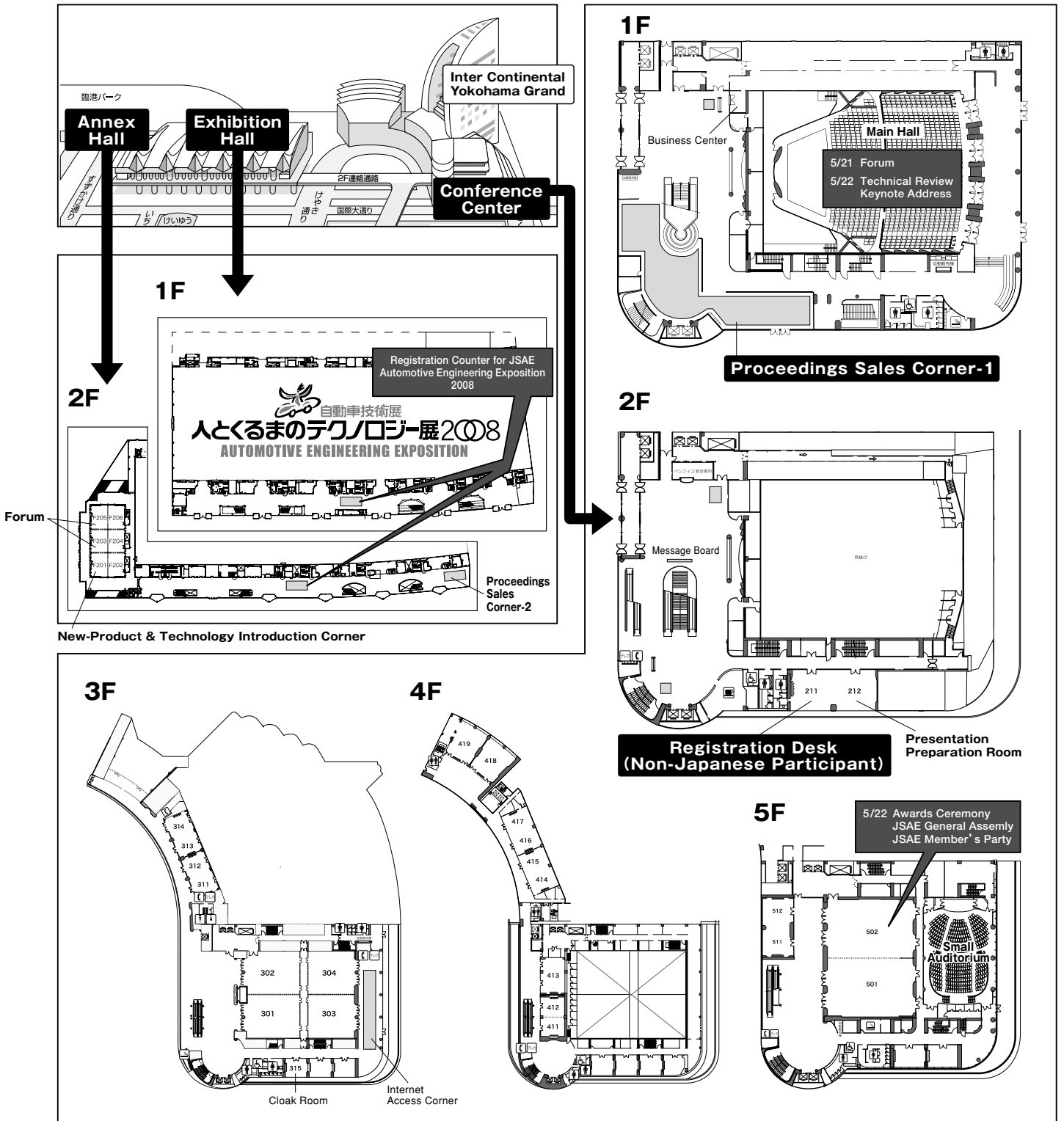


2008 JSAE Annual Congress Program

May 21(Wed.) – 23(Fri.), 2008 / Pacifico Yokohama

Floor Plan



Society of Automotive Engineers of Japan, Inc.

Information

Registration

Registration Desk (Non-Japanese Participants)
Opening-Closing Time

Room 211, 2F Conference Center

May 21 (Wed.)	8:00 - 18:00
May 22 (Thu.)	8:30 - 17:00
May 23 (Fri.)	8:30 - 17:00

Registration Fees

JSAE / FISITA member	¥5,000
JSAE / FISITA Student member	¥1,000
None member	¥15,750
Session chair	Gratis

Proceedings Sales

Proceedings Sales Corner-1
Opening-Closing Time

Elevator Hall, 1F Conference Center

May 21 (Wed.)	8:00 - 18:00
May 22 (Thu.)	8:30 - 17:00
May 23 (Fri.)	8:30 - 17:45

Proceedings Sales Corner-2
Opening-Closing Time

Concourse, 2F Exhibition Hall

May 21 (Wed.) - 23 (Fri.)	10:00 - 17:00
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Proceedings Price

JSAE / FISITA member	¥840 each
None member	¥1,050 each

Purchase of the proceedings shall be either in cash of Japanese Yen or by major credit card such as AMEX, Visa and Master.

Cloak Room

Cloak Room
Opening-Closing Time

Room 315, 3F Conference Center

May 21 (Wed.)	8:00 - 18:30
May 22 (Thu.) - 23 (Fri.)	8:30 - 18:00

Cloak service is one-day-basis so that no items are taken overnight, and also please keep your important belongings with you.

Presentation Preparation Room

Presentation Preparation Room
Opening-Closing Time

Room 212, 2F Conference Center

May 21 (Wed.)	8:00 - 17:00
May 22 (Thu.) - 23 (Fri.)	8:30 - 17:00

The room is provided for Speakers to prepare for their presentations.

Internet Access Corner

Internet Access Corner
Opening-Closing Time

Foyer, 3F Conference Center

May 21 (Wed.) - 22 (Thu.)	8:00 - 17:30
May 23 (Fri.)	8:30 - 17:00

**JSAE AUTOMOTIVE
ENGINEERING EXPOSITION 2008**

May 21 (Wed.)–23 (Fri.), 2008 10:00 - 17:00
Exhibition Hall, Pacifico Yokohama
Admission free, but registration required at
Registration Counter, 1/2F Concourse, the
Exhibition Hall if you are NOT attendees of the 2008
JSAE Annual Congress.

May 22 (Thu.) Technical Session Timetable (Final version)

As of April 17, 2008

Room	Registration Desk for Speakers, Session Chairs and Non-Japanese Participant: Conference Center, Room 211, 2F Proceedings Sales Counter: Conference Center, EV Hall, 1F													
	301 (3F)	302 (3F)	303 (3F)	304 (3F)	311+312 (3F)	313+314 (3F)	414+415 (4F)	416+417 (4F)	501 (5F)	502 (5F)	Small Auditorium (5F)	Main Hall (1F)	Annex Hall (F201,F202 F203+F204 F205+F206)	Exhibition Hall
9:30	158 Driver's 159 Workload 160 [Proceedings No.83-08] (No.156,157 Cancelled) 10:45 P.10 170 171 [Proceedings No.35-08] P.11	166 Active Safety 167 Simulation 168 169 170 171 [Proceedings No.37-08] P.11 11:10	176 Advanced 177 Gasoline Engine 178 Technology 179 (New Technology I) [Proceedings No.39-08] P.11 11:10	185 The Latest 186 CAF and Test 187 Technologies 188 for NVH IV 189 [Proceedings No.39-08] (No.187 Cancelled) P.12 11:10	194 Injury 195 Outcome & 196 Dummy 197 198 199 [Proceedings No.41-08] P.12 12:10	203 Powertrain 205 Tribology 206 207 208 209 [Proceedings No.43-08] (No.204 Cancelled) P.12 12:10	210 Aerodynamics 211 & CFD 212 213 214 215 [Proceedings No.44-08] P.13 13:00	220 Metallic 221 Materials III 222 223 [Proceedings No.46-08] P.13 11:10	224 Diesel 225 Combustion I 226 227 228 229 [Proceedings No.47-08] P.13 12:10	230 231 232 233 234 [Proceedings No.48-08] P.13 13:00	235 EFV21 236 Project I 237 238 239 [Proceedings No.49-08] P.13 11:35	10:00 New-Product & Technology Introduction Corner 17:00	Forum: How can we possibly reduce fatalities by use of traffic accident prediction simulation technologies? 12:30	Forum: Japan-China Automotive Technology 10:00 The 2008 Automotive Engineering Exposition 17:00
13:00	161 Nano-Particle 162 in Exhaust 163 from Automotive 164 165 [Proceedings No.34-08] P.11 15:05	172 Driving 173 Simulator 174 175 176 [Proceedings No.36-08] P.11 14:40	180 Advanced 181 Gasoline Engine 182 Technology 183 (New Technology II) 184 [Proceedings No.39-08] P.11 15:05	191 The Latest 192 CAF and Test 193 Technologies 194 for NVH V 195 [Proceedings No.40-08] (No.190 Cancelled) P.12 14:15	200 Human 201 Modeling & 202 Crash Analysis [Proceedings No.42-08] P.12 14:15	216 Climate 217 Control 218 219 [Proceedings No.45-08] P.13 14:40	224 Diesel 225 Combustion II 226 227 228 229 [Proceedings No.48-08] P.13 15:05	230 231 232 233 234 [Proceedings No.50-08] P.14 15:05	240 EFV21 241 Project II 242 243 244 [Proceedings No.50-08] P.14 15:05	15:10 Technical Review 16:10 16:20 Keynote Address 17:20	17:20 JSAE Member's Party 19:10			
15:00														
17:00														

Grant of JSAE Engineering Level Certification
The Ceremonies of the Best Technical
Paper Presentation Award for the 2007
Spring/Fall Congress & the 58th JSAE Award

* Forums to be presented in Japanese
* Technical Review and Keynote Address to be presented in Japanese

* Presentation time: 25-minute each, 15-min. presentation and 10-min. for Q & A.
* Cancellation: If a paper is withdrawn after the final program, the presentation time will be a 25-min. break.
* English-speaking-presentation: the presentation numbers with square circles.
* Proceedings: Sales at EV hall, 1F Conference Center during the congress only. Requests for pre-purchase are not taken.

May 23 (Fri.) Technical Session Timetable (Final version)

As of April 17, 2008

Room	Registration Desk for Speakers, Session Chairs and Non-Japanese Participant: Conference Center, Room 211, 2F Proceedings Sales Counter: Conference Center, EV Hall, 1F														
	Pacifico Yokohama			Annex Hall		Small Auditorium (5F)		Exhibition Hall		Exhibition Hall					
	301 (3F)	302 (3F)	303 (3F)	304 (3F)	311+312 (3F)	313+314 (3F)	414-415 (4F)	416-417 (4F)	501 (5F)	502 (5F)	511+512 (5F)	F201,F202	F203+F204	F205+F206	
9:30	245 Driver 246 Monitoring 247 10min. Break 248 249 250 251 [Proceedings No.51-08] P.14	261 Driver 262 Support 263 System I 264 265 [Proceedings No.54-08] P.15	277 Vehicle 278 Dynamic 279 Sensing & Control 280 281 [Proceedings No.57-08] P.15 (No.276 Cancelled)	292 Sound 293 Quality 294 10min. Break 295 296 297 [Proceedings No.60-08] P.16	307 Noise & 308 Vibration 309 Riding Quality I 310 Riding Quality II 311 312 [Proceedings No.65-08] P.16 (No.310,311,312 Cancelled)	322 Energy 323 Saving & 324 Eco-Drive 325 326 327 [Proceedings No.66-08] P.17 (No.326 Cancelled)	333 Engine 334 Components I 335 336 337 [Proceedings No.68-08] P.17 (No.335 Cancelled)	333 Body 334 Development 346 [Proceedings No.70-08] P.18 (No.345 Cancelled)	353 Up-to-date 354 Transmission 355 Technology I 356 357 [Proceedings No.73-08] P.18 (No.357 Cancelled)	363 Diesel Exhaust 364 Emission 365 Control 366 367 [Proceedings No.76-08] P.19 (No.368,373 Cancelled)	382 SI Engine 383 Technology 384 385 386 [Proceedings No.81-08] P.20	10:00	Forum:Leading-edge of Automotive Materials	10:00	The 2008 Automotive Engineering Exposition
13:00	252 Older 253 Driver 254 255 256 257 [Proceedings No.52-08] P.14 (No.255 Cancelled)	266 Driver 267 Support 268 System II 10min. Break 269 270 271 [Proceedings No.55-08] P.15	282 Dynamics 283 and Safety 284 of Motorcycles 285 286 [Proceedings No.58-08] P.15 (No.285 Cancelled)	298 The Latest 299 CAP and Test 300 Technologies 301 for NVH VI [Proceedings No.61-08] P.16 (No.299 Cancelled)	313 Advanced 314 Technology for 315 Manufacturing 316 Engineering 317 318 [Proceedings No.64-08] P.17 (No.315 Cancelled)	328 Innovation 329 of Guidance 330 and Control 331 332 [Proceedings No.67-08] P.17	338 Engine 339 Components II 340 341 342 [Proceedings No.69-08] P.17	Development Analyses Evaluation [Proceedings No.71-08] P.18 No.347,349 Cancelled No.348 moves to P.18 13:40 348 Safety 350 351 [Proceedings No.72-08] P.18 (No.352 Cancelled)	358 Up-to-date 359 Transmission 360 Technology II 361 362 [Proceedings No.74-08] P.18	374 Diesel 375 Spray I 376 377 [Proceedings No.77-08] P.19	388 Catalyst 389 Technology 400 401 402 [Proceedings No.80-08] P.19	11:30	Forum: Motor Sports	11:30	
15:00	272 Driver 273 Support 274 System III 275 276 [Proceedings No.56-08] P.15	287 Steering 288 System 289 290 291 [Proceedings No.59-08] P.16	14:40 15:00 15:10 15:30	302 Noise & 303 Vibration 304 Riding Quality II 305 306 [Proceedings No.62-08] P.16	317 Comfortable 318 Cabin 319 320 321 322 [Proceedings No.65-08] P.17	15:05 15:05 15:05 15:25 15:25 383 Advanced 384 Gasoline 385 Engine 386 Technology 387 (Component Technology) [Proceedings No.75-08] P.18	14:40 14:55 15:00 15:00 15:10 15:30	378 Diesel 379 Spray II 381 [Proceedings No.78-08] P.19 (No.380 Cancelled)	403 Gasolous 404 Fuel and 405 Combustion 406 407 [Proceedings No.83-08] P.20	17:00	17:00	17:05	17:00	17:30	

* Presentation time: 25-minute each, 15-min. presentation and 10-min. for Q & A.
 * Cancellation: If a paper is withdrawn after the final program, the presentation time will be a 25-min. break.
 * English-speaking-presentation: the presentation numbers with square circles.
 * Proceedings: Sales at EV hall, 1F Conference Center during the congress only. Requests for pre-purchase are not taken.
 * Session No.71-08 is a cancellation. No.348 moves to session No.72-08.

* Forums to be presented in Japanese

JSAE Annual Congress(Spring), Final Program

- This program is based on the data as of April 17, 2008. If a paper is withdrawn after this issue, the presentation time will be a 25-min break.
- The paper titles with "Cancelled" have been withdrawn after Feb.1, 2008.
- The presentations with circled numbers are presented in English.
- <OS> is the organized session focused on the specific themes.

