

# Wednesday, August 28

## SC13: SI Model 1

Room B (Seminar Room 1+2), 2F East Bldg.

### Chairpersons:

Eiichi Takahashi, National Institute of Advanced Industrial Science and Technology  
Yasuo Moriyoshi, Chiba University

08:45 JSAE20199076 / SAE2019-01-2301

### Experimental Proof-of-Concept of HiL Based Virtual Calibration for a Gasoline Engine with a Three-Way-Catalyst

Feihong Xia, Frank Dorscheidt, Stefan Lücke, Jakob Andert, RWTH Aachen University / Pietro Gardini, Thomas Scheel, Vitali Walter, Jaykumar Kansagara, Raul Tharmakulasingam, Marius Böhmer, Martin Nijs, FEV Europe GmbH

09:15 JSAE20199024 / SAE2019-01-2302

### Numerical Investigation of Increasing Turbulence through Piston Geometries on Knock Reduction in Heavy Duty Spark Ignition Engines

Senthil Krishnan Mahendar, Nicola Giramondi, Varun Venkataraman, Anders Christiansen Erlandsson, KTH Royal Institute of Technology

## SC15: SI Fuel 2

Room C (Seminar Room 3), 2F East Bldg.

### Chairpersons:

Atsushi Shimada, Hitachi, Ltd.  
Long Liu, Harbin Engineering University / China Shipbuilding Power Engineering Institute Co., Ltd.

08:45 JSAE20199171 / SAE2019-01-2305

### SI Combustion Characteristics of Cyclopentane – Detailed Kinetic Mechanism

Akira Miyoshi, Hiroshima University

09:15 JSAE20199321 / SAE2019-01-2306

### Attainment of High Thermal Efficiency and Near-zero Emissions by Optimizing Injected Spray Configuration in Direct Injection Hydrogen Engines

Masakuni Oikawa, Yasuo Takagi, Yuji Mihara, Tokyo City University / Nobuyuki Kawahara, Eiji Tomita, Okayama University / Ken Naitoh, Waseda University

## EP5: Power Electronics 1

Room D (Conference Room M), 2F East Bldg.

### Chairpersons:

Yuichi Suzuki, ROKI Co., Ltd  
Shiro Yamaoka, Hitachi, Ltd.

08:45 JSAE20199122 / SAE2019-01-2309

### Development Strategy for 4th Generation PCU

Yuki Jojima, Toyota Motor Corporation

09:15 JSAE20199298 / SAE2019-01-2310

### Improvement of Motor Calibration by Using Deep Learning

Toshiki Terabe, Toshio Watari, Hiroshi Yoshimoto, Kenji Yamada, Toyota Motor Corporation

09:45 JSAE20199061 / SAE2019-01-2311

### Development of Voltage Control Unit Using a Coupled Inductor with a New Structure for Plug-in Hybrid Vehicle

Akitomo Komatsuzaki, Tatsuya Choji, Honda R&D Co.,Ltd. Automobile R&D Center / Satoshi Hashino, Keihin Corporation

## FD1: Heat Transfer

Room E (Audio/Video Study Room), 2F East Bldg.

### Chairpersons:

Tsukasa Hori, Osaka University  
Beini Zhou, Waseda University

08:45 JSAE20199173 / SAE2019-01-2313

### Wall Heat Transfer Modeling based on the Energy Equation for Zero Dimensional Engine Simulation

Yuji Harada, Kenji Uchida, Hiroyuki Yamashita, Mazda Motor Corporation

09:15 JSAE20199159 / SAE2019-01-2314

### Numerical Study of Wall Heat Transfer inside a Combustion Chamber under Conventional Diesel Combustions and Low Temperature Combustion Conditions

Mongkol Kaewbumrung, Rajamangala University of Technology Suvarnabhumi / Chalermopol Plengsa-ard, Kasetsart University

09:45 JSAE20199322 / SAE2019-01-2315

### Effect of Curvature Diameter on Secondary Flow Generation for Square Channel Spiral Coil Sub-cooled Condenser

Hardeep Singh, Mitsuhisa Ichiyanaagi, Takashi Suzuki, Sophia University

## DC15: Diesel Control 1

Room F (Conference Room A+B), 3F East Bldg.

