyst and Its Compatibility Study for Motorcycle Applications</strong>&lt;br&gt;(2016-32-0071/20168071)&lt;br&gt;Kotaro Ueno, Hironori Hidemoto, Akiko Iwasa, Yui Karasawa, Honda R&amp;D Co., Ltd.; Yuki Iwamoto, Ye Lu, BASF Corp</td>
<td><strong>Influence of EGR on Knocking in an HCCI Engine Using an Optically Accessible Engine</strong>&lt;br&gt;(2016-32-0012/20168012)&lt;br&gt;Yuki Takeshima, Takahiro Shira, Hiroshi Suzuki, Kento Agui, Akira Ijima, Hideo Shoji, Nihon University&lt;br&gt;1-D Simulation Model Developed for a General Purpose Engine&lt;br&gt;(2016-32-0030/20168030)&lt;br&gt;Tatsuya Kuboyama, Chiba University; Hidetsugu Takahashi, Konan University; Tatsuya Kuro, Toshiaki Aoki, Honda R&amp;D Co., Ltd.</td>
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| 8:30 a.m.  | The Effect of Lean Operation, Ignition Advance, and Compression Ratio on the Performance and Emissions of a Propane Fuelled Electronic Fuel Injected Engine  
(2016-22-0068/20160806)  
Josè Primo Lobo, James Howard Lee, Eric Clewald, Spencer Lionelli, Robert Gennick, Rochester Institute of Technology | Emissions: Part 3 of 4 (SETC5)  
Papers in this session pertain to studies of exhaust emission control and the emission effects from fuels, engine controls, engine design, combustion quality, catalytic converters, diesel particulate filters, and other aftertreatment. The focus of the session is on reducing emissions and meeting international emission standards.  
8:00 a.m. - 10:00 a.m.  
Organizers: Karl W. Reerk, Mot GmbH; Jan Czerniawski, Univ. of Applied Sciences Biel-Bienne; Hiromi Deguchi, Suzuki Motor Corp.; Leonid Tartakovskiy, Technion Israel Inst. of Technology  
Chairperson: Leonid Tartakovskiy, Technion Israel Inst. of Technology  
Co-Chair: Yukawa Nanz, Suzuki Motor Corp. | Engine Components (SETC7)  
This session focuses on hardware attached to the engine such as support systems, injectors, EGR valves, manifolds, turbo-chargers, water pumps, and ignition systems.  
8:00 a.m. - 10:00 a.m.  
Organizers: Adrian Imrecsy, Luca Marchetti, Istituto Motor CNIT; Takahito Murase, Kawasaki Heavy Industries, Ltd.  
Chairperson: Giovanni Ferrara, Univ. of Florence  
Co-Chair: Takahito Murase, Kawasaki Heavy Industries, Ltd. | Measurement and Simulation: Part 4 of 4 (SETC15)  
This 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.  
8:30 a.m. - 10:00 a.m.  
Organizers: Shigeru Fuji, Yamaha Motor Co., Ltd.; Stephen Schmidt, Graz University of Technology; Giovanni Ferrara, Univ. of Florence; Tadao Oekazaki, Kubota Corp.  
Chairperson: Słożysław Schmidt, Graz University of Technology  
Co-Chair: Tadao Oekazaki, Kubota Corp. |
| 9:00 a.m.  | Effect of Ethanol Blended Fuel on Two Wheeler Tailpipe Mass Emissions  
(2016-32-0076/20160876)  
Rahul Sharma, Srikant Sattur, Satish Varmuri, Chithrabanram Subramaniam, TVS Motor Co Ltd | Characterization of Small-Scale Turbochargers for Unmanned Aerial Systems  
(2016-32-0078/20160878)  
Mark H. Matalon, Paul Libo, USAF; Benjamin Nagy, University of Dayton Research Institute; Jacob Baranes, Innovative Scientific Solutions, Inc. | The Design of Eco-Driving Scheme of Energy Saving Race Car  
(2016-32-0069/20160826)  
Machihon Peng, Jianbao Weng, Guangdong Univ. of Tech. Jr. Li, Jr., Honda Automobiles China Co., Ltd. | Investigation of the Behavior of Three-Wheel Vehicles When They Pass Over a Low Road Surface  
(2016-22-0051/20160851)  
Kazunori Yamada, Takayuki Sonno, Katsuki Watashima, Takashi Kusaka, Kazuhisa Takano, Yamaha Motor Co., Ltd. |
| 9:30 a.m.  | Effect of Ethanol Blended Fuel on Fuel Injected Two Wheeler Vehicle Mass Emissions  
(2016-32-0078/20160876)  
Srikant Sattur, Satish Varmuri, Chithrabanram Subramaniam, Rahul Sharma, TVS Motor Co Ltd | Experimental Study on Optimization of the Intake Ports for Improving the Thermal Efficiency of Small Engines for Motorcycles  
(2016-32-0076/20160876)  
Datoluol Fanu, Yechihein Nnonyoza, SUZUKI MOTOR CORPORATION | The Effect of Steer Angle on the Track of a Wheel Aligning Beam  
(2016-32-0025/20160827)  
Giridhar Doppagaoli, Bipapan Dona, Kanodi, Chandran, Bhalwal, Chavan, Sagana, Singh, Ream, TVS Motor Co Ltd  
| Novel Low-Cost Experimental Procedures to Estimate Lateral Force Characteristics of a Tire  
(2016-32-0054/20160854)  
Vashisht Mohan, KVM Roy, Sai Prasen Valeguppa, TVS Motor Co., Ltd., Chandramouli Padmanabhan, IT Madras |

The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00658, and also individually. To purchase visit collections.sae.org
<table>
<thead>
<tr>
<th>TIME</th>
<th>Meeting Room 12/13</th>
<th>Meeting Room 10/11</th>
<th>Ballroom C1/C2/C3</th>
<th>Meeting Room 6/7</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>This session includes papers focused on the gaseous and particulate emissions</td>
<td>Papers in this session discuss innovations</td>
<td>Papers in this session pertain to studies</td>
<td>This session will focus on the application</td>
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<td>performance from operating small engines, both diesel and gasoline on</td>