5.21 (Wed)

301 (3F)

[9:30~12:35]

1-08 Driver Behavior I

<OS> Chairperson: Ichiro Kageyama (Nihon University)

- 1 Analysis of Driving Behaviors When Entering a Non-Signalized Intersection Through Simulation of Driver Model Including Inner Factors**
Masanori Takemoto · Hiroaki Kosaka · Hirokazu Nishitani (Nara Institute of Science and Technology)
Masaaki Uechi · Kazuya Sasaki (Toyota Motor Corporation)
- 2 Educational Method Based on Evaluation of Driving Behavior for Fundamental Improvement When Entering a Non-Signalized Intersection**
Masanori Takemoto · Takeshi Matsumoto · Hiroaki Kosaka · Hirokazu Nishitani (Nara Institute of Science and Technology)
Masaaki Uechi · Kazuya Sasaki (Toyota Motor Corporation)
- 3 Comparison of car's speed passing through a non-signalized intersection without right of way among different intersection environments**
Hiroaki Kosaka · Takuya Hashikawa · Masanori Takemoto · Hirokazu Nishitani (Nara Institute of Science and Technology)
Masaaki Uechi · Kazuya Sasaki (Toyota Motor Corporation)
- 4 Skilled driver's behavior when passing through a non-signalized intersection without right of way**
Hiroaki Kosaka · Masanori Takemoto · Hirokazu Nishitani (Nara Institute of Science and Technology)
Masaaki Uechi · Kazuya Sasaki (Toyota Motor Corporation)
- 5 Evaluation of probability of entering railway crossing even at the existence of lead vehicle in the case of deregulation of stopping at railway crossing**
Toshihisa Sato · Motoyuki Akamatsu (National Institute of Advanced Industrial Science and Technology (AIST))
Toru Shibata · Shingo Matsumoto · Wataru Hida (Railway Technical Research Institute)
- 6 Relationship driver behavior and traffic circumstance based on analysis of forward collision near-miss incident data in car following situation**
Motoki Shino · Yousuke Okada (The University of Tokyo)
Yohei Michitsuji (Tokyo University of Agriculture and Technology)
Kamata Minoru (The University of Tokyo)
Masao Nagai (Tokyo University of Agriculture and Technology)
Kasumi Moro (Society of Automotive Engineers)
- 7 Analysis on driver behavior during yellow traffic signals using drive recorder**
Yohei Michitsuji · Daisuke Mezaki · Masao Nagai (Tokyo Univ. of Agric. and Tech.)
Minoru Kamata · Motoki Shino (The Tokyo University)
Katsumi Moro (Japan Society of Automotive Engineers)

[13:30~14:25]

2-08 Driver Behavior II

<OS> Chairperson: Motonori Ishibashi (Mazda Motor)

- 8 Cancelled**
- 9 (Cancelled) Deceleration Behavior of female and elderly drivers in Car-Following States**
Hayato Kobayashi · Hironori Suzuki (Nippon Institute of Technology)
Kenta Shouji (Japan Railway)

- 10 Consideration of control characteristic of critical cornering by driving simulator which can do bodily sensation of drift cornering**
Hiromichi Nozaki (Kogakuin University Faculty of Engineering)
Masayuki Shimizu · Makoto Sakuno (Mitsubishi Heavy Industries, Ltd)
Masashi Kosaka (Kinki University Graduate student)
- 11 Analysis and Consideration of the Driver Motion according to the Rolling by Slalom Running**
Shuuichi Buma · Hidenori Kajino (Toyota Motor Corporation)
Jae-Sung Cho (Toyota Tecncal Development Corporation)
Tsunenori Takahashi · Shun'ichi Doi (Kagawa University)
- 12 A Consideration of Contrasting Competence of Recognizing Surrounding Cars and Performances of Stroop-Effect**
Makoto Kihira (National Research Institute of Police Science, Japan)

[15:05~16:20]

3-08 Driver Model

<OS> Chairperson: Shun'ichi Doi (Kagawa University)

- 13 On Transfer Function Model of Drivers as Human-in-the-loop Systems**
Shinya Tanaka (Osaka University)
Takanori Mori · Kenichi Yamada · Toshio Ito (Daihatsu Motor Co., Ltd)
Toshimitsu Ushio (Osaka University)
- 14 Modeling and Analysis of Vehicle Following Task based on Mode Segmentation**
Tatsuya Suzuki · Toshikazu Akita · Shinkichi Inagaki (Nagoya University)
Soichiro Hayakawa (Toyota Technological Institute)
- 15 Synthesizing State Flow Model of Driver-Vehicle-Environment Based on Urban Driving Data**
Pongsathorn Raksincharoensak · Maeda Kozo · Yohei Michitsuji · Masao Nagai (Tokyo University of Agriculture and Technology)
Masamichi Shimosaka · Taketoshi Mori · Tomomasa Sato (The University of Tokyo)

302 (3F)

[9:30~12:10]

4-08 Human Machine Interface

<OS> Chairperson: Osamu Shimoyama (Nissan Motor)

- 16 Estimation of Driver Steering Intention Based on Brain-Computer Interface Using Electroencephalogram**
Toshihito Ikenishi · Yutaka Machida · Takayoshi Kamada · Masao Nagai (Tokyo University of Agriculture & Technology)
- 17 Choice of visual and auditory information to facilitate drivers' expectation of support system functions in emergency situation**
—Discussion on cases of activating two support system functions—
Akira Ohtani · Hiroshi Uno · Masahiro Nogushi · Yoshinori Egami (Japan automobile research institute)
Yukinobu Nakamura (Japan Automobile Manufacturers Association)
- 18 A Study of a Tactile Driver Interface Using Seat Vibrations**
Masayuki Okuwa · Tetsuo Kurahasi · Nobushige Fujieda (Toyota Central R&D Labs., Inc.)
Taishi Tsuda · Akira Hattori (Toyota Motor Corporation)
- 19 Haptic Perception Phenomena and Mechanism for Shift Feel**
Akihito Sano · Kazuki Fujii · Yosuke Okuma · Naoyuki Takesue (Nagoya Institute of Technology)
Hiromi Mochiyama (University of Tsukuba)
Yoshihiro Tanaka · Hideo Fujimoto (Nagoya Institute of Technology)

5.21 (Wed)

- 20 **Human Interfaces for AHS On-road Public Tests on Metropolitan Expressway**
Takayuki Hirasawa·Setsuo Hirai·Hidetoshi Hatakenaka (NILIM)
Hiroyuki Mizutani·Akio Hosaka (AHSRA)
- 21 **Storage Usability Analysis of Vehicle from the point of 'Context of Use'**
Jonghyun Park·Seungsik Han·Changoan Woo (Hyundai-Kia Motors)

[13:00~14:15]

5-08 Risk Perception

<OS> Chairperson: Kazumoto Morita
(National Traffic Safety and Environment Laboratory)

- 22 **Comparison of Evaluation Indices concerning Estimation of Driver's Risk Perception**
—risk perception of rear-end collision to a preceding vehicle—
Sou Kitajima (Japan Automobile Research Institute)
Yoshitaka Marumo (Nihon University)
Toshihiro Hiraoka (Kyoto University)
Makoto Itoh (University of Tsukuba)
- 23 **Research on quantification of drivers' risk feelings while car-following using naturalistic driving data**
Tomohiro Yamamura·Nobuyuki Kuge (Nissan Motor Co., Ltd.)
Shane McLaughlin·Jon Hankey (Virginia Tech Transportation Institute)
- 24 **Evaluating the Risk Level of Driving Behavior When Entering a Non-Signalized Intersection**
Tomoki Tanaka·Yasuhiro Masuko·Masanori Takemoto·Hiroaki Kosaka
·Hirokazu Nishitani (Nara Institute of Science and Technology)

[14:35~16:15]

6-08 Physical Motion Analysis

<OS> Chairperson: Mitsuaki Hagino (Nissan Motor)

- 25 **Research for Tire Evaluation Method by Using Electromyogram from Driver**
Daisuke Sakai (Shinshu University)
Akira Kuramori (The Yokohama Rubber CO.,LTD.)
Toru Sugahara·Masayoshi Kamijo (Shinshu University)
- 26 **Influence of Upper-limb Posture on The Steering Maneuverability**
Muneyuki Sakamoto·Takafumi Asao·Ken Horii·Kentarō Kotani
(Kansai University)
- 27 **Steering Control Method in Consideration of Mechanical Characteristics of Human Arm**
Naoki Yamada·Takamasa Suetomi (Mazda Motor Corporation)
Yusuke Kashiba·Hiroyuki Wakita·Yoshiyuki Tanaka
·Toshio Tsuji (Hiroshima University)
- 28 **Study of Applicability of the Radiowave Sensor for Vehicle Entry**
Koji Tsujimura·Yosuke Tomita·Keisuke Saito
·Yoichi Toguchi (OMRON)

303 (3F)

[9:30~11:10]

7-08 Vehicle Dynamics and Control I

<OS> Chairperson: Masataka Nasada (Daihatsu Motor)

- 29 **Development of Crawl Control**
Yasuhito Ishida (ADVICS CO.,LTD.)
Gen Inoue (TOYOTA MOTOR CORPORATION)
- 30 **Non-contact magnetostrictive-type torque sensor**
Masamu Naoe·Masahiro Mita (Hitachi Metals, Ltd.)
- 31 **Steering System for the On-center Handling**
Ikuo Kushiro·Shingo Komura·Hiroyuki Kawai (Toyota Motor Corp.)
- 32 **Cancelled**
- 33 **Vehicle Motion Control of Driver-Vehicle System Based on Driver's Steer Manipulation for High-speed Driving**
Hiroki Okano·Motoki Shino·Takayoshi Tsujimoto
(The University of Tokyo)
Sumio Motoyama (Mitsubishi Motors)
Minoru Kamata (The University of Tokyo)
Tetsushi Mimuro (Mitsubishi Motors)

[13:00~15:05]

8-08 Vehicle Dynamics and Control II

<OS> Chairperson: Toshimichi Takahashi
(Toyota Central Research & Development Laboratories)

- 34 **Development and Control of Small-scale Electric Vehicle with Active Steering Systems with Direct-drive In-wheel Motors**
Hiroshi Fujimoto·Yuya Yamauchi·Toru Suzuki·Naoki Ando
(Yokohama National University)
- 35 **Semi-Active Suspension Control Considering Nonlinear Dynamics of the Damper**
Noriaki Itagaki (Hitachi, Ltd.) Takanori Fukao (Kobe university)
Masafumi Amano
(Kobe University Graduate School of Science and Technology)
Nobuyuki Ichimaru·Takahide Kobayashi·Tatsuya Gankai (Hitachi, Ltd.)
- 36 **Handling characteristics of longitudinal acceleration control vehicle combined with lateral motion**
—Proposal of Acceleration (G) Vectoring Control for the improvement of vehicle agility and stability—
Makoto Yamakado (Hitachi, Ltd.)
Masato Abe (Kanagawa Institute of Technology)
- 37 **Trajectory Optimization of a Circuit Racing Car**
Masanori Harada (National Defense Academy of Japan)
- 38 **Vehicle motion control for minimizing collision risk by use of optimal control theory**
Takehiko Fujioka·Atsushi Shibata (Graduate School of the Univ. of Tokyo)
Yuichiro Tsukasaki (Fuji Heavy Industries Ltd.)
Shinji Sawada (Fuji Heavy Industries Ltd.)

[15:25~16:40]

9-08 Vehicle Dynamics and Control III

<OS> Chairperson: Shinichiro Horiuchi (Nihon University)

- 39 **The Mechanism Analysis and Reproducibility Test Method Development**
—of The Stabilizer Bar Clamping Bush Noise in winter season—
DongHyun Ha·SoonChul Park·HyoHyun Nam (Hyundai Motor)
- 40 **Independent braking force control for rollover prevention of heavy vehicles**
Bingzhao Gao·Kazushi Sanada (Yokohama National University)
Toshihiko Iwama (Isuzu Advanced Engineering Center, Ltd.)
- 41 **Networked driveline and chassis systems enhancing the vehicle performance**
Wolf-Dieter Gruhle·Horst Krimmel (ZF Friedrichshafen)

304 (3F)

[9:30~10:45]

10-08 The Latest CAE and Test Technologies for NVH I

<OS> Chairperson: Noboru Sannodo (Honda R&D)

- 42 **NVH Optimization of an Engine Oil-Pump System**
Dalheun Shin·Seongyoon Bae·Dongkyu Yoo
·Kootae Kang·Oyoung Kwon (Hyundai Motor Company)
- 43 **Turbo Charger acoustics CAE based method for Turbo Charger noise reduction**
Klaus Wolff·Christoph Steffens·Remi Stohr·Richard Aymanns (FEV)
Prof.Stefan Pischinger (VKA)
- 44 **Cancelled**
- 45 **Efficient Transfer Path Analysis for Vehicle Sound Engineering**
Franz Brandl·Werner Biermayer (AVL List GmbH)
Stephan Brandl·Hans-Herwig Priebisch (Acoustic Competence Center Graz)
Robert Holdrich·Alois Sontacchi (Institute of Acoustic and Electronic Music, Graz)

[13:00~14:40]

11-08 The Latest CAE and Test Technologies for NVH II

<OS> Chairperson: Mitsuo Nakano (Tokyo University of Technology)

- 46 **Engine Sound Development of V6-SUV**
Naoki Hirate·Masashi Komada (Toyota Motor)
Takayoshi Yoshioka (Toyota Motor E&M North America)
Siegmond Thomann·Franz Brandl (AVL List GmbH)

5.21 (Wed)

- 47 **Gear Rattle modelling and Meshing Gear Teeth Behaviour Estimation with Measured Signals**
Hiroki Yamaguchi·Kazuhide Togai (Mitsubishi Motors Corporation)
Hiroki Yamaura (Mitsubishi Motors Engineering) Teo Potter (Romax Technology)
- 48 **Development of Drop Ball Impact Calculation Technology for Plastic Cylinder Head Cover**
Tsuyoshi Nakamura (MAHLE Filter Systems Japan Corporation)
Shuya Oi (Mechanical Design & Analysis Corporation)
- 49 **Simulation to Predict the Fluttering Noise of Accessory Drive Belt**
Hiroshi Takagishi·Toshimitsu Shinohara·Tomoaki Nishio (Honda R&D Co.,LTD.)
Atsushi Nagakubo (PSG Co., LTD..)

[15:00~16:40]

12-08 The Latest CAE and Test Technologies for NVH Ⅲ <OS> Chairperson: Akira Suto (Honda R&D)

- 50 **Development of Acoustic Trim FEM Analysis System for Low-and Mid-Frequency Range**
Norimasa Kobayashi·Masami Habuchi·Yoshihisa Uno
·Hiroo Yamaoka (TOYOTA MOTOR CORPORATION)
- 51 **Panel Shape Investigation by Adding Proper Curvature to Attain Both Rigidity Increase and Sound Radiation Power Reduction**
Jun Nishiyama (ex Tokyo Metropolitan University)
Takuya Yosimura (Tokyo Metropolitan University)
Atsushi Yoshihara·Kazuhiro Yasumoto (SUZUKI MOTOR CORPORATION)
- 52 **Influence of boundary conditions on vibration properties of vibration damping steel sheets**
Nobuo Kadowaki·Toyoki Yamamoto (NIPPON STEEL) Hiroshi Endo (KYODO YUSHI)
- 53 **Drumming reduction in hatchback by Body and Suspension eigenvalue optimization analysis**
Shunsuke Ebata·Shinichi Takeuchi·Takaomi Makino
·Toru Matsui·Hitoshi Murakami·Ryo Matsunaga (NISSAN MOTOR)
- 54 **(Cancelled) Novel Approach to Vibration Analysis by Generalized Transmitted Force**
Masato Hashioka·Ichiro Kido·Kohsuke Ikeda
(TOYOTA TECHNICAL DEVELOPMENT CORPORATION)

311+312 (3F)

[9:30~10:45]

13-08 Accident Investigation & Analysis <OS> Chairperson: Youji Shimizu (Nissan Motor)

- 55 **Analysis about Numerical Change of Traffic Accident in Recent Years**
Makoto Hamada (Toyota Motor)
- 56 **Cancelled**
- 57 **Study on background factors of traffic accidents —Mental condition of drivers at the time of accidents—**
Nobuyo Kasuga (Shibaura Institute of Technology)
Yasuhiro Daisho (Waseda University)
Toichi Sawada (Shibaura Institute of Technology)
- 58 **Experimental research of the vehicle turning center —(Experimental research of the vehicle turning center by using the new measurement method to acquire practical data for traffic accident analysis)—**
Katsunori Taneda (Automobile traffic accident analysis science laboratory)
Tomoyoshi Nakamura (Shimodate Driving school)
- 59 **Cancelled**

[13:00~14:15]

14-08 Occupant Protection <OS> Chairperson: Shigeki Hayashi (Toyota Motor)

- 60 **Development of integrated automation process for head impact simulation**
Yoo-Bin HONG·Kang-Wook Lee·Tae-Jung YEO (HYUNDAI MOBIS)
- 61 **Study on the location and type of side impact sensors for new side impact regulation**
HYUNGWOOK PARK·JANGMOOK LIM·SEOKHO HON (HYUNDAI MOTOR)
- 62 **Digital and Physical Human Body Models for Seat Comfort Evaluation**
Su-Hwan Hwang (Hyundai-Motors Company)
Seok-Hwan Kim·Jong-Kweon Pyun (R&D Division for HMC and KMC)
Hyung Yun Choi·Chi-Ho Kim·Sungwoon Jung (ME Dept. Hongik Univ. Seoul, Korea)

[14:35~17:15]

15-08 Dummy & Crash Test Evaluation <OS> Chairperson: Hiroshi Kuniyuki (Nissan Motor)