### Chairpersons:

Yutaka Murata, Honda R&D Co., Ltd  
Michael Weissbaeck, AVL List GmbH

08:45 JSAE20199037 / SAE2019-01-2318

### Diesel Engine Combustion Control with Onboard Calibration by Using Feedback Error Learning

Makoto Eguchi, Naoki Fukuda, Hiromitsu Ohmori, Keio University / Motoki Takahashi, Yudai Yamasaki, Shigehiko Kaneko, The University of Tokyo

09:15 JSAE20199129 / SAE2019-01-2319

### Adaptive Output Feedback Control of Premixed Diesel Combustion Using a Discrete Dynamics Model

Seiya Fujii, Ikuro Mizumoto, Kumamoto University / Motoki Takahashi, Yudai Yamasaki, Shigehiko Kaneko, The University of Tokyo

## DC17: Diesel Spray 2

Room G (Conference Room C), 3F East Bldg.

### Chairpersons:

Koji Yasutomi, Hino Motors Ltd.  
Joonsik Hwang, Sandia National Laboratories

08:45 JSAE20199295 / SAE2019-01-2322

### A Study of Injection Directions on Improvement of Engine Performance and NOx Emission in A Low-speed Marine Engine

Qian Sun, Wenxia Ji, Zhen Huang, Lei Zhu, Shanghai Jiao Tong University

09:15 JSAE20199301 / SAE2019-01-2323  
**Effects of Ratio and Dwell of Split Injection on Fuel Spray and Mixture Formation Process under Evaporating, Non-reacting Condition**  
Jaeheun Kim, Shinichi Kakami, Keiya Nishida, Yoichi Ogata, Hiroshima University

#### E7: SI After Treatment 1

Room H (Conference Room D), 3F East Bldg.

#### Chairpersons:

Hitoshi Onodera, Nissan Motor Co., Ltd.  
Bungo Kawaguchi, Toyota Motor Corporation

08:45 JSAE20199090 / SAE2019-01-2326  
**Modeling Three-way Catalyst Converters during Cold Starts and Potential Improvements**

Xieyang Yan, Ryota Sone, Ryoya Inoue, Jin Kusaka, Waseda University / Katunori Umezawa, Yasuhiro Kondo, AZAPA Co. LTD

09:15 JSAE20199180 / SAE2019-01-2327  
**Catalyst Design Study of Detailed Reaction Model including Gas Diffusivity into the Washcoat**

Osami Yamamoto, Yuichi Matsuo, Shinichi Tosa, Tatsuya Okayama, Honda R&D Co. Ltd., / John Tolsma, Zhiwei Zhang, Bradley Niesner, RES Group Inc.

09:45 JSAE20199132 / SAE2019-01-2328  
**Studies on Characteristics of Nanoparticles Generated in a Gasoline Direct-Injection Engine**

Kunio Tabata, Motonobu Takahashi, Kenji Takeda, Kazuya Tsurumi, HORIBA, Ltd. / Yasuyuki Kiya, Shota Tobe, Akira Ogura, Subaru Corporation

#### L7: Engine Bearings

Room I (Conference Room 2), 3F West Bldg.

#### Chairpersons:

Colin McALeese, Daido Metal Co., Ltd.  
Yuichiro Kajiki, Taiho Kogyo Co., Ltd.

08:45 JSAE20199276 / SAE2019-01-2331  
**Advanced Model Experiment for the Research of Journal Bearings with Cavitation**

Peter Reinke, Marcus Schmidt, Tom Beckmann, University of Applied Sciences and Arts Hildesheim/Holzminden/Göttingen

09:15 JSAE20199091 / SAE2019-01-2332  
**A Study of Measurement for Oil Film at the Bearing of the Small End of Diesel Engine Connecting Rod**

Shotaro Suzuki, Shota Yamada, Akemi Ito, Tokyo City University

09:45 JSAE20199283 / SAE2019-01-2333  
**Dynamic Oil Pressure in Connecting Rod Bearings and Their Influence on Innovative Cranktrain Technologies**

Denis Pendovski, Stefan Pischinger, RWTH Aachen University

#### SC14: SI Model 2

Room B (Seminar Room 1+2), 2F East Bldg.

