

# 32nd International Engine Symposium / Session Schedule

December 7 (Tuesday)

	Room A	Room B	Room C	Room D
10:00	<b>Opening Ceremony [Room B]</b>			
10:10	1 4 6 9			
	<b>CI 1</b> Chairperson:	<b>SI 1</b> Chairperson:	<b>Lubricants/ Tribology 1</b> Chairperson:	<b>Ignition/ Combustion 1</b> Chairperson:
10:30	1 Combustion chamber shape optimization of indirect injection diesel engine  Hiroki Nakano (Mitsubishi Heavy Industries Engine & Turbocharger)	8 Effect of combustion characteristics of blended fuels on lean limit in SI engine  Taiga Hosoda (Keio Univ.)	16 Effect of DLC coating journal on improving seizure resistance of plain bearings  Takumi Iwata (Tokyo city Univ.)	24 Experimental analysis of initial flame kernel development in spark ignition process of ethanol/air mixture under turbulent condition  Takuto Yamaguchi (The Univ. of Tokyo)
10:55	2 Major Technical issues and their measures for achieving brake thermal efficiency of 55% with heavy-duty diesel engines  Noboru Uchida (New A.C.E. Institute)	9 Optimization of Fuel Injection Schedule for Cold Start of a Port Fuel Injected Spark Ignition Engine Using a Simple Model  Takumi Sekiguchi (Gunma Univ.)	17 The influence of main bearing asperity contact on combustion-induced vibration of a diesel engine.  Hitoshi Oguchi (Yamaguchi Univ.)	25 Influence of Difference in Natural Gas Fuel Composition on Autoignitive Propagation Velocity  Tsubaki Miyadai (Nihon Univ.)
11:20	3 Borderline between soot formation and soot oxidation on phi-T map  Takayuki Fuyuto (Toyota Central R&D Labs)	10 Improvement of EGR Limit by improvement flow and air fuel mixture in an DI Gasoline Engine  Ryo Kusakabe (Hitachi Astemo)	18 Effect of piston and piston ring pack specification on oil consumption and PN emission  Takumi Asada (Chiba Univ.)	26 Study on the effect of alcohol fuel addition on fundamental combustion characteristics of hydrocarbon fuels  Tomoki Kiritani (Oita Univ.)
11:45		11 Effects of swirling flow in Intake pipe on Gasoline Engine Performance  Inui Shoichiro (Kyushu Univ.)	19 Study on Dilution of Oil with Diesel Engine Fuel –Oil sampling method and properties of diluted oil–  Haruto Nakakouji (Tokyo city Univ.)	27 Experimental Study of Double Piston Engine with Various Pulsed Jets Colliding  Satoshi Saba (Waseda Univ.)
12:10	2 5 8 11			
	<b>CI 2</b> Chairperson:	<b>SI 2</b> Chairperson:	<b>Hydrogen Engine</b> Chairperson:	<b>Combustion control/ Machine Learning</b> Chairperson:
13:30	4 Experimental Study on Diesel Flame/Wall Interaction and Soot Generation in 2D Piston Cavity  Atsushi Takayama (Hiroshima Univ.)	12 On the Laminar Flame Speed Correlations to Improve Prediction Accuracy of a Phenomenological Combustion Submodel in an Ultra-Lean Spark-Ignited Engine  Ratnak Sok (Waseda University )	20 アルゴンクローズドサイクル水素エンジンの研究 (第7報 クローズド配管が吸排気および燃焼変動に与える影響)  Yuuki Tomita (Tokai Univ.)	28 Analysis on cycle-to-cycle variation of ignition delay in SI engine by machine learning  Kazuki Harada (The Univ. of Tokyo)
13:55	5 Study of Diesel Combustion Simulation by Evaporative Spray Measurement in High Temperature and High-Pressure Vessel  JunaediStefanus Julius (Teikyo Univ.)	13 Research on In-cylinder Water Injection in Super-Lean Burn Spark Ignition Engine using RCEM  Yusuke Takase (Tokyo Institute of Technology)	21 Combustion timing control supplying hydrogen in hydrogen mixed combustion engine  Atsushi Shimada (Hitachi)	29 A study on automatic adjustment of the HCCI engine controller using machine learning  Akihiro Takeshita (The Univ. of Tokyo)
14:20	6 Verification of Diesel Combustion Improvement Effect Using Orifice Offset Nozzle  Susumu Sato (Tokyo Institutel of Technology)	14 A study of emission characteristics for power generation small gasoline engine by using standard fuel of Iso-Octane and Toluene–Especially, effects of high addition alcohol isomer–  Takasumi Doi (Hosei Univ.)	22 Effect of High Compression Ratio on Improving Thermal Efficiency in Direct Injection Near-Zero Emission Hydrogen Engines  Tatsuro Kichima (Tokyo city Univ.)	30 Improving prediction accuracy of ignition model by weighting using machine learning  Toshiki Nishii (The Univ. of Tokyo)
14:45	7 Suppression of Mutual Interactions among Fuel Sprays and Improvement in Diesel Combustion with Optimization of Nozzle Hole Arrangement and Combustion Chamber Configuration  Kazuma Mori (Hokkaido Univ.)	15 Evaluation of Cycle-to-cycle Variations for Local Fuel Concentration using Large Eddy Simulation  Masahiro Matsuoka (Japan Automobile Research Institute)	23 Characteristics of In-Cylinder Pressure Oscillation by Increased Compression Ratio in Direct Injection Near-Zero Emission Hydrogen Engines  Yuuki Mogi (Tokyo city Univ.)	
15:10	Forum [Room B]			
15:30	『Technology for using hydrogen and ammonia』			
17:00				