- 63 **Verification of the chest characteristics of the Polar-II pedestrian dummy**
Akihiko Akiyama·Masayoshi Okamoto·Osamu Ito
·Yukou Takahashi (HONDA R&D Co., Ltd.)
- 64 **Validation of Pedestrian Dummy Pelvis Characteristics**
Masayoshi Okamoto·Akihiko Akiyama·Yukou Takahashi
(Honda R&D Co.,Ltd.)
- 65 **The influence of the arms on head injury of the pedestrian at the time of the vehicle collision**
Yosuke Ogo·Kentaro Ogi (Graduate School of Research Division in Engineering, Musashi Institute of Technology)
Tetsuo Maki·Hideo Sakai
(Faculty of Engineering, Musashi Institute of Technology)
- 66 **Development of Active Head Restraint System Considering Various Occupant Physiques, Positions, and Postures**
Masahide Sawada·Masato Ohchi (Toyota Motor Corporation)
- 67 **A study of rear frame construction for rear offset collision mode**
Shigeto Yasuhara·Yasuhisa Egawa (Honda R&D Co.,Ltd.)
- 68 **Reduction of Unevenness in Occupant Injury Index on Passenger Side in Frontal Collision**
Masakazu Shirooka·Tatsuya Komamura·Koushi Kumagai
·Tsuyoshi Yasuki (TOYOTA MOTOR CORPORATION)

313+314 (3F)

[9:30~10:45]

16-08 On-board and New Measurement Methods I <OS> Chairperson: Kazuhiro Akihama (Toyota Central Research & Development Laboratories)

- 69 **Improvement of exhaust flow meter used for the on-board emission measurement system**
Shintaro Aoki (HORIBA, Ltd.)
- 70 **(Cancelled) Research on Measurement Method of Exhaust Flow Rate for On-board Measurement System**
Susumu Sato·Toshiro Yamamoto·Yasuhiro Ogawa
(National Traffic Safety and Environment Laboratory)
Yutaka Iizuka (Tsukasa Sokken CO., LTD.)
- 71 **Research on Measurement Method of Road Inclination and Altitude by On-Road Driving**
Susumu Sato·Toshiro Yamamoto·Yasuhiro Ogawa
(National Traffic Safety and Environment Laboratory)
- 72 **Measurement and Increase Factor Analysis of Environment Impacts under Road Driving Conditions by On-Board Measurement System (Third Report)**
—Study for Engine Controls and Driving
Conditions Causing NOx Emission Increase—
Toshiro Yamamoto·Yasuhiro Ogawa·Susumu Sato
(National Traffic Safety and Environment Laboratory)

[13:00~14:40]

17-08 On-board and New Measurement Methods Ⅱ <OS> Chairperson: Mitsuhiro Tsue (The University of Tokyo)

- 73 **Development of Multiplexed FBG Sensors with High Spatial Resolution**
Yuichi Machijima (Lazoc Inc.) Hideaki Murayama (The University of Tokyo)
Igawa (Japan Aerospace Exploration Agency)
- 74 **The Detection of Knock Location by Multipoint Pressure Measurement**
Masaki Ebina·Masao Kinoshita·Yoshihiro Nomura
·Makoto Koike (Toyota Central R&D Labs)
Rio Shimizu (Toyota Motor Corporation)
- 75 **Application of micro Cassegrain system to in-cylinder A/F measurement in cold-start condition**
Atsushi Nishiyama·Yuji Ikeda·Haeyoung Jeoung·Hiroki Katano
- 76 **Direct and Continuous Measurements of Diesel Soot Emissions**
Tomohiro Minagawa·Shigeru Yanagihara (TSUKASA SOKKEN CO., LTD.)
Makoto Shimono·Akihiro Takahashi·Takeyuki Kamimoto (Tokai University)
Hiroyuki Yamada (National Traffic Safety and Environment Laboratory)

414+415 (4F)

[9:30~12:10]

18-08 Advanced Technology and New Trend for Vehicle Body Structure Engineering I

<OS> Chairperson: Atsushi Sugeta (Hiroshima University)

- 77 **Fatigue Characteristics of Bolted Joint and Bolt/Nut Joint under Transverse Vibration**
Shinji Hashimura·Tetsuya Nakao·Ryouhei Ishimaru
(Kurume National College of Technology)
- 78 **Proposal of Anti-loosing Nut Tightening System with Slits**
Yuichi Oishi (Tokyo University of Science)
Dai-Heng Chen·Singo Ozaki
(Tokyo University of Science department of mechanical engineering)
Kazuki Abeshima (Tokyo University of Science)
- 79 **Evaluation of joint strength for spot welding of two or three automobile steel sheets**
Hidenori Kuwata·Kakeru Shibaguchi·Souichiro Nishino (Ibaraki university)
Kunio Ohya (Ohya traditional school of technology)
Kazushi Watanabe·Haruo Yamamoto·Katsuyuki Yanai (Taiyo kogyo Co.,LTD)
- 80 **Evaluation of mechanical properties on press worked product**
Ryota Sugiura·Naoki Morimoto·Souichiro Nishino (Ibaraki university)
Kunio Ohya (Ohya traditional school of technology)
Takeshi Oshikubo (Ibaraki national college of technology)
Makoto Asano (Asano Co.,LTD) Yukio Yuzawa (Kikuchi Co.,LTD)
- 81 **Development of rupture prediction technique for spot-weld joint**
Hideki Ueda·Kazuo Okamura·Manabu Fukumoto
·Masato Uchihara·Hiroki Fujimoto·Tohru Okada
(SUMITOMO METAL INDUSTRIES, LTD.)
- 82 **Development of Cold-stamped door impact beams made of 1180MPa grade high strength steel sheet**
Yuki Toji·Kohei Hasegawa·Harumi Shigemoto·Hidetaka kawabe
·Takeshi Fujita·Yasushi Tanaka (JFE Steel Corporation)
Hajime Nakamura·Hiroshi Ishida·Hiroyuki Sakamoto (HIROTEC Corporation)

[13:00~15:40]

19-08 Advanced Technology and New Trend for Vehicle Body Structure Engineering II

<OS> Chairperson: Toshiaki Nakamaru (Nissan Motor)

- 83 **Durability evaluation of the fuel tank by the rough road simulation using the Multi-axial Simulation Table**
Norifumi Yamamoto·Michiyoshi Kono (Mitsubishi motors co.)
Shinichiro Nishimura·Ryuji Uehara (Mitsubishi Heavy Industries co.)
- 84 **Development of performance prediction technology of body panel stiffness**
Morio Nanbu·Seiji Tanizaki·Katsuya Yamasaki (Daihatsu Motor Co.,LTD.)
- 85 **A study for the Hood Gap Optimization using Robust Design & Scattering Analysis**
Youngdug Yoo (HYUNDAI MOTOR COMPANY)
- 86 **A study on the analysis process of the steering support system using concept model**
KI-CHANG KIM (HYUNDAI MOTOR COMPANY)
CHAN-MOOK KIM (KOOKMIN UNIVERSITY)
JIN-TAEK KIM (CHONBUK UNIVERSITY)
- 87 **Structural durability target setting for new markets**
Markus Horst·Michael Kienert (LMS Deutschland GmbH, Germany)
- 88 **Robust Design of Air Compressor Bracket by using MSM Fatigue Analysis**
Tae-Ryong Jeon·Ja-Suk Koo·Kwang-Woong Kim (HYUNDAI MOBIS)

416+417 (4F)

[9:30~12:10]

20-08 Layer-Integrated Steels for Automobile Applications

<OS> Chairperson: Manabu Enoki (The University of Tokyo)

- 89 **[Keynote Speech] Layered steel sheet with high strength-ductility combinations**
Toshihiko Koseki (University of Tokyo)
- 90 **Effect of interface toughness on ductile tensile behavior of layer-integrated steels**
Junya Inoue·Shoichi Nambu·Toshihiko Koseki (The University of Tokyo)

- 91 **Hydrogen embrittlement of laminate steel sheets**
Kenichi Takai·Yukito Hagihara·Kazuhiro Suzuki (Sophia University)
- 92 **Formed Geometry and Interface of Layer-Integrated Steels After Hat Bending**
Seiichiro Kawanishi·Jun Yanagimoto (The University of Tokyo)
- 93 **Nondestructive evaluation of deformation and fracture process of layer-integrated steels**
Manabu Enoki (The university of Tokyo)
- 94 **Estimation of the potential of new multilayer materials for automotive applications**
Yuichiro Hirose·Petr Sedlak·Shoichi Nambu (The University of Tokyo)
Hirokazu Taniguchi (Nippon Steel Corporation)
Manabu Fujine (Toyota Motor Corporation)
Eizaburo Nakanishi (Nissan Motor Corporation)
Yukihisa Kuriyama (Nippon Steel Corporation)
Roland Wohlecke (Forschungsgesellschaft Kraftfahrwesen mbh AACHEN)
Takeshi Kawachi (Nippon)

[13:00~14:40]

21-08 Metallic Materials I

<OS> Chairperson: Toshiaki Kuroki (Hino Motors)

- 95 **Improvement of Impact Energy Absorption by Using of High Strength Steel, Part X**
Hiroshi Yoshida (Nippon Steel)
- 96 **Development of Nut Inlaying Technique into Hydroforming Part by Means of Hydro-burring**
Masaaki Mizumura·Koichi Sato·Yukihisa Kuriyama (Nippon Steel Corporation)
- 97 **Influence of process division on shape freezing property of form forming**
Mitsuhide Maruhashi·Souichiro Nishino (Ibaraki university)
Kunio Ohya (Ohya traditional school of technology)
Kazushi Watanabe·Haruo Yamamoto·Katsuyuki Yanai (Taiyo kogyo Co.,LTD)
- 98 **Sliding damage evaluation of coating for press forming dies**
Souichiro Nishino·Takashi Hirao·Eriko Togashi (Ibaraki university)
Kunio Ohya (Ohya traditional school of technology)
Keiji Yokose·Kohki Toishi (Dowa Termotech Co.,LTD)
Atsumi Nakao (Toyo Advanced Technology Co.,LTD)
Yasunobu Komine (Komine Co.LTD)

[15:00~16:15]

22-08 Metallic Materials II

Chairperson: Osamu Nakano (Toyota Motor)

- 99 **Development of High-strength Case-hardened Boron Steel**
Hitoshi Kinoshita·Atsushi Murakami (Honda R&D Co., Ltd.)
Toru Takayama (Sumitomo Metal Industries, Ltd.)
Takanari Hamada (Sumitomo Metals (Kokura), Ltd.)
- 100 **Improvement of bending fatigue limit by cavitation peening for specimens containing an artificial surface defect**
Shinsaku Fukuda (ISUZU MOTORS LIMITED)
Toshihiko Amano·Koji Takahashi
·Kotoji Ando (Yokohama National University)
Katsuyuki Matsui·Hideyuki Ishigami (ISUZU MOTORS LIMITED)
- 101 **Improvement of fatigue strength by shot peening for spring steel specimens containing an artificial surface defect**
Koji Takahashi·Kotoji Ando (Yokohama National University)
Fumio Takahashi (NHK Spring)
- 102 **(Cancelled) The statistical creation method of a plastic strain and thermal fatigue life diagram**
Kenji Itoh (Hitachi Metals.)

501 (5F)

[9:30~11:35]

23-08 Advanced Gasoline Engine Technology (Combustion)

<OS> Chairperson: Mitsuhiro Tsue (The University of Tokyo)

- 103 **A Study on Expanding Load Limits of Stratified Combustion in a DISI Engine with a Centrally Located High-pressure Fuel Injector**
Koji Hiraya·Hirofumi Tsuchida·Eiji Takahashi
·Tomonori Urushihara (Nissan Motor)

5.21 (Wed)

- 104 (Cancelled) Study of knock control by inhomogeneous mixture formation at surroundings of the combustion chamber
Yoshihiro Nomura·Hidemasa Kosaka·Masao Kinoshita
·Makoto Koike (TOYOTA Central R&D Labs., Inc.)
Rio Shimizu (TOYOTA Motor Corp.)
- 105 Combustion characteristics of microwave plasma combustion engine
Yuji Ikeda·Atsushi Nishiyama·Masashi Kaneko·Haeyoung Jeong·Hiroki Katano
- 106 The study on Thermal Efficiency Improvement of Hydrogen addition in Gasoline Engine
atsushi shimada (Hitachi) shuuichi kajitani·kenichiro ogata
·katsushige yabuki·tetsuya manda·takao ishikawa
- 107 Development of an Ignition System using Repetitive pulse plasma discharges
Kimitoshi Tanoue (Oita university)
Eiki Hotta (Tokyo Institute of Technology)
Yasuo Moriyoshi (Chiba University)
- 108 Analysis of Atomization Processes of a Slit Spray
—Effect of cross wind and wall impingement—
Yasuo Moriyoshi·Chang-Song Ryu·Ryo Uchida (Chiba Univ.)
Masato Kubota (Toyota Motor Co.)

[13:00~15:05]

24-08 Advanced Gasoline Engine Technology (HCCI-I) Chairperson: Seiichi Shiga (Gunma University)

- 109 3-D CFD simulation of HCCI combustion with a new PRF skeletal kinetic model
Tadashi Tsurushima·Tetsuya Kobara·Tsuyoshi Matsuda
·Toshiya Kouno·Tomonori Urushihara (NISSAN Motor Co., LTD.)
- 110 Potential of Combustion Phasing Retard for Reducing Pressure-Rise Rates in HCCI Engines by use of Numerical Analysis
Kenji Shigetoyo·Mari Nagae·Akane Yoshida (Keio University Graduated School)
Norimasa Iida (Keio University)
- 111 Study on the Relationship between Fuel Characteristics and Auto-Ignition in Gasoline HCCI Engines (First Report)
—Analysis with Paraffinic Model Fuels of different Research Octane Numbers—
Takashi Youso·Masahisa Yamakawa (Mazda Motor Corporation)
Toshiyuki Hirose·Shigeyuki Tanaka (COSMO OIL)
Ryota Nakayama·Jin Kusaka (Waseda University)
- 112 Effects of Fuels Stratification of Two Components Fuel on HCCI Combustion
—A Combustion Analysis Using Chemiluminescence Imaging—
Osamu Iwama (Keio University Graduated School)
Satoshi Yamaoki (Keio University Graduated School)
Norimasa Iida (Keio University)
- 113 Effect of Intake gas Pressure and Temperature on Combustion Process in HCCI Engine
—Numerical analysis using PRF Fuels/Air mixture—
Mari Nagae (Keio University)
Kenji Shigetoyo·Akane Yoshida (Keio University Graduated School)
Norimasa Iida (Keio University)

[15:25~17:30]

25-08 Advanced Gasoline Engine Technology (HCCI-II) <OS> Chairperson: Jin Kusaka (Waseda University)

- 114 Development of Gasoline HCCI engine
—The effect of NVO (Negative Valve Overlap) combustion on fuel economy—
Tohru Hokazono·Hidefumi Fujimoto·Hiroyuki Yamashita
·Tatsuya Tanaka·Masatoshi Seto (Mazda Motor Corporation)
- 115 (Cancelled) Development of a Gasoline HCCI Engine Control System (Fifth Report)
—Investigation of a Combustion Control Method in Dynamic Operating States—
Hiromu Kakuya·Shiro Yamaoka·Kengo Kumano·Shinya Sato (Hitachi Ltd.)
- 116 HCCI Combustion Control by using EGR
Kenichiro Nagai·Yoshihiko Kanoto (Keio University Graduated School)
Norimasa Iida (Keio University)
- 117 Improvement of HCCI Engine Characteristics by Fuel Composition
Gen Shibata (Nippon Oil Corporation)
Tomonori Urushihara (Nissan Motor Co., Ltd.)