#### Chairpersons:

Eiichi Takahashi, National Institute of Advanced Industrial Science and Technology  
Yasuo Moriyoshi, Chiba University

10:30 JSAE20199236 / SAE2019-01-2303  
**The Body Vibration Reduction Technology of Hybrid Electric Vehicle on Engine Re-start Situation**

Kenichiro Ogata, Satoshi Watanabe, Kanako Shimojo, Keiji Tojo, Tatsuya Ide, Shoji Kusunoki, Honda R&D Co.,Ltd.

11:00 JSAE20199261 / SAE2019-01-2304  
**Technique for Front-loading Countermeasures against Deterioration of Sound Quality in Vehicle Interior due to Rapid Combustion in an SI Engine**  
Kenji Torii, Tatsunori Tsuruta, Honda R&D Co., Ltd

#### SC16: SI Fuel 3

Room C (Seminar Room 3), 2F East Bldg.

#### Chairpersons:

Atsushi Shimada, Hitachi, Ltd.  
Long Liu, Harbin Engineering University / China Shipbuilding Power Engineering Institute Co., Ltd.

10:30 JSAE20199077 / SAE2019-01-2307  
**Combustion Characteristics of Oxygenated Fuels Ethanol -and Butanol- gasoline Fuel Blends, and Their Impact on Performance, Emissions and Soot Index**  
Patricia Anselmi, Mickael Matrat, Laurie Starck, Florence Duffour, IFP Energies nouvelles

11:00 JSAE20199100 / SAE2019-01-2308  
**Modeling the Impact of Alternative Fuel Properties on Light Vehicle Engine Performance and Greenhouse Gases Emissions**  
Yuri Kroyan, Michal Wojcieszuk, Martti Larmi, Ossi Kaario, Kai Zenger, Aalto University

#### EP6: Power Electronics 2

Room D (Conference Room M), 2F East Bldg.

#### Chairpersons:

Shiro Yamaoka, Hitachi, Ltd.  
Yuichi Suzuki, ROKI Co., Ltd

10:30 JSAE20199233 / SAE2019-01-2312  
**Development of Motor Cooling Technology in Hybrid Vehicles**  
Takashi Matsumoto, Hiroki Kato, Keiji Takizawa, Takahisa Yashiro, Sho Okazaki, Kenta Tabuchi, Toyota Motor Corporation

11:00 JSAE20199271 / SAE2019-01-2368  
**Design Methodology for Motor Thermal Management in Vehicle Electrification**  
Yoshikazu Tsuruoka, Masaaki Kubo, Tsuyoshi Yamamuro, Nissan Motor Co., Ltd. / Kengo Sakao, NISSAN AUTOMOTIVE TECHNOLOGY CO., LTD.

#### SC17: Lean Burn 2

Room E (Audio/Video Study Room), 2F East Bldg.

#### Chairpersons:

Tomonori Urushihara, Mazda Motor Corporation  
Tatsuya Kuboyama, Chiba University

10:30 JSAE20199258 / SAE2019-01-2316  
**Study on Flame Characteristics under Conditions of Stratified Flame Ignition Hybrid Combustion**  
Jian Niu, Tao Chen, Hui Xie, Yuan Yao, Kang Song, Tianjin University / Xinyan Wang, Hua Zhao, Brunel University London

11:00 JSAE20199250 / SAE2019-01-2317  
**Study for Ignition Characteristics and Potential of Gasoline Autoignition Combustion with Spark Assist**  
Kaname Naganuma, Koki Tanaka, Tsubasa Ito, Kanazawa Institute of Technology / Yoshimitsu Kobashi, Hokkaido University

## DC16: Diesel Control 2

Room F (Conference Room A+B), 3F East Bldg.