<td>regarding airflow in the SAE Collegiate</td>
<td>of exhaust emission control and the emission</td>
<td>of technology to improve the stability, handling,</td>
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<td>oxygenated fuel blends.</td>
<td>Design Series (CDS) events. This year two papers describe</td>
<td>effects from fuels, engine controls,</td>
<td>ride and comfort of two and three wheeled</td>
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<td>Formula SAE innovations. The first discusses a novel approach to</td>
<td>engine design, combustion quality, catalytic</td>
<td>vehicles.</td>
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<td>improved fuel economy using part load</td>
<td>converters, diesel particulate filters, and</td>
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<td>mapping. The second describes a highly</td>
<td>other aftertreatment. The focus of the session</td>
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<td>integrated parallel hybrid design for the</td>
<td>is on reducing emissions and meeting</td>
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<td>Formula Hybrid competition.</td>
<td>international emission standards.</td>
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<td>10:30 a.m. - 11:30 a.m.</td>
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<td>10:30 a.m. - 11:00 a.m.</td>
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<td></td>
<td></td>
<td>Organizers: Geoffrey McCullough, Queen’s Univ. of Ballari-</td>
<td>Organizers: Kai W. Back, Mot GmbH; Jan Czarnecki,</td>
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<td></td>
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<td>fasil; Takashi Mitome, Suzuki Motor Corp.</td>
<td>Univ. of Applied Sciences Biel-Gronie;</td>
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<td>Chairperson: Jay Melhorn, Michigan</td>
<td>Hiroshi Goguchi, Suzuki Motor Corp.;</td>
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<td>Technological Univ.; Co-Chair: Takashi Mitome, Suzuki Motor Corp.</td>
<td>Leonid Tartakovsky, Technion Israel Inst. of Technology;</td>
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<td>Co-Chair: Hiroya Udada, Honda R&amp;D Co., Ltd.</td>
<td>Chairperson: Leonid Tartakovsky, Technion Israel Inst. of Technology;</td>
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<td>Co-Chair: Kojiya Nishida, Univ. of Hiroshima</td>
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<tr>
<td>10:30 a.m.</td>
<td>Research on Applying Butanol Gasoline Blended Fuel on Scooter Engine</td>
<td>The Development of a Small Restricted</td>
<td>Technology Evaluation for Two Wheeler</td>
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<td></td>
<td>(2016-32-0656/201688056)</td>
<td>Turbocharged Racecar Engine</td>
<td>Based Personal Mobility in Emerging Markets beyond 2000</td>
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<td></td>
<td>Qi-Jun Huang, Chie-Hong Chung, Yong-Fu Syu, Yuh-Yih Wu, Chao-Kai Li, National</td>
<td>(2016-32-0661/201688051)</td>
<td>(2016-32-0074/201688074)</td>
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<td>Taipei University of Technology</td>
<td>Da Wang, Min University; Dingchao Qian, China FAW Technology Ctr; Bo Wang,</td>
<td>Pradeep Ramachandra, Monohar Hasekant,</td>
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<td>Columbia University</td>
<td>Bosch Limited</td>
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<td>11:00 a.m.</td>
<td>Influences of Ethanol Content, Compression Ratio and Cylinder Material on</td>
<td>Multiscale, Multispecies Computational</td>
<td>Sida Wine Assist: The World’s First Rider</td>
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<td>rating, Speed, Warm-Up Time and Emissions of a Non-Road Small Cylinder Gasoline</td>
<td>Chemistry Methods Based on Artificial Intelligence</td>
<td>Assistance System for Two-Wheelers</td>
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<td>Engine</td>
<td>Integrated Ultra-Accelerated Quantum</td>
<td>(2016-32-0055/201688055)</td>
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<td>(2016-32-0055/201688055)</td>
<td>Molecular Dynamics for the Application to Automotive Emission Control</td>
<td>Michael Schoenherr, Mathieu Geissau,</td>
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<td>Carlos Alberto Romero, Luz Adelina Mejia, Universidad Tecnologica de</td>
<td>(2016-32-0097/201688067)</td>
<td>Robert Bosch GmbH; Arri Hino, Bosch</td>
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<td>Pereira; Yamid Camarosa, Universidad Tecnologica de Parana</td>
<td>Akira Miyamoto, Kenji Inaba, Yuki Ichikawa, Manami Sato, Pati Komuro,</td>
<td>Corporation Japan</td>
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<td>Masahiko Sato, Ryo Satoh, Patrick Bornoud, Ryoji Mikuni,</td>
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<td>Ai Suzuki, Naotake Miyamoto, Nozomi Hatakeyama, Masanori Haruyama, Tokyo Inst.</td>
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