- 118 Enlargement of Operating Range in Low Load of HCCI Gasoline Engine and Smooth Shift Between HCCI and Spark Ignition
Shuji Shimazutsu (Kasii Technical High School)
- 119 An Experimental Study on Expansion of High Load Operation limit for Gasoline HCCI Engines by Using Blow Down Super Charging System
Tatsuya Kuboyama·Yasuo Moriyoshi (Chiba university)
Koichi Hatamura (Hatamura Engine Research Office)
Toshio Yamada (CDAJ)

502 (5F)

[9:30~11:35]

26-08 Fuel Cells for Automobile-Component and System Technology <OS> Chairperson: Takashi Komura (Honda R&D)

- 120 Development of Vertically Oriented CNT Electrodes for Fuel Cells
Masahiro Imanishi·Shigeaki Murata (Toyota Motor Corporation)
Tatsuya Hatanaka·Yu Morimoto (Toyota Central R&D Labs.,INC.)
Haruyuki Nakanishi·Shinichi Matsumoto (Toyota Motor Corporation)
- 121 Accumulation Behavior of Impurities in Hydrogen Circulation System of Fuel Cells
Yoshiyuki Matsuda·Yoshiyuki Hashimasa
·Daichi Imamura·Motoaki Akai
·Shogo Watanabe (Japan Automobile Research Institute)
- 122 (Cancelled) Two-phase flow simulation of water behavior in the flow channels of PEFC
Yuji Nishiguchi·Chen Zhili (Tokai University)
- 123 Thermal Behavior in Hydrogen Storage Tank for FCV on fast filling
Hiroshi Yoshimura·Toshihiro Terada
·Yohsuke Tamura·Hiroyuki Mitsuishi
·Shogo Watanabe (Japan Automobile Research Institute)
- 124 Bending Fatigue Test of the SCM435 (JIS)/QT steel in High-Pressure Gaseous Hydrogen Environment
Taisuke Miyamoto·Nobuo Kobayashi·Masatoshi Michibata
(TOYOTA MOTOR CORPORATION)
- 125 The effect of water on performance in Direct DME Fuel Cells
Yusuke Takahashi·Zhili Chen·Masahiko Taniguchi (Tokai University)

[13:00~14:40]

27-08 EV, HEV, FCV System <OS> Chairperson: Yoshitaka Asakura (Toyota Motor) Yasuo Matsunaga (Nissan Motor)

- 126 A bucket rechargeable HEV
—Search for the concept to 2ℓ/100km car development—
Isao Shirayanagi (president) Yousuke Shirayanagi (director)
- 127 The Demonstration of Advanced Lead Acid Batteries in HEV Applications
Allan Cooper (European Advanced Lead Acid Battery Consortium)
Mike Kellaway (Provector Ltd) Bengt Walqvist (Effpower)
Jun Furukawa (Furukawa Battery Company) Lan Lam (CSIRO (Australia))
- 128 Economic Concepts and Solutions for Hybrid Drivelines
Bernd Vahlensieck·Frank-Detlef Speck (ZF Friedrichshafen AG)
Ralf Kubalczyk (ZF Getriebe GmbH)
- 129 A Study of a Variable Geometry System
—Proposal for a Variable Geometry Vehicle (Report 1)—
Katsunori Asogawa (Nissan Motor)

[15:00~16:15]

28-08 Rechargeable Energy Storage Systems, Sub System and Evaluation

<OS> Chairperson: Masahito Mitsumori (Honda R&D)
Morimasa Hayashida (National Traffic Safety and Environment Laboratory)

- 130 Fuel Consumption Test Method of 4WD HEVs (Part 3)
—A vehicle restraint method on two axis chassis dynamometers—
Takanori Okamoto (Shibaura institute of technology)
Ken-ichi Shimizu·Mitsuya Nihei (AIST)
- 131 Development of hybrid composite endplate for PEMFC in fuel cell vehicles
JungDo Suh (Hyundai Motor Car) HaNa Yu·InUk Hwang·DaiGil Lee (KAIST)
KwiSeong Jeong·ByungKi Ahn (Hyundai Motor Car)

132 Modeling and analysis of gasket seal system for PEMFC stack in fuel cell vehicles

HeonYoung Kim·JungMin Kim·DaeYoung Kim (Kangwon National University)
SungHo Lee·SaeHoon Kim·JungDo Suh (Hyundai Motor Company)

511+512 (5F)

[13:00~16:05]

29-08 Polymers

Chairperson: Takahiro Onishi (Hino Motors)

133 Development of Bioplastic for Injection molding

Kunihiko Hashimoto (Nishikawa Rubber Co.,Ltd.)
Toru Yano (Nishikawa Rubber Co.,Ltd.)

Takahiro Tochioka·Yushi Mazda (Mazda Motor Corp.)
Mutsuo Fujii·Singo Niimi (DaikyoNishikawa Corp.)

134 Development of injection moldable bioplastics for automobile parts

Yohei Ichihara·Takahiro Tochioka·Yushi Matsuda
·Kunihiko Yoshida·Mitsuharu Kaneko (Mazda Motor Corporation)
Mutsuo Fujii·Shingo Niimi (DaikyoNishikawa Corporation)
Kunihiko Hashimoto·Toru Yano (Nishikawa Rubber CO.,LTD.)

135 Material Development on Converting Post Consumer Recycle PET Waste into PBT based Engineering Thermoplastics for Automotive Applications

Isamu Yamamoto (SABIC Innovative Plastics Japan)
Rodney W. FONSECA·Dhaval SHAH (SABIC Innovative Plastics)

136 Development of High-performance Filter Material for Air Cleaner Element

Seiichi Tanaka (Honda R&D Automobile R&D Center)
Kenji Koga (Honda R&D) Shinsuke Mizuta (TigersPolymer)

137 Nonlinear-viscoelastic and Elasto-plastic model for Rubber Material using FEM

Masaki Fujikawa·Takaya Kobayashi (Mechanical design and analysis)

138 Development of epoxy resin system insulating material —Tg decrease analysis by nanocomposite—

TOMONORI ISHIKAWA·AKIO SUGIURA·KAZUO KATO (DENSO)

139 Development of chemical proof gel for exhaust gas pressure sensor

Takao Izumi·Takashi Aoki·Masato Ueno (DENSO)

Small Auditorium (5F)

[9:30~12:10]

30-08 Diesel Emission Control

Chairperson: Takashi Kaneko (Nippon Oil)

140 Aftertreatment System for Commercial Diesel Engine —Basic System Layout using NOx Catalyst and DPF—

Satoshi Hiranuma·Shinichi Saito·Minehiro Murata
·Yasuko Suzuki·Hiroaki Fujita·Yoshinaka Takeda
·Kazutoshi Mori (MITSUBISHI FUSO TRUCK & BUS CORP.)

141 Regulated and unregulated emission components characteristics of Urea SCR vehicles

Hisakazu Suzuki·Hajime Ishii·Katsuharu Sakai·Keiko Fujimori
(National Traffic Safety and Environment Laboratory)

142 A Study on NOx Reduction Rate Improvement for a Urea SCR System (First Report)

—A Concept of NH₃ Adsorption Quantity Control
and its Application to Transient Operation—

Yutaka Murata·Sadahito Tokui·Soichiro Watanabe
·Kiyoto Takeshita·Yasuhiro Daisho (Waseda Univ.)
Hisakazu Suzuki·Hajime Ishii
(National Traffic Safety and Environment Lab.)

143 Development of diesel engine using optimization methods

Satoshi Yamada·Koji Satake·Toshiaki Monaka·Hiroyuki Endo
·Hiroyuki Ueda (Mitsubishi Heavy Industries, LTD.)
Mitsuhiko Yanagisawa·Takaharu Abe·Kenji Kimura
(Mitsubishi Motors Corporation)

144 Verification of CO₂ Reduction Potentials of Vehicles by Thermal Management Strategies Using Comprehensive Numerical Simulation Models

Terue Goto (Magna International Japan Inc.)
Josef Hager·Thomas Lugmayr (Engineering Center Steyr GmbH & CO KG)
Noriyuki Muramatsu (Magna International Japan Inc.)

145 Fundamental study of a new concept substrate composed of Zeolite material for SCR system

Masafumi Kunieda (IBIDEN Co., Ltd.)
Takahiko Ido·Ken Yoshimura·Kazushige Ohno (IBIDEN Co., Ltd.)

[13:00~15:05]

31-08 Bio-Diesel Fuel

Chairperson: Shigeyuki Tanaka (Cosumo Oil)

146 Diesel Engine Performances Using BDF from the Waste Cooking Oil

—A Method of Recycling the Waste Cooking Oil
from Food Plant—

Tatsuaki Suzuki (Hiroshima Institute of Technology)
Itaru Fukutani (Polytechnic University)

147 Effect Analysis of FAME mixed Diesel Fuel on Diesel Engine Oil Performance

Keiichi Tsuchihashi·Kazunao Tajima·Motoshige Sato (Hino Motors)

148 Impact of Palm Oil Methyl Ester Mixed Diesel Fuel on Diesel Engine Oil Performance

Yasushi Naitoh·Kenji Anzai·Takashi Matsugaya (Japan Energy Corporation)
Keiichi Tsuchihashi·Kazunao Tajima·Motoshige Satou (Hino Motor Ltd.)

149 Influence of Bio-Diesel Fuel on Engine Oil performance

Shigeaki Takeshima (Nippon Oil Corporation)

150 The effect of antioxidant addition on the oxidation stability of low biodiesel blend

Kotaro Mori·Koji Yamane·Kiyoshi Kawasaki (University of Shiga Prefecture)

[15:25~17:05]

32-08 Advanced Fuels Combustion and Tribology

Chairperson: Akemi Ito (Hino Motors)

151 Improvement of DI Diesel System by Utilizing GTL fuel Specifications

Toshiya Nakajima·Ryoji Nishiumi·Koji Kitano·Ichiro Sakata
(Toyota Motor Corporation)
Richard H.Clark (Shell Global Solutions)

152 (Cancelled) The Effect of Contents of Cetane Enhancer and Biodiesel additive in Compressed Ignition Type LPG Fuel

Doo Sung Baik (Daejin University) Seang Wock Lee (Kookmin University)

153 Analysis of deposit formation mechanism on TEOST 33C by engine oil containing MoDTC

Satoru Yoshida·Yasushi Naitoh (Japan Energy)

154 Viscosity Measurement of Water-in-Oil Emulsion Fuel for Diesel Engines

Hisashi Nobayashi (Fukuoka University Graduate School)
Tomohiro Honda·Shigeaki Moriyama (Fukuoka University)
Kazuaki Watanabe (Nissin Co., Ltd.)

155 The Study on Wear of Nozzle Valve Seat of Diesel Fuel Injector

Daisuke Kazama·Hidenori Kosaka·Masabumi Masuko
(Tokyo Institute of Technology)
Akio Tanaka·Masaaki Kato (Denso)

5.22 (Thu)

301 (3F)

[9:30~10:45]

33-08 Driver's Workload

Chairperson: Mieko Ohsuga (Osaka Institute of Technology)

156 (Cancelled) Evaluation of driver's autonomic nervous system activity by simultaneous measurement of respiration, heart rate, and pulse transit time.

Makoto Mishina (Cyvision, Ltd.)

157 Cancelled

158 A study on burden degree and facial expression change of drivers using cellular phone calls

Keiichiro Kobayashi·Mami Yamakita·Osami Yamamoto
·Muneo Yamada·Tomoaki Nakano·Shin Yamamoto (Meijo University)

5.22 (Thu)

- 159 **Measuring the Driver's Mental Workload in the Peripheral Vision Area by Using Vestibulo-Ocular Reflex**
 Satoru Tokuda (Wichita State University, Kansas)
 Goro Obinata·Tasuku Usui (Nagoya University)
 Yasuhiro Inuzuka·Hiroto Hamada (Toyota Motor Corporation)
- 160 **Influence of Cognitive Distraction on Driver's Eye Movement During Preparation of Changing Lanes**
 Huiqing Zhou (University of Tsukuba)
 Makoto Itoh·Toshiyuki Inagaki (University)

[13:00~15:05]

34-08 Nano-Particle in Exhaust from Automotive
 <OS> Chairperson: Shinichiro Okayama (Nissan Motor)

- 161 **Particle Counting for Future Legislations**
 Izumi Fukano (AVL Japan K.K.)
 Manfred Linke·Alexander Bergmann·Wolfgang Schindler
 ·Katia Giovannella (AVL GmbH)
- 162 **Particle number emissions from various vehicles with PMP proposal method**
 Tetsuya Yamashita Hiroshi Ito·Hiroyuki Isawa
 ·Ichiro Sakata (TOYOTA MOTOR CORPORATION)
- 163 **Molecular Selective Real-Time Analysis of Aromatic Hydrocarbons in the exhaust gas using Resonance Enhanced Multi-Photon Ionization Method**
 Kentaro Misawa·Jun Matsumoto·Yohei Yamato
 ·Shun-ichi Ishiuchi·Masaaki Fujii (Tokyo Institute of Technology)
 Koichi Tanaka·Jun Nakagawa·Katsumi Endo (Toyama)
 Shun-ichi Hayashi (Nippon Steel)
 Kotaro Suzuki·Hiroyuki Yamada·Yuichi Goto
 (National Traffic Safety and Environment)
- 164 **Molecular Selective and Real-time Analysis of Phenol in the Exhaust Gas using Resonance Enhanced Multi-photon Ionization Technique and Impact Assessment on the Atmospheric Environment**
 Jun Matsumoto·Kentaro Misawa·Yohei Yamato
 ·Shun-ichi Ishiuchi·Masaaki Fujii (Tokyo Institute of Technology)
 Koichi Tanaka·Jun Nakagawa·Katsumi Endo (Toyama)
 Shun-ichi Hayashi (Nippon Steel Corporation)
 Kotarou Suzuki·Hiroyuki Yamada·Yuichi Goto (National Traffic)
- 165 **Composition Analysis of Fine Particles from Diesel Vehicles using PIXE**
 Yuichi Goto (National Traffic Safety and Environment Laboratory)
 Katsumi Saito
 (Environmental Research & Information Center of Akita Prefecture)

302 (3F)

[9:30~12:10]

35-08 Active Safety Simulation
 Chairperson: Takamasa Suetomi (Mazda Motor)

- 166 **A Development of a Traffic Simulator of Evaluating Safety Systems: STREET**
 —Reproduction of Traffic Accidents and Evaluation of Safety Systems—
 Hironobu Kitaoka·Tetsuo Kurahashi·Hiroko Mori·Tatsuya Iwase
 ·Takashi Machida·Akio Kozato·Masahiko Yamashita·Yoshikatu Kisanuki
 (TOYOTA CENTRAL R&D LABS., INC.)
- 167 **A Development of a Traffic Simulator of Evaluating Safety Systems: STREET**
 —Pedestrian Model for Vehicle-Pedestrian Accidents—
 Hiroko Mori·Tetsuo Kurahashi·Tatsuya Iwase·Takashi Machida
 ·Akio Kozato·Masahiko Yamashita·Hironobu Kitaoka
 (TOYOTA CENTRAL R&D LABS., INC.)
- 168 **A Development of a Traffic Simulator of Evaluating Safety Systems: STREET**
 —Cognition Model—
 Takashi Machida·Tetsuo Kurahashi·Tatsuya Iwase·Hiroko Mori
 ·Hironobu Kitaoka (TOYOTA CENTRAL R&D LABS., INC.)
- 169 **A Development of a Traffic Simulator of Evaluating Safety Systems: STREET**
 —Injury Model—
 Yoshikatsu Kisanuki·Tetsuzou Inoue·Hironobu Kitaoka
 ·Hiroko Mori·Tetsuo Kurahashi·Tatsuya Iwase
 ·Takashi Machida (TOYOTA CENTRAL R&D LABS., INC.)

- 170 **Requirements for function and verification of the traffic simulation for active safety system**
 Naohiro Yuhara (Nihon University)
- 171 **Development of Universal Driver Model in Traffic Simulator for Evaluating Vehicle's Preventive Safety (the first report)**
 Takeshi Tomaru·Yoshimi Furukawa (Shibaura Institute of Technology)
 Masaki Tamada (KOZO KEIKAKU ENGINEERING Inc.)

[13:00~14:40]

36-08 Driving Simulator
 <OS> Chairperson: Hidehisa Yoshida
 (National Defense Academy of Japan)

- 172 **Development of Driving Simulator with high reality for town driving**
 Takashi Yonekawa·Masami Aga·Misa Kadowaki (Toyota Motor Corporation)
 Sueharu nagiri·Yasuo Sakaguchi (Toyota Central R&D LABS.,INC.)
 Atushi Araki (Mitsubishi Precision CO.,LTD.)
- 173 **Motion Drive Method for a High-Fidelity Driving Simulator and Motion Sickness Valuation**
 Yasuo Sakaguchi·Sueharu Nagiri·Masayuki Okuwa (Toyota Central R&D Labs., Inc.)
 Takashi Yonekawa·Masami Aga·Hideki Sakai (Toyota Motor Corp.)
- 174 **Development of Visual Display System for Driving Simulator**
 Tsunenori Otani (Mitsubishi Precision) Takashi Yonekawa (Toyota Motor)
 Atsushi Araki·Koji Enomoto (Mitsubishi Precision)
 Sueharu nagiri·Noboru Sugiura (Toyota Central R&D)
- 175 **Evolution and Application of Visual and Scenario system for Driving Simulator**
 Hiroaki Ito·Hiroshi Kanno·Masami Nerio (Mitsubishi Precision)

[9:30~11:10]

37-08 Advanced Gasoline Engine Technology (New Technology-I)
 Chairperson: Akio Yoshimatsu (Toyota Motor)

- 176 **Development of camless engine for vehicle**
 Masaru Ogura·Morimoto Yasuhiro (Nippon Institute of Technology)
- 177 **Development of camless engine for small size two-wheeled vehicle**
 Masaru Ogura·Kazuhiro Kimishima·Naoki Ishida (Nippon Institute of Technology)
- 178 **Six cycle engine with recovery mechanism**
 —Proposal for highly effective internal combustion engine—
 Kazuo Ooyama (JOHO Corporation)
- 179 **Thermal Efficiency improvement of High Compression Ratio Knock Free SI Engine**
 Koji Morikawa·Hiroshi Oiwa·Makoto Kaneko
 ·Toyohiko Kameoka (Fuji Heavy Industries Ltd)
 Yasuo Moriyoshi·Takafumi Yamada (Chiba University)

[13:00~15:05]

38-08 Advanced Gasoline Engine Technology (New Technology-II)
 <OS> Chairperson: Masatoshi Kuroyanagi (Denso)

- 180 **Refined Gasoline Engine Technologies for Low CO₂ and Fun to Drive**
 Masashi Uchiyama (AVL Japan K.K.)
 Paul E. Kapus·Guenter K. Fraidl (AVL List GmbH)
- 181 **Controlling Engine System from the Perspectives of Chaos Theory**
 Kazuhiro Matsumoto·Ichiro Tsuda (Hokkaido University)
 Yukiharu Hosoi (Yamaha Motor Co.Ltd.)
- 182 **Development of New V6 Gasoline Engine with New Variable Valve Actuation System**
 Shin Ikeda·Takashi Ishizuka·Shigekazu Fuji (NISSAN MOTOR CO.,LTD.)
- 183 **The high performance new V6 gasoline engine with bi turbocharged from NISSAN**
 Yuzo Ishikawa·Jyunichi Yajima (NISSAN MOTOR CO.,LTD.)
 Naoki Nakada (NISSAN MOTOR Company)
- 184 **Development of a New V8 Engine with Variable Valve Event and Lift**
 Kazuaki Ikematsu·Hajime Miura·Tatsuya Matsuura
 ·Tetsuro Murata (NISSAN MOTOR CO., LTD.)