### Chairpersons:

Michael Weissbaeck, AVL List GmbH  
Yutaka Murata, Honda R&D Co., Ltd

10:30 JSAE20199184 / SAE2019-01-2320

### Online Automatic Adaptation for Model-based Control of Diesel Engine

Jianan Cao, Motoki Takahashi, Yudai Yamasaki, Shigehiko Kaneko, The University of Tokyo

11:00 JSAE20199260 / SAE2019-01-2321

### Two-Degree-of-Freedom Controller Design for Diesel Engine Airpath System Considering Dynamics of Turbocharger and Manifolds

Mitsuo Hirata, Tomofumi Hayashi, Teruhiko Asahi, Utsunomiya University / Motoki Takahashi, Yudai Yamazaki, Shigehiko Kaneko, The University of Tokyo

## DC18: Diesel Spray 3

Room G (Conference Room C), 3F East Bldg.

### Chairpersons:

Joonsik Hwang, Sandia National Laboratories  
Koji Yasutomi, Hino Motors Ltd.

10:30 JSAE20199093 / SAE2019-01-2324

### Improvement of Hybrid Scheme for WAVE-MTAB Model and Analytical Study of Diesel Spray Using Theory on the Spray Similarity

Motoki Hosogi, Eriko Matsumura, Jiro Senda, Doshisha University / Tsukasa Hori, Osaka University

11:00 JSAE20199331 / SAE2019-01-2325

### One-dimensional Modelling and Mixing Process Analysis of Diesel Spray with Multiple-injection

Long Liu, Qihao Mei, Qian Xiong, Harbin Engineering University

## E8: SI After Treatment 2

Room H (Conference Room D), 3F East Bldg.

### Chairpersons:

Hitoshi Onodera, Nissan Motor Co., Ltd.  
Bungo Kawaguchi, Toyota Motor Corporation

10:30 JSAE20199197 / SAE2019-01-2329

### Effects of Exhaust Gas Hydrogen Addition and Oxygenated Fuel Blends on the Light-Off Performance of a Three-Way Catalyst

Viktor Kärcher, Paul Hellier, Nicos Ladommatos, University College London

11:00 JSAE20199166 / SAE2019-01-2330

### Modelling Pressure Losses in Gasoline Particulate Filters in High Flow Regimes and Temperatures

Marco Prantoni, Svetlana Aleksandrova, Humberto Medina, Jonathan Saul, Stephen Benjamin, Coventry University / Oscar Garcia Afonso, Jaguar Land Rover

## L8: Engine Oil Consumption 1

Room I (Conference Room 2), 3F West Bldg.

### Chairpersons:

Hideaki Mitsui, Afton Chemical Japan Corporation  
Akihiko Azetsu, Tokai University

10:30 JSAE20199036 / SAE2019-01-2334

### Study on Ring Conformability under Bore Deformation

Takashi Suzuki, Hiroshi Yaguchi, Toyota Motor Corporation

11:00 JSAE20199253 / SAE2019-01-2335

### Experimental Study of Cylinder Oil Stripping Behavior at the Scavenge Port of a Low-speed Two-stroke Engine

Min Pan, Liyan Feng, Zhen Gong, Zhengran Yu, Hongjie Sun, Zixin Wang, Peng Yan, Dalian University of Technology

## L9: Lubricants for Drivetrains

Room C (Seminar Room 3), 2F East Bldg.

### Chairpersons:

Masayuki Ochiai, Tokai University  
Hiroyuki Suzuki, Hino Motors Ltd.