## December 8 (Wednesday)

	Room A	Room B	Room C	Room D
9:30	<b>Keynote Speech I [Room B]</b> 『SUBARU's past and future.』 Mr. Yasuhiro Ito (SUBARU)			
10:30	12	15	7	10
	<b>Fuel spray 1</b> Chairperson:	<b>Fuel and Combustion</b> Chairperson:	<b>Lubricants/ Tribology 2</b> Chairperson:	<b>Ignition/ Combustion 2</b> Chairperson:
10:50	31	38	45	51
	Effects of Injection Rate Shaping using 3-Injector TAIZAC on Diesel Engine Performance  Ryugo Yoshiuda (Meiji Univ.)	Effects of Elevated Compression Ratios in Spark Ignition Engines Using Ammonia Fuel  Takumi Hara (Gunma Univ.)	Effect of Piston Parttern-Coating on Lubrication Conditions and Friction  Tsuneaki Ishima (Gunma Univ.)	Evaluation of Ignitability of Marine Fuel Oil by OCA Cetane Number  Tomoya Hirota (Okayama Univ.)
11:15	32	39	46	52
	Analysis of liquid phase concentration distribution in non-evaporating diesel spray with laser induced fluorescence method  Kosuke Nagamura (Doshisha Univ.)	Partial Oxidation Reforming of Surrogate Naphtha by Piston Compression of Internal Combustion Engines  Taisei Mori (Hokkaido Univ.)	The effect of sulfur in a diesel fuel on the degradation of low-SAPS lubricating oil  Hiroki Kiyoyama (The University of Shiga Prefecture)	Chemical Kinetics Study on the Effect of NO2 Addition on Low Temperature Oxidation and Ignition Delays Third Report  Sekyo Katsu (Hiroshima Univ.)
11:40	33	40		53
	Droplet Size and Velocity Measurements initiated from Multi-hole Nozzle for Direct Injection Spray Using Phase Doppler Anemometry  Takuma Komaru (Gunma Univ.)	Development of kinetic model and laminar burning velocity model for dimethyl-carbonate and combustion simulation in engine cylinder  Kenta Michifuji (Hitachi)		Combustion characteristics of methane premixture diluted by N <sub>2</sub> /CO <sub>2</sub> /O <sub>2</sub>  Shien Oh (Chiba Univ.)
12:05	3	16	17	19
	<b>CI 3</b> Chairperson:	<b>Knocking</b> Chairperson:	<b>Gas engine 1</b> Chairperson:	<b>Simulation and Modeling</b> Chairperson:
13:20	34	41	47	54
	Effects of Micro-Hole and Ultra-High Injection Pressure on Liquid Length, Lift-off Length and Soot Formation of Diesel Spray Flame  ZHAI Chang (Hiroshima Univ.)	Accurate knock detection methodology based on in-cylinder pressure spectral analysis in lean burn SI engine  Rikiya Okada (Keio Univ.)	Improvements Thermal Efficiency and Methane Slip in Natural Gas Dual-Fuel Engines with Ozone Addition  Ryuya Inagaki (Hokkaido Univ.)	LES analysis of fluid motion near wall and heat transfer for a diesel spray flame impinging on a wall  Akihide Sawada (Kyoto Univ.)
13:45	35	42	48	55
	Potential of oxymethylene dimethyl ether for a diesel engine improving emission and combustion characteristics  Hidemasa Kosaka (Toyota Central R&D Labs)	Influence of Gasoline Components on Spark Knock Suppression with Hydrogen Addition  Shin Nagasawa (Hokkaido Univ.)	Local equivalence ratio measurement at inhomogeneous field in pre-chamber natural gas engine  Kohei Miyao (Okayama Univ.)	The Process for Determination of Engine Hardware Specification Using Scatter-Band Data  Hiromitsu Matsuda (Honda)
14:10	36	43	49	56
	Improvements of thermal efficiencies and exhaust gas emissions in diesel combustion with oxygenated fuels  Kazunori Inoue (Hokkaido Univ.)	A Study of Autoignition Behavior and Knocking Characteristics by Using Optically Accessible Engine with Entire Bore Area  Tohiki Kimura (Nihon Univ.)	Effects of Nozzle Holes of a Pre-Chamber Gas Engine on Torch Flame and Combustion in Main Chamber Investigated by Visualization in a CVCC  Takuya Wakasugi (Kyushu Univ.)	Numerical analysis of natural gas jet behavior using the gas parcel method  Tomoki Fujita (Okayama Univ.)
14:35	37	44	50	57
	Structure of diesel fuel spray combustion with oxygenated fuels and the mechanism of afterburning reduction  Takao Kawabe (Hokkaido Univ.)	Investigation of the effects of non-uniformity of in-cylinder temperature and mixture concentration on autoignition and knock  Souta Nakamura (Nihon Univ.)	An effect of equivalence ratio values on Performance, Emissions and Combustion on DTSI-EFI high-speed engine fueled with Hydrogen, CNG and Gasoline  BALU JALINDAR SHINDE (Vellore Institute of Technology)	Modeling of Air Entrainment Phenomenon during Refueling  Naoki Sato (Gunma Univ.)
15:00				
15:20	<b>Keynote Speech II [Room B]</b> 『Transition and Future of Niigata Diesel (Marine Engine).』 Mr. Shinsuke Takahashi (IHI Power Systems Co.,Ltd.)			
16:20				