304 (3F)

[9:30~11:10]

39-08 The Latest CAE and Test Technologies for NVH IV
 Chairperson: Nobuya Hatou (Nissan Motor)

- 185 **Efficient Model of Structure-Borne Noise in a Fully Trimmed Vehicle from 200Hz to 1kHz**
 Arnaud Charpentier (ESI North America) Kazuki Fukui (Nissan Motor)
- 186 **Vehicle Subassembly NVH Target Setting Using Statistical Energy Analysis**
 Chadwyck T. Musser (Cambridge Collaborative, Inc.)
 Tej Bharj (Ford Motor Company)
- 187 **(Cancelled) Use of Transient SEA Models to Measure Damping in Vehicle Structures**
 Jerome E Manning (Cambridge Collaborative, Inc.)
- 188 **Efficient Interior Noise Source Identification based on conformal mapping using SONAH holography for details on selected panels**
 Svend Gade·Jorgen Hald·Jakob Morkholt
 Jesper Gomes (Bruel & Kjaer, Narum, Denmark)
- 189 **Approximate FRF Bounding for Acoustic Response of Probabilistically Uncertain Vehicle Structures**
 Leo William Dunne (CDH AG)
 Julian Francis Dunne (University of Sussex, UK)

[13:00~14:15]

40-08 The Latest CAE and Test Technologies for NVH V
 <OS> Chairperson: Akihiro Yamauchi (Toyota Motor)

- 190 **(Cancelled) Application of Vibro-Acoustic Coupling Factor to reduce the body noise sensitivity using large-scale analysis model**
 Hiroshi Shimada·Yasuhisa Okano (NISSAN MOTOR Co., LTD.)
 Takafumi Mochizuki·Yutaka Nagao·Satoshi Ikeda·Hideto Momii (ESTECH CORP.)
- 191 **Fundamental Study on Structural Design by Using Modal Expansion of Structural Intensity**
 Toru Yamazaki (Kanagawa University)
 Nozomu Numata (Graduate School of Kanagawa University)
- 192 **Tire Radiation-Noise Prediction Using FEM**
 Takanari Saguchi (Bridgestone Corporation)
 Kenshiro Kato·Tatsuya Tomida·Kenshiro Kato (Bridgestone)
- 193 **Application of Discretized Standing Waves Tire Model for road noise**
 HISAYOSHI MATSUOKA (NISSAN MOTOR)

311+312 (3F)

[9:30~12:10]

41-08 Injury Outcome & Dummy
 <OS> Chairperson: Koshiro Ono
 (Japan Automobile Research Institute)

- 194 **Analysis of Pregnant Dummy Responses during Automotive Low-Speed Frontal Collisions**
 Yasuki Motozawa (Honda R&D Co., Ltd.)
 Masahito Hitosugi (Dokkyo Medical University School of Medicine)
 Takeshi Abe (Honda R&D Co., Ltd.)
 Shogo Tokudome (Dokkyo Medical University School of Medicine)
- 195 **The effect of emergency tension retractors for pregnant women drivers involved in rear-end vehicle collisions**
 Masahito Hitosugi·Hitoshi Kawato·Shogo Tokudome
 (Dokkyo Medical University School of Medicine)
- 196 **Response Characteristics of the WorldSID**
 Kimio Hikasa·Shigeru Hirayama·Atsushi Togawa
 Hiroshige Nagumo·Tomasaburo Okabe (NISSAN MOTOR CO., LTD.)
- 197 **Analysis of Abdominal Injuries in Front Seat Passengers at Frontal Impact**
 Hitoshi Idda (Toyoda Gosei CO., LTD.) Masahito Hitosugi (Dokkyo University)
 Ichizo Shiga·Shigeyuki Suzuki·Masaya Sakamoto (Toyoda Gosei CO., LTD.)

- 198 **Study on Bicycle Injury in Accident**
 Nobuaki Takubo·Kenshiro Kato (National Research Institute of Police Science)
- 199 **Immunostaining observation of cerebral nerve damage**
 Masamichi Tairako (Graduate School of Nihon University)
 Yasuhiro Mochizuki·Hiromichi Annoh·Testuya Nishimoto (Nihon University)

[13:00~14:15]

42-08 Human Modeling&Crash Analysis
 <OS> Chairperson: Hiroyuki Okamoto (Toyota Motor)

- 200 **FEM Analysis of the Diffuse Brain Injury**
 Dai Watanabe (Seikei university graduate school) Kohei Yuge (Seikei university)
 Tetsuya Nishimoto (Nihon university) Shigeyuki Murakami (Murakami Clinic)
 Hiroyuki Takao (Jikei university Daisan hospital)
- 201 **Occupant Kinematics Behaviour and Muscle Activities during Pre-Impact Braking and Swerving Based on Volunteer Tests**
 Susumu Ejima·Sven Holcombe·Koshiro Ono (Japan Automobile Research Institute)
 Kouji Kaneoka (Waseda University)
 Makoto Fukushima (Tsukuba Medical Center)
- 202 **Development of the Human Lower Limb FE Models of Adult and Elderly Person Considering Aging Effects**
 Osamu Ito·Yasuhiro Dokko (Honda R&D Co.,Ltd) Kazuki Ouhashi (PSG Co.,Ltd)

313+314 (3F)

[9:30~12:10]

43-08 Powertrain Tribology
 Chairperson: Masahiko Ohtani (Isuzu Motors)

- 203 **Study of piston ring lubricating condition in break in process —Effect of IP (CrN) Coating Ring and Plateau Honing Cylinder on Friction—**
 Ryo Wakabayashi·Minoru Kawanishi·Hideki Yoshida (Riken)
- 204 **(Cancelled) A Coupled Simulation of Piston Ring Dynamics and Lubrication —Effect of Ring-Groove Friction on Ring-Bore Friction—**
 Tomohisa Yamada·Shuzou Sanda·Hideto Inagaki
 Norikazu Katsumi (Toyota Central R&D Labs., Inc.)
 Motoichi Murakami (Toyota Motor Corp.)
- 205 **Relation between Lubricating Oil Consumption and Oil Evaporation on Cylinder Wall in Gasoline Engine**
 Naoki Iijima·Takeo Sakurai·Satoru Suyama·Masaaki Takiguchi
 (Musashi Institute of Technology)
 Yasuo Harigaya (Utsunomiya University)
 Hideki Yoshida (Riken Corp.)
- 206 **Effect of Surface Texture on Lubrication of Engine Bearings calculated with an Elasto-hydrodynamic Lubrication model**
 Toshihiro Ozasa (Osaka Electro-Communication University)
- 207 **Revision of JASO M347 Automatic transmission fluids-Test method for shear stability —Report on the activity of shear stability test working group in automatic transmission fluids subcommittee—**
 Tsuyoshi Yuki (Sanyo Chemical Industries, LTD.)
 Hitoshi Hamaguchi (Evonik Degussa Japan)
 Makoto Maeda (JATCO Ltd)
- 208 **A Quantum Chemical Molecular Dynamics Study on the Tribochemical Reaction of an Engine Oil Additive**
 Tasuku Onodera·Yusuke Morita
 (Graduate School of Engineering, Tohoku University)
 Ai Suzuki (NICHE, Tohoku University)
 Riadh Sahnoun·Michihisa Koyama·Hideyuki Tsuboi
 Nozomu Hatakeyama·Akira Endou·Hiromitsu Takaba
 Carlos DelCarpio·Momoji Kubo (Graduate School of)
- 209 **Effect of Surface Termination on Super-low Friction of Diamond Film: A Computational Chemistry Study**
 Yusuke Morita·Tasuku Onodera (Graduate School of Engineering, Tohoku University)
 Ai Suzuki (NICHE, Tohoku University) Riadh Sahnoun
 Michihisa Koyama·Hideyuki Tsuboi·Nozomu Hatakeyama
 Akira Endou·Hiromitsu Takaba·Carlos DelCarpio
 Momoji Kubo (Graduate School of)

414+415 (4F)

[9:30~12:10]

44-08 Aerodynamics&CFD

Chairperson: Kazuo Yanagimoto (Mitsubishi Motors)

- 210 Study of Improving Predictive Accuracy for Cooling Fan Using CFD
—2nd Report: Research on the method of improving predictive accuracy in low flow rate region—
Akio Tasaki·Itsuei Kohri (Musashi Institute of Technology)
Yukio Matsushima (Mitsubishi Fuso Truck & Bus)
- 211 CFD analysis on the cooling system performance of a rear engine bus
Minho Kim·Jeonghwan Choi·Jongchan Park
·Junghwan Lim (Hyundai motor)
- 212 Benchmark of CFD software on low aerodynamic drag body
Itsuei Kohri (Musashi Institute of Technology) Hideo Asano (Denso)
Shingo Itoh (ISR) Yuhichi Itoh (Kisarazu Technical College)
Hideki Tohya (ISUZU) Yoshihiro Okada (MAZDA)
Kohzo Kitoh (Kitoh Kozo Technical Office)
Kyoji Kamemoto (Yokohama National University)
Yoshihiko S
- 213 Improvement of the aerodynamic lift prediction method for passenger vehicles, using CFD (2nd report)
Kousuke Nakasato·Hiroyuki Shiozawa·Edouard Boujo (Nissan Motor)
- 214 LES of the flow around a rotating wheel
Jun Yanagihara (Hokkaido Univ.) Kozo Kitoh (Kozo Kitoh Technology)
Timo Kuthada (IVK/FKFS Stuttgart) Takuji Nakashima (Hiroshima Univ.)
Nobuyuki Oshima·Makoto Tsubokura (Hokkaido Univ.)
- 215 The New 50% Scale Aerodynamic Wind Tunnel with Moving Belt System
Michiko Usui·Hisashi Tanaka·Akira Murata (Nissan Motor Co.LTD)

[13:00~14:40]

45-08 Climate Control

Chairperson: Kunio Nakagawa (Ashiya University)

- 216 Ejector-type Cool Box System
Mika Gocho·Hiroshi Oshitani·Yoshiaki Takano (DENSO)
- 217 Ejector system for small truck refrigerators
Etsuhisa Yamada·Haruyuki Nishijima·Hiedya Matsui (DENSO)
- 218 Development of Electric driven vane rotary compressor
Hirotsada Shimaguchi·Kensuke Osamura·Takashi Kubo
·Yutaka Satoh (Calsonic Kansei Corporation)
- 219 Effect of the evaluation booth for the accuracy of in-cabin VOC concentration
Satoshi Ichikawa·Keiko Matsui (Mazda)

416+417 (4F)

[9:30~11:10]

46-08 Metallic Materials III

Chairperson: Tsuyoshi Hanakawa (Fuji Heavy Industries)

- 220 Development of Free Cutting Steel without Lead Addition to Substitute SAE12L14
Toshiyuki Murakami·Kunikazu Tomita·Tetsuo Shiraga (JFE Bars & Shapes)
Katsunari Oikawa·Kiyohito Ishida
(Graduate School of Engineering Tohoku University)
- 221 Development of Ultra-fine Grained Stainless Steel by Nitrogen Absorption Treatment for Gaskets
Tadao Nishiyama·Takashi Katsurai (Honda R&D Automobile R&D Center)
Kazuhiko Adachi (SUMITOMO METAL INDUSTRIES)
- 222 Development of heat-resistant sintered stainless steel for bush of exhaust valve device at motorcycle
Naohisa Takahashi (Yamaha Motor Co.,Ltd.) Koichiro Hayashi
·Hideaki Kawata (Hitachi Powdered Metals Co.,Ltd.)
- 223 Development of copper-tin-bismuth material for transmission bushing
Hiromi Yokota·Ryo Mukai·Shinichi Kato
·Nahomi Hamaguchi (Taiho Kogyo)

501 (5F)

[9:30~12:10]

47-08 Diesel Combustion I

<OS> Chairperson: Hideyuki Ogawa (Hokkaido University)

- 224 HD Diesel Emissions Reduction with 4-Stage-Injection Strategy
Kentaro Kamiya () Go Aoki·Yutaka Murata·Jin Kusaka
·Yasuhiro Daisho (Waseda University)
- 225 The Effect of Oxygenated Fuel Added Gas Oil on Engine Performance of Premixed Charge Compression Ignition (PCCI) Engine Combined with OSKA System
—Kanazawa Institute of Technology Graduate School, Mechanical Engineering—
Koki Kitade Satoshi Kato (Kanazawa Institute of Technology, Mechanical)
- 226 HC Emission Characteristics in a PCI Engine
Zhili Chen (Tokai University)
- 227 An Application of "Blow Down Supercharging" with Exhaust Pressure Wave to Diesel Engine
Koichi Hatamura (Hatamura Engine Research Office, Ltd.)
- 228 Improvement of Premixed Compression Ignition Combustion using Wide range and High Rate EGR (Second Report)
—Effect of Intake Valve Close Timing and Compression Ratio—
Takuya Yamaguchi·Yuzo Aoyagi·Hideaki Osada (New A.C.E Institute CO.LTD.)
Yuichi Goto·Hisakazu Suzuki
(National Traffic Safety and Environment Laboratory)
- 229 Research and Development of Super Clean Diesel Engine for Next Generation Low Emission Vehicles 2nd Report
—Experimental Evaluation of High Boost and Wide Range and High EGR in the 6 Cylinder Engine.—
Masayuki Kobayash·Yuzo Aoyagi (New ACE)
Takayuki Adachi (NEW ACE) Tetsuya Murayama (New ACE)
Akira Noda·Yuichi Goto·Hisakazu Suzuki (NTSEL)

[13:00~15:05]

48-08 Diesel Combustion II

<OS> Chairperson: Hisakazu Suzuki
(National Traffic Safety and Environment Laboratory)

- 230 Numerical analysis in mechanism of diesel combustion that achieves both high thermal efficiency and low NOx emission characteristics with EGR and supercharge
Keishi Takada (Graduate School of Waseda University)
Jin Kusaka (Waseda University)
- 231 Influence of Compression Ratio and Fuel Cetane Number on Ultra-high EGR Low Temperature Diesel Combustion
—Discussion of the Effect of Premixing and Lowering Temperature—
Masaru Suzuki·Tie Li·Hideyuki Ogawa (Hokkaido University)
- 232 Numerical Analysis of Combustion Process in a Pre-mixed Diesel Engine
Katauya Saijyo·Yoshinori Ishii·Terukazu Nishimura (Isuzu Advanced Engineering Center)
- 233 Expansion of Premixed Compression Ignition Combustion Region by Using Hydrodynamic drive Camless System
Ryo Kitabatake · Naoki Shimazaki · Akihiko Minato · Hirotsuka Suzuki
·Terukazu Nishimura (Isuzu Advanced Engineering Center)
- 234 Study of Pre-mixed Compression Ignition Combustion on Multi Cylinder Diesel Engine (Fifth Report)
—A Study of Emission Improvement Using Two-stage Turbocharger—
Naoya Ishikawa·Kazuaki Kudou (Isuzu Advanced Engineering Center, Ltd.)