13:00 JSAE20199134 / SAE2019-01-2336

### Low Friction and Low Viscosity Final Drive Oil

Tomoo Kubo, Naoto Akie, Yuji Okamoto, Sachiko Okuda, Takumaru Sagawa, Nissan Motor Co., Ltd. / Mona Ariyama, Hitoshi Komatsubara, JXTG Nippon Oil & Energy Corporation

13:30 JSAE20199085 / SAE2019-01-2337

### Understanding Base Oils and Lubricants for Electric Drivetrain Applications

Yungwan Kwak, Christopher Cleveland, Atanu Adhvaryu, Xinggao Fang, Afton Chemical Corporation / Susie Hurley, Afton Chemical Limited / Tsuneo Adachi, Afton Chemical Japan Corporation

14:00 JSAE20199311 / SAE2019-01-2338

### Lubricants Technology Applied to Transmissions in Hybrid Electric Vehicles and Electric Vehicles

Keiichi Narita, Daisuke Takekawa, Idemitsu Kosan Co., Ltd.

## EP7: Hybrid System Control

Room D (Conference Room M), 2F East Bldg.

### Chairpersons:

Keiki Tanabe, Mitsubishi Fuso Truck and Bus Corporation  
Taiichi Onoyama, Nissan Motor Co., Ltd.

13:00 JSAE20199015 / SAE2019-01-2341

### Real-time Long Horizon Model Predictive Control of a Plug-in Hybrid Vehicle Power-Split Utilizing Trip Preview

Mike Huang, Toyota Motor North America, R&D / Shengqi Zhang, KForce / Yushi Shibaika, Toyota Motor Corporation

13:30 JSAE20199264 / SAE2019-01-2342

### Active Damping Control of Torsional Vibration in a Diesel Hybrid Powertrain

Lei Du, Fuyuan Yang, Yaodong Hu, Liangfei Xu, Tsinghua University

14:00 JSAE20199269 / SAE2019-01-2343

### Study of New HILS Test Method with Combination of the Virtual Hybrid Electric Powertrain Systems and the Engine Test Bench

Nobunori Okui, Masayuki Kobayashi, National Traffic Safety and Environment Laboratory

## FD2: Diagnostics and Modelling

Room E (Audio/Video Study Room), 2F East Bldg.

### Chairpersons:

Makoto Nagaoka, HORIBA Ltd.  
Akira Iijima, Nihon University

13:00 JSAE20199279 / SAE2019-01-2344

### Gasoline Fuel Sprays Characterization at Very-High Injection Pressures

Alessandro Montanaro, Luigi Allocca, Giovanni Meccariello, Istituto Motori, CNR

13:30 JSAE20199200 / SAE2019-01-2345

### High EGR Rate, Lean TRF-air Turbulent Combustion with Tumble Flow in a Constant Volume Vessel

Takahiro Konagamitsu, Yuki Minamoto, Masayasu Shimura, Mamoru Tanahashi, Tokyo Institute of Technology

14:00 JSAE20199315 / SAE2019-01-2346

### Impact of Dynamic Exhaust Valve Modelling

Ted Holmberg, Andreas Cronhjort, KTH Royal Institute of Technology / Ola Stenlås, Scania CV AB

14:30 JSAE20199243 / SAE2019-01-2347

### Combined Scattering and Imaging Diagnostics to Detect and Quantify Fuel Contaminants

Julien Manin, William D. Bachalo, Reza Karami, Artium Technologies, Inc.

## E9: Fuel Effect on Emission

Room H (Conference Room D), 3F East Bldg.

### Chairpersons:

Daisuke Kawano, Osaka Sangyo University  
Taku Tsujimura, National Institute of Advanced Industrial Science and Technology

13:00 JSAE20199226 / SAE2019-01-2351

### Impact of Engine Oil Additives on Nanostructure and Oxidation Kinetics of Diesel and Synthetic Biodiesel Particulate Matters Using Electron Microscopy

Phyozin Koko, Preechar Karin, Chinda Charoenphonphanich, King Mongkut's Institute of Technology Ladkrabang / Nuwong Chollacoop, National Science and Technology Development Agency / Katsunori Hanamura, Tokyo Institute of Technology

13:30 JSAE20199297 / SAE2019-01-2352

### Effects of Coolant Temperature and Fuel Properties on Soot Emission from a Spark-ignited Direct Injection Gasoline Engine