Small Auditorium (5F)

[9:30~11:35]

49-08 EFV21 Project I

<OS> Chairperson: Masahiro Shioji (Kyoto University)

- 235 [Keynote Speech] MLIT's Project for Development and Promotion of EFVs
Izumi Tokunaga·Yoshitaka Tada·Hiroaki Wada
·Akinobu Murai·Mihoko Sakai (MLIT)

5.22 (Thu) / 5.23 (Fri)

- 236 **An outline of the EFV21 project and its execution framework**
Akira Noda·Yuichi Goto·Kazuyuki Narusawa·Yoshio Sato·Hajime Ishii·Hisakazu Suzuki (National Traffic Safety and Environment Laboratory)
- 237 **Promotion of development and practical application of CNG / LNG HD vehicles**
Yuichi Goto·Akira Noda (National Traffic Safety and Environment Laboratory)
Hiroshi Kujirai·Kimio Kagawa (The Japan Gas Association)
Hidenobu Matsushita (The Japan Gas Association)
Akira Nakamura (Nissan Diesel Motor Co., Ltd.)
Shoichi Hosaka (Taiyo Nippon Sanso Co)
- 238 **Development of DME vehicles and strategy of practical use penetration**
Yoshio Sato (National Traffic Safety and Environment Laboratory)
Akira Nakamura (Nissan Diesel Motor)
Yutaka Takada (Organization for The Promotion of Low Emission Vehicles)
Koichi Nakamura (DME Promotion Center)
- 239 **Development and dissemination of the IPT hybrid bus**
Kazuyuki Narusawa·Morimasa Hayashida·KwangJae Myong (National Traffic Safety and Environment Laboratory)
Kunitoshi Shimizu·Takashi Koto·Atsuomi Obata (Hino Motors, Ltd.)

[13:00~15:05]

50-08 EFV21 Project II

<OS> Chairperson: Yasuhiro Daisho (Waseda University)

- 240 **Research and Development of Super Clean Diesel Engine for Next Generation Low Emission Vehicles 1st Report —6 Cylinder Engine Spec. and Experimental Result—**
Yuzo Aoyagi·Masayuki Kobayashi·Takayuki Adachi·Tetsuya Murayama (New ACE)
Akira Noda·Yuichi Goto·Hisakazu Suzuki (NTSEL)
- 241 **Development of FTD fueled vehicle**
Ichiro Sakata·Koji Kitano (Toyota Motor Corporation)
Noboru Uchida·Masaya Umemoto (Hino Motors)
Akio Imai·Nobuhiro Okabe (Showa Shell Sekiyu)
Hajime Ishii (National Traffic Safety and Environment Laboratory)
- 242 **R&D of Hydrogen Engine Systems for Heavy duty Truck**
Yasuo Takagi·Kimitaka Yamane·Kaname Naganuma (Musashi Institute of Technology)
Yoshio Sato·Atsuhiro Kawamura·Yuichi Goto (National Traffic Safety and Environment Lab.)
- 243 **The safety measures and the project for practical application of fuel cell vehicle**
Tetsuo Taniguchi·Kazuyuki Narusawa·Shin-ichiroh Itoh·Kazuo Matsushima·Michiaki Sekine·Hideaki Matsumura (Independent Administrative Institution National Traffic Safety and Environment Laboratory)
- 244 **Step Toward spread of biomass fueled vehicles**
Hajime Ishii (Traffic Safety and Environment Laboratory)
Daisuke Kawano·Takashi Sakamoto·Ipppei Hara·Yutaka Takada·Yuzo Aoyagi

5.23 (Fri)

301 (3F)

[9:30~12:35]

51-08 Driver Monitoring

<OS> Chairperson: Kenji Kimura (Toyota Motor)

- 245 **The Estimation of Driver's Arousal State (1)**
—Based on Facial Expression and Physiological Indices—
Mieko Ohsuga·Yoshiyuki Kamakura (Osaka Institute of Technology)
Yumiko Inoue (Osaka Institute of Technology)
Yoshihiro Noguchi·Roongroj Nopsuwanchai (AsahiKASEI Corporation)
- 246 **The Estimation of Driver's Arousal States (2)**
—Based on Blink Video Sequence—
Yoshihiro Noguchi·Roongroj Nopsuwanchai (AsahiKASEI Corporation)
Mieko Ohsuga·Yoshiyuki Kamakura (Osaka Institute of Technology)
- 247 **An examination of the drinking detection method**
—Comparison and examination from the behavior of eyes and steering characteristic—
Kota Ito·Osami Yamamoto·Muneo Yamada (Meijo University)
Michimasa Ito·Hideki Miyabe (Tokai Rika)
Tomoaki Nakano·Shin Yamamoto (Meijo University)

- 248 **Development of a sensor detecting eyelid positions**
Tomoharu Suzuki·Takeshi Hayashi·Kenichi Ogawa·Hiroshi Ishiguro·Adachi Jun (AISIN SEIKI)
Tamiko Nishina·Kenichi Ohue·Shigeyasu Uozumi (TOYOTA MOTOR CORPORATION)
Shinich Kojima·Satoru Nakanishi (TOYOTA CENTRAL R&D LABS)
- 249 **Development of a pre-crash safety system using driver's eyelid positions detection**
Tamiko Nishina·Kiyotaka Moriizumi·Kenichi Ohue·Shigeyasu Uozumi·Kenji Kimura·Akira Nakagoshi (TOYOTA MOTOR)
Tomoharu Suzuki·Jun Adachi (AISIN SEIKI Co.,Ltd)
- 250 **Premonitor of Sleepiness by Pupillary Fluctuation and Prevention of Drowsiness by Aromatic Stimuli**
Junpei Nishiyama·Shinichi Kinoshita·Takatugu Okada (Chubu Univ. Dept. Computer Science)
Koji Tanida·Masashi Kusumi (Honda R&D Co., Ltd. Automobile R&D Center)
Yutaka Hirata (Chubu Univ. Dept. Computer Science)
- 251 **Physiological indices change in driving scenes with danger and difficulties using driving simulator**
Yukiyo Kuriyagawa (Nihon University)
Mieko Ohsuga (Osaka Institute of Technology)
Ichiro Kageyama (Nihon University)

[13:30~15:35]

52-08 Older Driver

<OS> Chairperson: Minoru Kamata (The University of Tokyo)

- 252 **Measurement of older drivers' workload in various driving situations**
Satoru Hirose·Takayuki Yanagishima·Toshimichi Hanai·Tatsuyoshi Nanbu (NISSAN MOTOR)
Rino F.T.Brouwer (TNO Human Factors)
- 253 **Elderly drivers' behavior when passing through a non-signalized intersection without right of way**
Tatsuya Kamon·Yasuhiro Koshi·Hiroaki Kosaka·Masanori Takemoto·Hirokazu Nishitani (Nara Institute of Science and Technology)
- 254 **Aging change of visual information when driving**
Yoshiro Aoki (National Traffic Safety and Environment Laboratory)
- 255 **(Cancelled) Study of dangerous advanced age and dementia driver early detection approach**
Yasumi Ito·Shuichi Yanai (National Institute for Longevity Sciences)
Yoko Konagaya·Tomoyuki Watanabe (Obu Dementia Care Research And Training Center)
Naonori Ohno (Softopia Japan Foundation)
Tetsuya Nemoto·Hiroyuki Matsuura (National Institute for Longevity Science)
- 256 **Elderly Driving Ability Measurement System for Driving School**
Tatsuomi Noda·Hisayuki Tanahashi (Meijo University)
Muneo Yamada (Nagoya Electric Works Co.Ltd)
Mikiko Kawasumi (Aichi Syukutoku University)
Katumi Matsuda (FORUM 8 Co.Ltd)
Osami Yamamoto·Tomoaki Nakano·Shin Yamamoto (Meijo University)
- 257 **Assessment system for Older Adults with Dementia of the Alzheimer Type**
Tomoaki Nakano·Akira Kato·Youhei Kondo·Tatsuomi Noda (Meijo University)
Muneo Yamada (Nagoya Electric Works Co., Ltd.)
Mikiko Kawasumi (Aichi Shukutoku University)
Osami Yamamoto·Shin Yamamoto (Meijo University)

[15:55~17:10]

53-08 Alcoholic Interlock

<OS> Chairperson: Satoru Furugori (Mazda Motor)

- 258 **The study on acceptability of user when Alcohol Ignition Interlock System is used**
Tsutomu Asoh·Sousuke Sasaki (Japan Automobile Research Institute)
Bunji Atsumi (Japan Automobile Manufacturers Association, Inc. ADD-WG)
- 259 **Accuracy of breath alcohol detector for alcohol interlock system**
Bunji Atsumi·Makoto Ikeda (Japan Automobile Manufacturers Association ADD-WG)
Sousuke Sasaki (Japan Automobile Research Institute)
- 260 **Study of Breath Alcohol Detection**
Toshiyuki Taguchi (Toyota Central R&D Labs., Inc.)
Atsushi Nakashima·Kiyomi Sakakibara·Toshihiro Wakita (Toyota Central R&D Labs.)
Shohei Yabu·Bunji Atsumi (Toyota Motor)

302 (3F)

[9:30~11:35]

54-08 Driver Support System I

〈OS〉 Chairperson: Takashi Yonekawa (Toyota Motor)

- 261 **Research and Development of the Service for Providing Information on Obstacles Ahead for Practical Applications**
Miho Asano·Setsuo Hirai·Hideto Hatakenaka
·Hideyuki Kanoshima·Makoto Ogasawara (NILIM)
Hiroyuki Mizutani (AHSRA)
- 262 **Developing a AHS Safety Service for Driving Support in Merging Sections and its Effect**
Takao Aya·Hideto Hatakenaka·Hideyuki Kanoshima
·Takayuki Hirasawa·Sadayoshi Nishii (NILIM)
Kazuo Nagano (AHSRA)
- 263 **Development on Adaptive Cruise Control System using Navigation Information**
Masahide NAKAMURA·Yoji SETO·Yoshitaka UEMURA ·Takuya INOUE
·Shikou DEN·Minoru TAMURA (NISSAN MOTOR CO., LTD.)
- 264 **Analysis of Drivers' Deceleration Behavior and Application to Rear-end Collision Avoidance System**
Naohiko Tsuru·Kazuyoshi Isaji (DENSO) Takahiro Wada
·Shun'ichi Doi·Akihiro Nishiyama (Kagawa University)
Hiroschi Kaneko (PARIS MKI)
- 265 **Development of distance control assist system with force feedback pedal**
Yasuhiko Takae·Yoji Seto·Masahiro Kobayashi
·Takeshi Sugano·Ryota Satou·Kazunori Kurata
·Takayuki Ida·Kazuto Satou (Nissan Motor, Co., LTD)

[12:30~15:10]

55-08 Driver Support System II

〈OS〉 Chairperson: Hiroshi Mouri (Nissan Motor)

- 266 **Risk recognition and learning from driving experience —Towards the Risk Map System—**
Genya Ogawa Syunsuke Tezuka·Katsuyuki Kise (Fiji Heavy Industry Ltd.)
- 267 **Estimation of Driver's Risk Recognition State from Driving Behavior —Towards the Risk Map System—**
Syunsuke Tezuka·Genya Ogawa·Katsuyuki Kise (Fuji Heavy Industries Ltd.)
- 268 **A Study on System for Improving Parking Ability of Elderly Drivers**
Naohisa Hashimoto·Naohisa Hashimoto·Shin Kato
(National Institute of Advanced Industrial Science and Technology)
Sadayuki Tsugawa (Meijo University)
- 269 **Development of parking assistant system for Japanese market**
Hisashi chiba·Christian Danz·Kazutaka yamato·Jochen Kaller (Bosch)
- 270 **A Study on An Avoidance System of the Accident Caused by the Inner Radius Differential of Vehicle when Turning Right or Left at the Intersection**
Yasuhide Sudo·Jun Yoshida (Graduate School of Research Division
in Engineering, Musashi Institute of Technology)
Yasuhiro Fukuyoshi (Completion of Graduate School of Research
Division in Engineering, Musashi Institute of Technology)
Kunio Kobayashi (Faculty o
- 271 **Approaches to Analysis of Driver's Brain Activation Level with Chaotic Theory**
Hiroschi Tanaka (Shibaura Institute of Thecnology)
Yoshimi Furukawa (Shibaura Institute of Technology)
Kiyoshi Sato Kakuichi Shiomi Tatsuji Miyata Takahiro Ishida

[15:30~17:10]

56-08 Driver Support System III

〈OS〉 Chairperson: Hirotaka Oikawa (Hitachi)

- 272 **Verification of the Applicability of the Microwave Radar to the Rear Pre-crash Safety System**
Hideyuki Ohara·Yoichi Toguchi (OMRON)
- 273 **Proposal of Other Vehicle Detection Method using Two Cameras**
Toshio Ito (Daihatsu Motor Co., Ltd.)
Kazuyoshi Yamashita·Yukio Kaneda (Kwansei Gakuin University)

- 274 **Pedestrian Recognition by a Single Camera for Driver Assistance**

Hirotomo Muroi·Ikuko Shimizu
·Pongsathorn Raksincharoensak·Masao Nagai
(Tokyo Univ. of Agri. and Tech.)

- 275 **Robust Estimation of Vehicle Ego-motion for Monocular Camera System**

Hiroyoshi Koitabashi·Takashi Iketeni·Yoshiro Murata
·Yoshinobu Asokawa (OMRON Corporation)

303 (3F)

[9:30~11:35]

57-08 Vehicle Dynamic Sensing & Control

Chairperson: Jun Nakahara (Honda R&D)

- 276 **(Cancelled) Active Four-wheel Steering System in Critical Region**
Yoshikazu Hattori·Eiichi Ono·Shoji Asai
(Toyota Central Research and Development Laboratories)
Takahiro Kojo·Theerawat Limpibunterng·Mitsutaka Tanimoto
(Toyota Motor Corporation)
- 277 **Analysis on the Driver's Adaptive Performance for the Shift of Plant Gain**
Yoshikazu Hattori
(Toyota Central Research and Development Laboratories)
Syun-ichi Doi (Kagawa University)
- 278 **State Estimation Algorithm for Compensating Failure of Position and Relative Position Sensors during Platooning using Inter-Vehicle Communication**
Takeki Ogitsu·Manabu Omae·Hiroschi Simizu (Keio University)
- 279 **Estimation Method of the Vehicle Mass for the use of Chassis Control System**
Heeyoung Jo·Jaemin Yun·Sangho Lee (Hyundai-Motor Company)
Kunsoo Huh·Kwangjin Han (Hanyang University)
- 280 **Measurement technology of Tire contact patch under Actual vehicle driving conditions**
Hiroschi Kobayashi·Kozo Oyama (TOYOTA MOTOR CORPORATION)
Masaya Kaneshima (TOYOTA TECHNICAL DEVELOPMENT)
- 281 **SLIMSENS - Automotive Radar and Communications System —A Single Aperture 76 GHz Automotive Radar and 63 GHz Communications Sensor—**
Edward Hoare·Nigel Priestley (E2V Technologies Plc)
Robert Henderson (BAE Systems, Advanced Technology Centre)
Nigel Clarke (Jaguar Cars Ltd) Robert Foster
(University of Birmingham)

[13:00~14:40]

58-08 Dynamics and Safety of Motorcycles

〈OS〉 Chairperson: Minoru Nishio (Absolute)

- 282 **Study on performance index for two-wheeled vehicle behavior**
Ichiro Kageyama (Nihon University)
- 283 **Study on visibility and glare of Motorcycle AFS**
Masanori Motoki·Hiroschi Hashimoto·Tamotsu Hirao
(Japan Automobile Research Institute)
- 284 **Fundamental Study on a Speed Sensitive Steering Damper for Motorcycles**
Junji Hirasawa (Ibaraki College of Technology)
- 285 **(Cancelled) Evaluation of Lane-Keeping-Assistance System for Motorcycles Using Rider Control Model**
Yoshitaka Marumo (Nihon University)
Nozomi Katagiri (Graduate School of Nihon University)
Hitoshi Tsunashima (Nihon University)
- 286 **A Study on Cornering Characteristics of Motorcycle Tire While Breaking**
Akinori Shinagawa·Shigeru Fujii (Yamaha Motor)
Kimihiro Hayashi (JRI Solutions)
Masaki Shiraishi (SRI R&D)

[15:00~17:05]

59-08 Steering System

Chairperson: Hidekazu Suzuki (Mitsubishi Motors)

- 287 **Study on the Improvement of Steering Maneuverability of Electric Power Steering**
—Proposal of Control logic for improvement of Steering Feeling at Returning Wheel Operation—
Shuichi Kinjo (Graduate Student of Kanagawa University)
Eiichi Kojima·Toru Yamazaki (Kanagawa University)
Chaojiu Wang (Showa Ltd)
- 288 **Analysis of on-center steering feel by a steering simulator**
Daisuke Yamada·Hiroshi Kuroyanagi·Eiichi Ono
(Toyota Central Research and Development Laboratory)
Ikuo Kushiro·Kenji Konomi·Shinsuke Sato (Toyota Motor Corporation)
- 289 **Efficiency improvement Study of High-power Electric Power Steering System**
Masaharu Yamashita·Takeshi Goto
(TOYOTA MOTOR CORPORATION)
Yoshinobu Shimizu·Keisuke Izutani (JTEKT CORPORATION)
- 290 **Practical Use Technology of High-power Electric Power Steering System**
Toshihiro Takahashi·Hiroyuki Suzuki·Takuya Nakayama
·Kenichi Fujiyama·Sigetoshi Yamaguchi (JTEKT CORPORATION)
Masaharu Yamashita·Takeshi Goto·Takatoshi Saito
(TOYOTA MOTOR CORPORATION)
- 291 **Investigation about Improving Efficiency of Worm Gear with New Tooth Profile EPS**
Katsuji Watanabe·Yasuo Shimizu
(Honda R&D Co., Ltd. Automobile R&D Center)

304 (3F)

[9:30~12:10]

60-08 Sound Quality

〈OS〉 Chairperson: Yoichi Ogu (Mazda Motor)

- 292 **Sound Quality Evaluation Tool for Tire Noise Induced by Road Surface Texture Impact**
—Sound Synthesis by Modeling Physical Vibro-Acoustic Phenomena—
Masao Ishihama·Yuh Kakumoto (Kanagawa Institute of Technology)
- 293 **Principal Exhaust System Design Parameters to Improve Exhaust Sound "Linear" Impression**
Masao Ishihama·Yusuke Itoh (Kanagawa Institute of Technology)
- 294 **A research on the receptivity evaluation of the sounds which inform the approach of electric vehicle**
Michiaki Sekine·Takeharu Tanaka·Ichiro Sakamoto·Kazumoto Morita
(National Traffic Safety and Environment Laboratory)
- 295 **Application of a Transfer Path Analysis Using Principal Component Regression Method to Interior Sound at Acceleration**
Atsushi Sakamoto·Mutsuru Ozaki (Honda R&D Co., Ltd.)
- 296 **On the analysis of vortex structures of the narrowband noise generated from flow of rear-view mirrors**
Takeyuki Suzuki·Yoshimitsu Hashizume (SUZUKI MOTOR CORPORATION)
Toshitaka Minbu·Akiyoshi Iida (KOGAKUIN UNIVERSITY)
- 297 **Efficient Intake- and Exhaust Noise Optimisation based on Simulation Results**
Franz Brandl·Werner Biermayer (AVL List GmbH)
Andreas Dolinar·Hans-Herwig Priebisch
(Acoustic Competence Center Graz)

[13:00~14:15]

61-08 The Latest CAE and Test Technologies for NVH VI

〈OS〉 Chairperson: Hirotaka Shiozaki (Mitsubishi Motors)

- 298 **A new homogenization method for FEM dynamic simulation of composite sandwich materials**
Leonardo Ferrali (Nihon Tokushu Toryo Co., Ltd.)
Davide Caprioli (Rieter Automotive Systems)
Luca Guj (University of Rome "La Sapienza")

- 299 (Cancelled) **An Investigation into the Effects of Rolling Element Bearing Stiffness on Transmission and Driveline Transient Dynamics**
Nawazish Ali·Zaidi·Richard Dorling·Andrew Smith·Andy Poon (Romax Technology)
- 300 **Modal Parameter Estimation of Car Body by Non-linear Least Squares Approach**
Khanh Ngoc Duong·Takuya YOSHIMURA (Tokyo Metropolitan University)
Akira SUTO·Seiya NARIKUNI (Honda R&D.)
- 301 **Transducer Response Equalisation**
Svend Gade·Tommy Schack·Ole Thorhaug (Bruel&Kjaer, Narum, Denmark)

[14:35~16:40]

62-08 Noise & Vibration Riding Quality II

Chairperson: Tsuyoshi Yamashita (Honda R&D)

- 302 **Basic Study on Optimization in Transportation Environment of Fruits and Vegetables**
—Part 3: Experimental discussion of the freight behavior in the vegetables fruit transportation—
Hiroshi Uchida·Satoshi Konno·KIYOTASU SATOH
(National Federation of Agricultural Co-operative Associations (ZEN-NOH))
MASAMICHI KOJIMA·AKINORI FUJIYA
(Kanagawa Industrial Technology Center (KITC))
Yoshiaki Itoh (Kanagawa Industry Promotion Division)
- 303 **Basic Study on Optimization in Transportation Environment of Fruits and Vegetables**
—Part 4: Examination of freight vibration in post harvest handling of agricultural products—
Masamichi Kojima·Akinori Fujiya (Kanagawa Industrial Technology Center)
Yoshiaki Itoh (Industry Promotion Division)
Hiroshi Uchida·Kiyoyasu Satoh (National Federation of Agricultural Co-operative Associations (ZEN-NOH))
- 304 **Effects of Material and Dimensional Properties on Variations in Resonance Frequency of Brake Discs**
Toshikazu Okamura·Masanori Imasaki·Hiroyuki Yumoto (KIRIU Corporation)
- 305 **A Study of Friction Modeling for Friction-induced vibration Simulation (1st report)**
Junzo Tamari (ESTECH Corp.)
- 306 **Research of viscoelastic damping materials by experiments and FEM analysis**
Takao Mikami·Masaki fujikawa·Takaya Kobayashi
(Mechanical Design & Analysis co.)

311+312 (3F)

[9:30~10:45]

63-08 Noise & Vibration Riding Quality I

Chairperson: Shinichiro Iwai (Daihatsu Motor)

- 307 **Objective evaluation of subjective driving impressions**
Klaus Wolff·Rob Kraaijeveld·Jannis Hoppermanns (FEV)
- 308 **Vehicle Interior Noise Simulation VINS as a production-vehicle development tool**
Klaus Wolff·Peter Genender·Fabienne Pichot·Georg Eisele (FEV)
- 309 **Exterior Noise Contribution Analysis with Simulated Indoor Pass-by Measurement**
Yunseon Ryu·Andreas Schuhmacher (Bruel&Kjaer)
Masamitsu Hirayama (Bruel & Kjaer Japan)
- 310 (Cancelled) **Multi-axial Vibration Testing Methodology of Vehicle Component**
Chan-Jung Kim·Chul-Yong Bae·Dong-Won Lee
·Bong-Hyun Lee (Korea Automotive Technology Institute)
- 311 (Cancelled) **A Study on the Dynamic Characteristics of Door Module for Vehicle**
Chul-Yong Bae·Chan-Jung Kim·Seong-Jin Kwon
·Bong-Hyun Lee (Korea Automotive Technology Institute)
Woon-Sung Jang·Yu-Chul Mo (Daedong Hi-Lex)
- 312 (Cancelled) **A Study on the Shimmy & Shake Analysis based on Multi-body Dynamics**
Seong-Jin Kwon·Chul-Yong Bae·Chan-Jung Kim
·Was-Soo Kim·Bong-Hyun Lee (Korea Automotive Technology Institute)

[13:00~14:15]

64-08 Advanced Technology for Manufacturing Engineering
 <OS> Chairperson: Kazuo Muto (Polytechnic University)

- 313 **[Keynote Speech] Analysis of Complex Fluid Dynamics in Some Real Automotive Parts Using Particle Method**
 Kazuo Muto (The Polytechnic University)
 Hiromitsu Matsuda·Masamichi Ueki·Masashi Endo
 ·Takashi Natori (Fuji Technical Research Inc.)
- 314 **Mirror-like surface finish with ultra-high speed grinding for powertrain components**
 Kazuhiko Takashima (NISSAN MOTOR CO.,LTD.)
- 315 **(Cancelled) Development of machining process on plasma spray coating cylinderbore**
 Kimio Nishimura (NISSAN MOTOR.)
- 316 **Advanced Design and Manufacturing of Forged Components for Automotive Applications**
 —Lightweight Solutions with Forged Components—
 Hans Willi Raedt (Hirschvogel Automotive Group)

[14:35~16:40]

65-08 Comfortable Cabin
 <OS> Chairperson: Shinichi Hara (Valo Theraml Systems)

- 317 **[Keynote Speech] The SST Turbulence Model as a Basis for Industrial CFD Simulations**
 Florian R. Menter (ANSYS Germany GmbH)
- 318 **Evaluation of Thermal Environment in The Vehicle Cabin with Numerical Manikin**
 Takeshi Furuya·Itsuei Kohri
 (Musashi Institute of Technology)
 Kazuhiko Matsunaga (ISUZU MOTORS LIMITED)
- 319 **Development of Overall Thermal Sensation Index Based on Local Skin Temperature in Vehicle Cabin**
 Hajime Oi (Nissan Motor Co., Ltd.)
 Hiroki Nagayama (Nissan Motor)
 Yutaka Tochihara (Kyushu University)
- 320 **Engine management for an air conditioning system utilizing exhaust gas heat**
 Toshio Shudo·Kazuteru Toshinaga (Hokkaido University)
- 321 **Measurement of Convective and Radiant Heat Flux Using a RCEM**
 Tatsuya Kuboyama (Chiba Univ)
 Hidenori Kosaka·Tetsuya Aizawa (Tokyo institute of technology)

313+314 (3F)

[9:30~11:35]

66-08 Energy Saving & Eco-Drive
 Chairperson: Norimasa Iida (Keio University)

- 322 **The contributing factors to improving fuel economy in Eco-Drive (II)**
 Hideki Kato·Shinji Kobayashi·Yoshinori Kondo
 ·Keisuke Matsuhashi (National Institute for Environmental Studies)
- 323 **Consideration of Evaluation for Fuel Consumption under Using Air Conditioner**
 Nishio Yui (Waseda University Graduate School)
 Sakai Katsuharu·Suzuki Hisakazu (NTSEL)
 Kaneko Atsushi (Waseda University Graduate School)
 Murata Yutaka·Daisho Yasuhiro (Waseda University)
- 324 **Fuel Consumption Reduction by Solar Reflective Coating to an Automobile Body**
 Tomohiko Ihara·Yutaka Genchi·Yuki Kudo
 (National Institute of Advanced Industrial Science and Technology (AIST))
 Yoshikuni Yoshida·Ryuji Matsuhashi (University of Tokyo)
 Sakao Hira (Nippon Paint)
 Yasuhiro Kamijima·Katsuo Miki (Miki Coating Design Office)
- 325 **A Proposal on a Ultra-small, Single-seat Vehicle and its Platoon Driving for Energy Saving**
 Sadayuki Tsugawa (Meijo University) Nobuaki Miki (Miki Engineering Office)

- 326 **(Cancelled) Relationship between Drivers' Deceleration Behavior and Safety of Vehicle-Platooning**
 Kouichi Matsunaga·Tomohiro Yokoyama
 ·Hironori Suzuki (Nippon Institute of Technology)
- 327 **The Result of CO₂ Emission Reduction by Corporates' Ecodrive Activities**
 —On the Activities of the Nationwide Ecodrive Contest 2007—
 Hiroshi Maji (Asua Corporation) Yasuhiro Daisho (Waseda University)
 Hitomi Kamiya·Dai Kobayashi
 (Environmental Restoration and Conservation Agency)

[13:00~15:05]

67-08 Innovation of Guidance and Control
 <OS> Chairperson: Yoshimasa Ochi (National Defense Academy)

- 328 **[Keynote Speech] Resaerch on Aircraft Operations Concept Enabled by Shared Information**
 Kohei Funabiki (Japan Aerospace Exploration Agency)
- 329 **Research and development for fault tolerant flight control system - Part2 General Review**
 Shinji Suzuki (The Tokyo University) Akira Yanagida (SJAC)
- 330 **Research and development for fault tolerant flight control system - Part 2 Flight experiments**
 Kazuya Masui (aa) Hiroshi Tomita·Akira Yanagida
- 331 **Recent advances in GPS/INS hybrid navigation technology for small UAVs**
 Rui Hirokawa (M)
- 332 **Study of a Redundant System on a Steer-by-Wire Vehicle**
 —About a Behavior Change Triggered by the Control Switch between Normal Mode and Failure Mode—
 Toshiaki Kasahara·Yuusuke Katou·Futoshi Matsuo·Junji Tsutsumi
 ·Kazutaka Adachi (Nissan Motor)

414+415 (4F)

[9:30~11:10]

68-08 Engine Components I
 Chairperson: Yuzo Aoyagi (New ACE Institute)

- 333 **CamInCam: The New Option for Variable Valve Timing**
 —Solution for SOHC and OHV—
 Akihiko Sekiguchi (MAHLE Japan Ltd.)
 Falk Schneider (MAHLE Ventiltrieb GmbH)
 Steven Simmonds·Mike Bassett (MAHLE Powertrain Ltd.)
- 334 **Timing Drive development for combustion engines**
 —Solution for SOHC and OHV—
 Joerg Lehmann·Martin Rebbert (FEV)
- 335 **(Cancelled) Study on Internally Geared Hypocycloid Mechanism (2nd Report)**
 —Improved Mechanism for Horizontally Opposed Type 4-Cylinder Engine Application—
 Takashi Matsuda·Takashi Matsuda·Motohiro Sato (Shizuoka University)
- 336 **Waza (Skilled Craftsmanship) That Created RA272 Exhaust Pipe used in Formula 1 Race in 1960's**
 Koji Ueda·Ryuichi Takahashi·Osamu Konno
- 337 **Development of high performance air filter media**
 Hiroyuki Ishii·Mitsutoshi Suzuki (MAHLE Filter Systems)
 Joerg vonSeggern (MAHLE Filtersysteme GmbH)

[13:00~15:05]

69-08 Engine Components II
 Chairperson: Takashi Inoue (Toyota Motor)

- 338 **Superior Heat Resistive Electrode for Super Ignition Spark plug**
 Hiroshi Nakao () Shinichi Okabe (NIPPON SOKEN,INC)
- 339 **High Efficiency Fuel Pump Development**
 Yoshihiko Honda (AISAN Industry)
 Sumito Takeda·Masaki Ikeya (AISAN Industry)
- 340 **Development of Miniaturized Fuel Pump Module for Small Motorcycles**
 Masaki Ueno·Minoru Ueda·Takashi Udono·Shunji Akamatsu (Honda R&D Co., Ltd.)
 Mineo Torikai·Mitsuru Fukuda (Keihin)

5.23 (Fri)

- 341 **A Study of Squeak Noise in Mechanical Seal of the Water Pump**
Yunseok Kim·KyungWoo Lee·GyuHwan Kim (Hyundai-Kia Motors)
- 342 **Cam Cover Integrated Axial-Cyclone to Improve Crankcase Ventilation Oil Carry Over**
Pedro Bastias·Toru Arima
(Dana Corporation, Nippon Reinz, Yamato-Shi, Kanagawa-Ken, Japan)
Dimitrius Caloghero (Dana Corporation, Victor Reinz Mercosur, Gravatai, Rio Grande do Sul, Brazil)
Michael Puckett·David Nash (Dana Corporation, Victor Reinz North Ameri)

416+417 (4F)

[9:30~10:45]

70-08 Body Development

Chairperson: Hideyuki Yoshioka (Toyota Motor)

- 343 **Body Development for Product Families**
—Advanced Technologies in BMW 3 Series—
Michael Ahlers (BMW AG, Munich, Germany)
- 344 **Examination on dynamic bending characteristics of a CFRP beam using a progressive fracture model**
Daisei Abe·Yuta Urushiyama (Honda R&D Co.,Ltd.)
- 345 **Cancelled**
- 346 **Trends of freight truck body and semi-trailer**
Toshiho Takehita (Production department)

71-08 Development Analyses Evaluation Cancellation

- 347 **Cancelled**
- 348 **Moves to Session No.72-08' Safety**
- 349 **(Cancelled) A Study on the Stiffness Analysis of Brake Caliper Using Taguchi Method**
Ho-Joong Chae·Kyung-Hwan Park·Wontae Jeong (Hyundai MOBIS)

[13:40~14:55]

72-08 Safety

Chairperson: Tetsuo Maki (Musashi Institute of Technology)

- 348 **A Study on the Evaluation of Automotive Seat Covering**
—A Study on the Analysis Methods of Emotional Characteristics for Artificial Suede used in Automotive Seat Covering—
Won Seo·Joo Young Maeng·Yun Seok Kim (Hyundai-Kia Motors)
Yeong Nam Hwang·Won Jun Kim·Yun Hi Ahn (Kolon Industries Inc.)
- 350 **Robust design method for restraint system in multi side impact test modes using multi-objective optimization**
Koushi Kumagai·Satoshi Fukushima·Takeshi Uriu
·Tsuayoshi Yasuki (Toyota Motor Corporation)
- 351 **Ribcage Characterization for FE Using Automatic CT Processing**
Sven Holcombe·Susumu Ejima (Japan Automobile Research Institute)
Hannu Huhdanpaa·Alexander Jones Stewart Wang (University of Michigan)
- 352 **(Cancelled) PreScan**
—Simulation Environment for Active Safety Systems—
Marcel Wantenaar (TNO)

501 (5F)

[9:30~11:10]

73-08 Up-to-date Transmission Technology I

<OS> Chairperson: Hruo Houjoh
(Tokyo Institute of Technology)

- 353 **Accuracy and Fatigue Performance of Finish Rolled Cr-Mo Sintered Steel Gears**
Teruie Takemasu (Tokyo University of Science, Suwa)
Takao Koide (Tottori University)
Yoshinobu Takeda (H_gan_s Japan K.K.)
Toshinaka Shinbutsu (Nissei Co.,Ltd.)