Qian Xiong, Harbin Engineering University and Chiba University / Ankur Gupta, Tatsuya Kuboyama, Yasuo Moriyoshi, Hisakazu Suzuki, Chiba University / Takuya Takeda, Kazuhiro Akihama, Nihon University / Jun Hashimoto, Oita University

14:00 JSAE20199274 / SAE2019-01-2353

### An Efficient, High-Precision Vehicle Testing Procedure to Evaluate the Efficacy of Fuel-Borne Friction Modifier Additives

Shuhui Yow, Pauline Ziman, Sue J. Smith, Shell Global Solutions / Marc Walter, BASF SE / Robert J. Bacchi, BASF Corporation

14:30 JSAE20199130 / SAE2019-01-2354

### Prediction of Oil Dilution by Post-injection in DPF Regeneration Mode

Takayuki Ito, Takaaki Kitamura, Japan Automobile Research Institute / Hirokazu Kojima, National Institute of Advanced Industrial Science and Technology / Hiroshi Kawanabe, Kyoto University

## L11: Engine Oil Consumption 2

Room I (Conference Room 2), 3F West Bldg.

### Chairpersons:

Motoichi Murakami, Toyota Motor Corporation  
Hirotuna Sato, Hino Motors Ltd.

13:00 JSAE20199045 / SAE2019-01-2359

### Imaging and Simulation of Oil Transport Phenomena in the Upper Piston Skirt Region

Jonathan Schöler, Sebastian Schiefer, Stefan Wigger, Hans-Jürgen Füber, Volker Lagemann, Daimler AG / Sebastian A. Kaiser, University of Duisburg-Essen

13:30 JSAE20199304 / SAE2019-01-2360

### A Study on the Function of Oil Drain Holes in the Oil Ring Groove of a Piston and Their Effect on Oil Consumption

Ken Miura, Takaki Ohashi, Hiroki Hasegawa, Akemi Ito, Koichi Nishibe, Tokyo City University

14:00 JSAE20199292 / SAE2019-01-2361

### Numerical Study on Pressure Generation Mechanism of Oil Film under Oil Control Ring

Susumu Degawa, Wataru Kobayashi, Koji Kikuhara, Koichi Nishibe, Akemi Ito, Tokyo City University

14:30 JSAE20199087 / SAE2019-01-2362

### A Computational Study of the Lubricant Transport into Oil Control Ring Groove

Tianshi Fang, Zhen Meng, Sebastian Ahling, Tian Tian, Massachusetts Institute of Technology

## L10: Tribology for Drivetrains

Room C (Seminar Room 3), 2F East Bldg.

### Chairpersons:

Shigeki Matsui, JXTG Nippon Oil & Energy Corporation  
Hiroyuki Suzuki, Hino Motors Ltd.

15:15 JSAE20199081 / SAE2019-01-2339

### Prediction of Friction Durability in Off-Road Applications Based on Mechanistic Understanding of the Effects of Fluids and Surfaces on Clutch Friction

Mark Devlin, Atanu Adhvaryu, Afton Chemical Corporation / Timothy Cameron, Miami University / Shinpei Kariwa, Toshiharu Abekawa, Komatsu Ltd.

15:45 JSAE20199181 / SAE2019-01-2340

### Advanced Bench Test Methodology for Generating Wet Clutch Torque Transfer Functions for Enhanced Drivability Simulations

Hiral Haria, Yuji Fujii, Gregory M. Pietron, Anna Sun, Ford Motor Company / Takahiro Tsuchiya, Masatoshi Miyagawa, Shinji Nakamura, Matthew Wendel, Hiroya Miyoshi, F.C.C. CO., LTD. / Pengchuan Wang, Nikolaos Katopodes, University of Michigan

## FD3: Chemical Kinetics

Room E (Audio/Video Study Room), 2F East Bldg.

### Chairpersons:

Akira Miyashi, Hiroshima University  
Yasuyuki Sakai, University of Fukui

15:15 JSAE20199136 / SAE2019-01-2348

### Analysis of Reaction Mechanism Preparing Hot Ignition Observed in Homogeneous Compression of n-Heptane Air Mixture

Muhammad Safwan bin Mazelan, Atsumu Tezaki, Sahadev Thapa, University of Toyama

15:45 JSAE20199060 / SAE2019-01-2349

### Development of Non-equilibrium Plasma and Combustion Integrated Model for Reaction Analysis

Masahiro Horikoshi, Tatsuya Tanaka, Keisuke Okihama, Mazda Motor Corporation / Yohei Kon, Hidemasa Takana, Tohoku University

16:15 JSAE20199109 / SAE2019-01-2350

### Development of an Iso-Octane Skeletal Combustion Mechanism based on Primary Sensitive Reactions

Xiangzan Meng, Yi Meng, Hitachi (China) Research & Development Corporation

## E10: Engine Deposit

Room H (Conference Room D), 3F East Bldg.

### Chairpersons:

Yoshinaka Takeda, National Institute of Advanced  
Industrial Science and Technology  
Yasunori Sogawa, JXTG Nippon Oil & Energy Corporation

15:15 JSAE20199017 / SAE2019-01-2355

### A New Methodology to Study the Mechanisms of Combustion-Chamber Deposit Formation and the Effects of Engine Parameters on the Quantity and Morphology of Combustion-Chamber Deposits

Louise Ganeau, Maira Alves Fortunato, Guillaume Pilla, Gilles Bruneaux, IFP Energies nouvelles / Christof Schulz, University of Duisburg-Essen

15:45 JSAE20199078 / SAE2019-01-2356

### The Investigation of the Structure and Origins of Gasoline Direct Injection (GDI) Deposits

James Barker, J Reid, S Mulqueen, Innospec / G J Langley, E M J Wilmot, University of Southampton / S Vadodaria, University of Warwick / J Castle, University of Sheffield / J Whitaker, University of York

16:15 JSAE20199042 / SAE2019-01-2357

### Effects of Cooled Wall Temperature and HC Concentration on Separation Behavior of PM Deposit Layer in an EGR Cooler

Yudai Itoh, Takeshi Murayama, Yoshio Zama, Tomohiko Furuhashi, Gunma University

16:45 JSAE20199302 / SAE2019-01-2358

### Effect of Exhaust Gas Composition on EGR Deposit Formation

Satoshi Sakaida, Shogo Kimiyama, Takumi Sakai, Kotaro Tanaka, Mitsuru Konno, Ibaraki University / Koichi Kinoshita, National Institute of Advanced Industrial Science and Technology / Satoshi Kodama, Shinsuke Mori, Tokyo Institute of Technology

## L12: Engine Oil Transport

Room I (Conference Room 2), 3F West Bldg.

### Chairpersons:

Tsuneaki Ishima, Gunma University  
Hirotuna Sato, Hino Motors Ltd.

15:15 JSAE20199121 / SAE2019-01-2363

### Oil Transport Phenomena during Extreme Load Transients inside the Power Cylinder unit as Investigated by HS-2DLIF (High-Speed 2D Laser-Induced Fluorescence)

Sebastian Ahling, Tian Tian, Massachusetts Institute of Technology

15:45 JSAE20199131 / SAE2019-01-2364

### Study of the Effects of Oil Supply and Piston Skirt Profile on Lubrication Performance in Power Cylinder Systems

Zhen Meng, Sebastian Ahling, Tian Tian, Massachusetts Institute of Technology

16:15 JSAE20199312 / SAE2019-01-2365

### Measurement of Oil Transport Phenomena around Piston in Optical Engine Using Photochromic Visualization Technique (Visualization and Quantification of Oil Film Behavior under Low Speed and Low Oil Temperature Condition)

Kazaki Kuratsuji, Akihiko Azetsu, Tokai University / Seiji Tamaki, Tetsuya Nangou, TPR CO., LTD

16:45

JSAE20199135 / SAE2019-01-2366

### Development of a New Method to Measure the Rotational Force Acting on the Piston Rings of a Gasoline Engine

Kenta Tomizawa, Akemi Ito, Tokyo City University