- 354 **A New Design System for Face-Hob Type Hypoid Gears (Second Report)**
—Relationship between cutting machine settings and tooth geometry—
Masaki Kano·Keiichiro Tobisawa·Kohei Saiki·Akira Ono
(Fuji Heavy Industries Ltd)
- 355 **A Layered Model Based Diagnosis: Application to a Gear Box System**
Kazuhide Togai (Mitsubishi Motors Corporation)
Hiroki Yamaura (Mitsubishi Automotive Engineering Co.)
Zhenchun Xia (MB SIM Technology Co. Ltd)
- 356 **Development of DCTF**
Hiroshi Fujita·Toshiaki Iwai·Tomomi Miyaji (Idemitsu Kosan)
- 357 **(Cancelled) A recent ATF subcommittee activity report**
makoto maeda (JATCO Ltd)

[13:00~15:05]

74-08 Up-to-date Transmission Technology II

<OS> Chairperson: Yasukazu Sato (Yokohama National University)

- 358 **Temperature rise analysis in traction contact areas of toroidal CVTs**
Shinji Miyata (NSK Ltd.)
Bernd-Robert Hoehn·Klaus Michaelis·Oliver Kreil
(Technische Universität München)
- 359 **Improvement of Performance of Shaft Drive CVT by Using Counter Shaft**
Masashi Yamanaka (Tohoku University)
Shingo Okumoto (Graduate school of Tohoku University)
Yukihito Narita·Katsumi Inoue (Tohoku University)
- 360 **Development of Metal Pushing V-belt for Torque Converter-type CVT Applicable to 1.5-Liter Class Vehicles**
Masamichi Harada·Yooru Yagasaki·Hideaki Aoyama
·Kenji Harue·Kenta Umetu (Honda R&D Co.,Ltd.)
- 361 **Pump-induced Pressure Pulsation generated in a Automotive CVT Hydraulic Control Circuit**
—Research on the Source Pulsation Characteristics of a Vane Pump—
Kazuhsa Nakamura (Graduate Student of Kanagawa University)
Eiichi Kojima·Toru Yamazaki (Kanagawa University)
Masaru Katsuki·Akira Shimada (JATCO Ltd)
- 362 **Cone-Ring-Transmission: A Fuel Efficient CVT for Small Cars**
Jan Schlipf (GIF mbH)

[15:25~17:30]

75-08 Advanced Gasoline Engine Technology (Component Technology)

<OS> Chairperson: Yuichi Shimasaki (Honda R&D)

- 363 **Study on Octane number Requirement of Recent Commercial Vehicles**
Teruo Suzuki·Masato Murase·Mitsuaki Wakita·Yukio Akasaka
(JOMO Technical Research Center)
- 364 **Development of Continuous Variable Valve Event and Lift Control System (VEL)**
Yoshihiko Yamada·Kenichi Machida
(Hitachi,Ltd,Automotive Systems)
- 365 **Lubrication system development of new high performance V6 engine**
Arata Taguchi Shunsuke Nakama (Nissan)
- 366 **Cylinder block development of new high performance V6 engine**
Akihiro Ikeda (NISSAN MOTOR Co., LTD.)
Masaya Nakajima·Takahiro Hamada·Eiji Shiotani
·Kimio Nishimura·Takashi Iiya (NISSAN)
- 367 **Study on Rhodium Support Technologies**
Tetsuya Watanabe·Kinichi Iwachido·Keisuke Tashiro
(Mitsubishi Motors Corporation)

502 (5F)

[9:30~11:10]

76-08 Diesel Exhaust Emission Control
 <OS> Chairperson: Keiji Kawamoto (Nissan Motor)

- 368 (Cancelled) Thermal management
—Demands and challenges for future Aftertreatment Systems—
Andreas Wiartalla·Juergen Schnitzler·Christopher Severin
·Volker Scholz (FEV)
- 369 Evaluation of Active Diesel Particulate Filter Regeneration System Using Post Injection in a HD Diesel Engine
DAESU JUN·DAESU JUN·SeokJae Kim·JeongKi Kil
·GwonKoo Yeo·HongJip Kim (Hyundai Motor)
- 370 Microscopic Visualization of PM Trapping and Regeneration in Micro-structural Pores on DPF Wall
Liyan Cui·Liyan Cui·Katsunori Hanamura·Pedro Rubio
·Teppeï Tsuruta·Preechar Karin (Tokyo Institute of Technology)
- 371 Development of PGM Reduced UCC by Radial Zone Coating
SUNGMU CHOI·JAEHOON JOUNG·TAEWOOK KIM
·SOKHYUN JO·HONGJIP KIM (HYUNDAI MOTOR COMPANY)
- 372 SCR Monitoring for USA Tier2 and Europe EURO6 OBD
ChangEun Choi·ChungGong Kim·KiYoung Kim
·TaeSik Han (Hyundai Motor)
- 373 (Cancelled) Improvement opportunities due to injection system capabilities for HD- and off-road engines
Ludger Ruhkamp (FEV) Olaf Herrmann·Thomas Koerfer

[13:00~14:40]

77-08 Diesel Spray I
 Chairperson: Akinori Miura (Nissan Desel Motor)

- 374 Improvement of Combustion and Emissions in Partially Premixed Charge Compression Ignition Engine Utilizing Flashing Spray of Mixed Fuel
Jiro Senda·Yoshimitsu Wada (Doshisha University)
Noriyuki Magara·Keisuke Ueda (Doshisha University Graduate School)
Hajime Fujimoto (Doshisha University)
- 375 Mixing and Evaporation of Fuel Spray
—Flame Propagation in Spray and Premixed-like Combustion—
Masashi Katsuki (Osaka University)
Tomomi Ohnishi·Mariko Nakamura (Osaka University)
- 376 Mixing and Evaporation of Fuel Spray
—Mixing Progress Variable—
Masashi Katsuki (Osaka University)
Tomomi Onishi·Mariko Nakamura (Osaka University)
- 377 The Effect of Spray Wall Impingement Angle on Smoke Emission in a HD DI Diesel Engine
Takuya Kitasei·Junichi Yamada·Takeshi Shoji
·Shiroh Shiino (Mitsubishi Fuso Truck & Bus)

[15:00~16:15]

78-08 Diesel Spray II
 <OS> Chairperson: Naoki Yanagisawa
 (Isuzu Advanced Engineering Center)

- 378 Combustion characteristics of Group-Hole Nozzle for D.I. Diesel Engines
Kengo Nakashima
(Graduate School of Engineering University of Hiroshima)
Makoto Namba·Yuhei Matsumoto·Jian Gao
·Keiyya Nishida (University of Hiroshima)
- 379 LES of Diesel Spray Flame using Flamelet model
Tsukasa Hori·Hiroshi Tanaka·Kyosuke Irie
(Department of Mechanical engineering, Doshisha University graduate school)
Jiro Senda·Hajime Fujimoto
(Department of Mechanical engineering, Doshisha University)

- 380 (Cancelled) Quantitative Analysis of Fuel Vapor and Temperature Distribution in an Evaporative Diesel Spray by Rayleigh Imaging and KIVALES

Hiroshi Tanaka·Tsukasa Hori·Kyosuke Irie
(Department of Mechanical engineering, Doshisha University graduate school)
Jiro Senda·Hajime Fujimoto
(Department of Mechanical engineering, Doshisha University)

- 381 Instantaneous Measurement of Droplet Number density in Core region of Diesel Fuel Spray by Micro-Probe L2F
Daisaku Sakaguchi·Hironobu Ueki·Masahiro Ishida
·Amida Oluwole (Nagasaki University)

511+512 (5F)

[9:30~12:10]

79-08 SI Engine Technology
 Chairperson: Yasuo Moriyoshi (Chiba University)

- 382 Challenges for future Direct Injection engines
Andreas Sehr·Oliver Lang (FEV)
- 383 Sabre: A Direct Injection 3-Cylinder Engine with Close-Spaced Direct Injection, Swirl-Enhanced Combustion and Complementary Technologies
James Turner·Dennis Coltman·Russell Curtis·Darren Blake
·Barry Holland·Richard Pearson (Lotus Engineering)
Hans Nuglisch (Siemens VDO Automotive)
- 384 The 2 / 4SIGHT Project
—Development of a Multi-Cylinder Two-Stroke / Four-Stroke Switching Gasoline Engine—
Richard Osborne·John Stokes·Daniele Ceccarini
·Neville Jackson (Ricardo UK Ltd.)
Martin Joyce·Sebastian Visser (DENSO Sales UK Ltd.)
Nicolas Miche·Stephen Begg·Morgan Heikal
(University of Brighton)
Navin Kalian·Hua Zhao·Tom Ma (Brunel University)
- 385 Effects of Intake Charge Motion Control on Combustion Phenomena with Cyclic HC and NOx Formation Characteristics in CVT Engine
Kwanhee Choi·Cha-Lee Myung·Simsoo Park (Korea University)
Kyung-Hwan Lee (Suncheon University)
- 386 Time Resolved Emissions Behavior of SI Engine under Transient Throttle Operating Conditions during Start Phase
Hyungmin Lee·Cha-Lee Myung·Simsoo Park
(Department of Mechanical Engineering, Korea University)
Seungkook Han·Wootae Kim·Hyuk Im (Hyundai-Kia Motors)
- 387 Tool Based OBD Calibration
Dennis Kortenoeven·Rob deBruijn (FEV)

[13:00~14:40]

80-08 Catalyst Technology
 Chairperson: Akihito Takami (Mazda Motor)

- 388 Hexagonal cell ceramic Substrate for lower emission and back pressure.
Tomomi Hase (DENSO)
Yoshihide Segawa (DENSO CORPORATION)
Takeru Yoshida (TOYOTA MOTOR CORPORATION)
- 389 Numerical simulation for designing a next generation automotive exhaust catalyst system
Takafumi Yamauchi·Shuichi Kubo
(Toyota Central R&D Labs., inc.)
Tomohito Mizukami·Noboru Sato·Norihiko Aono
(Cataler Corporation)
- 390 Application of catalyst supported on paper for exhaust gas purification
Takeshi Kadono·Ryo Suzuki·Hiroaki Yano·Shintaro Yagi
·Keizo Tamura·Kentaro Kan·Akihiko Tomoda (F.C.C. Co.,Ltd.)
- 391 Design of Oxide Catalysts for Exhaust Emission Control
Kenichi Uemura·Toru Nagai·Masao Kimura
(Nippon Steel Corporation)
Masayuki Kasuya·Yuichi Okazaki (Nippon Steel Materials Corporation)
Wataru Ito (Nippon Steel Corporation)

Small Auditorium (5F)

[9:30~11:35]

81-08 LPG and DME Engines

〈OS〉 Chairperson: Mitsunori Ishii
(Kanagawa Institute of Technology)

- 392 **Research and Development of the LPG Engine with Liquid Fuel Injection System Based on the Gasoline Engine**
—Evaluation of Power, Fuel Consumption and Exhaust Emissions—
Norifumi Mizushima·Susumu Sato·Yasuhiro Ogawa
·Toshiro Yamamoto
(National Traffic Safety and Environment Laboratory)
Umerujan Sawut·Buso Takigawa·Koji Kawayoko·Gensaku Konagai
(Nikki Co., Ltd.)
- 393 **Research and Development of the LPG Engine with Liquid Fuel Injection System Based on the Gasoline Engine**
—Optimization of an LPG Fuel Supply System—
Umerujan Sawut (Nikki co.,Ltd)
Shinya Yamaguchi·Masashi Iwasaki·Takeshi Fukawa·Yumi Kawahara (Nikki)
Toshiro Yamamoto·Susumu Sato·Norifumi Mizushima·Yasuhiro Ogawa
(National Traffic Safety and Environment Laboratory)
- 394 **Research and Development of the LPG Engine with Liquid Fuel Injection System Based on the Gasoline Engine**
—Durability Evaluation of Intake and Exhaust Valve, and Valve Seat—
Buso Takigawa·Koji Murakami·Shinya Yamaguchi
·Gensaku Konagai (Nikki Co., Ltd.)
Hideaki Kawata (Hitachi Powdered Metals Co., Ltd.)
- 395 **A Fundamental research on DME Hybrid Engines**
Kenichirou Ogata·Takahide Hashimoto (Ibaraki University)
- 396 **Development of a DME-Fueled Light-Duty Truck which meets the JAPAN 2009 emissions regulation**
—Results of vehicle performance test—
Tadanori Yanai·Yoshio Sato·Atsuhiko Kawamura·Hiroshi Oikawa
(National Traffic Safety and Environment Laboratory)
Shinya Nozaki·Toshifumi Noda·Teruaki Ishikawa (Bosch Corporation)

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82-08 Hydrogen Engine

〈OS〉 Chairperson: Masahiro Shioji (Kyoto University)

- 397 **A study for high-efficiency and low NOx emission potential of High pressure Direct Injection Hydrogen Engine.**
Kaname Naganuma·Akira Katohno·Touzu Honda
·Kimitaka Yamane·Yasuo Takagi (Musashi Institute of Technology)
Yuichi Sato·Atsuhiko Kawamura·Yuichi Goto
(National Traffic Safety and Environment Laboratory)
- 398 **A Development of Direct-Injected Hydrogen ICE Management System (2nd.Report)**
—A Validation of Mode Trace Simulation Tool and Application to the High Pressure Direct injection Hydrogen Engine Potential.—
Tomonori Kitauro (Musashi Institute of Technology)
Yuta Aoki·Kaname Naganuma·Kimitaka Yamane
·Yasuo Takagi (Musashi Institute of Technology)
Yoshio Sato·Atsuhiko Kawamura·Yuichi Goto
(National Traffic Safety and Environment Laboratory)
- 399 **NOx Emission from Multi-cylinder Hydrogen ICE with NSR Catalyst**
Atsuhiko KAWAMURA·Yoshio SATO·Tadanori YANAI
(Environment Research Dept., National Traffic Safety and Environment Lab.)
Kaname NAGANUMA
(ydrogen Energy Research Center, Musashi Institute of Tech.)
Kimitaka YAMANE·Yasuo TAKAGI
(Hydrogen Energy Research Center,
- 400 **A Study of Rising Thermal Efficiency Using an Argon Circulated Hydrogen Engine (2nd Report)**
Rentaro Kuroki·Shinichi Mitani·Takashi Sasajima·Daisaku Sawada
(Toyota Motor Corporation)

- 401 **Observation of Engine Knocking in a Hydrogen Spark-Ignition Engine**

Nobuyuki Kawahara·Eiji Tomita
·Masaki Yoshitomi (Okayama University)

- 402 **Controlling Combustion by Spark Ignition in Hydrogen HCCI Engine Supported by DME Supplement**
—Effect on Expanding Stable Operation Region and Improving Output Power—

Hideyuki Suzuki·Yasuo Takagi·Yoshifumi Sakashita
(Musashi Institute of Technology)

[15:30~17:35]

83-08 Gaseous Fuel and Combustion

〈OS〉 Chairperson: Masato Matsuki (Honda R&D)

- 403 **Combustion Method of Diesel Engine Fueled with Hydrogen for High Efficiency**
Takashi Imuta·Ryuichi Hata
(Department of Mechanical Engineering, Doshisha Graduate School)
Taku Tsujimura
(National Institute of Advanced Industrial Science and Technology)
Yoshiro Tokunaga (Kawasaki Heavy Industries, Ltd.)
Jiro Senda·Hajime Fujimoto (Departmen
- 404 **Characteristics of Combustion and Exhaust Emissions of Biomass Gas Engine Ignited with Diesel Fuel**
Eiji Tomita·Nobuhiko Fukatani·Nobuyuki Kawahara
·Keiji Maruyama (Okayama University)
Tetsuo Komoda (Mitsui Engineering and Shipbuilding, Co. Ltd.)
- 405 **Effects of Pressure on Laminar and Turbulent Burning Velocities of Iso-octane Premixed Flames**
Kosuke Maruyama·Takashi Nakahara·Kunihiro Kado
·Akihiro Hayakawa·Toshiaki Kitagawa (Kyushu University)
- 406 **Study on combustion control of spark-ignition combustion of natural-gas jets**
Masanori Sasaki·Hiroyuki Suganuma (Kyoto University)
Masahiro Shioji (kyoto University)
- 407 **A Performance of A Natural-Gas-Fueled Homogeneous Charge Compression Ignition Engine for Small Class Engines**
Moriyoshi Tamura (Toho Gas Co., LTD.)