## December 9 (Thursday)

Room A

Room B

Room C

Room D

	<b>Keynote Speech III [Room B]</b>							
9:30	「The Co-Optimization of Fuel and Engine Technologies on a Path to Decarbonization of the Transportation Sector」 Dr. Robert Wagner (Oak Ridge National Laboratory)							
10:30	20	18	13	23				
	No.	Emission / Combustion products Chairperson:	No.	Gas engine 2 Chairperson:	No.	Fuel spray 2 Chairperson:	No.	Pre-chamber ignition combustion 1 Chairperson:
10:50	58	Saturation Mechanism for EGR Deposit  Takumi Fujino (Ibaraki Univ.)	66	PREMIER combustion of ignited diesel dual fuel gas engine—Effects of spreading speed of the auto-ignition flame area in the end-gas region—  Takeshi Ishida (Okayama Univ.)	74	Numerical Prediction of Mixture Formation Process up to Auto-Ignition of an Ethanol Spray in a Rapid Compression and Expansion Machine  Hikaru Tsunoda (Sojo Univ.)	79	Study of pre-chamber combustion characteristics using a visualization engine  Takaaki Chiba (Nihon Univ.)
11:15	59	Study on Prediction of Emitted PN from Diesel Engine  Hiroki Iwai (Teikyo Univ.)	67	PREMIER combustion of ignited diesel dual fuel gas engine—Numerical analysis of auto-ignition of natural gas in the end gas region considering compressibility—  Toshiki Togami (Okayama Univ.)	75	Formation of fuel film formed by fuel spray impingement on walls with various surface roughness  Yutaro Kasuya (Tokyo Denki Univ.)	80	Study on the pre-chamber technology application to gasoline engine combustion  Ryohei Ohno (Mazda)
11:40	60	Study for the effects of DPF on exhaust behavior of diesel nanoparticles  Kazutoshi Mori (Teikyo Univ.)	68	A Study on Combustion Improvement in Dual-Fuel Engine for Biogas Applications.  Yusuke Honda (Yanmer)	76	Analysis of liquid film formation process at low temperature by wall impingement direct injection gasoline spray  Dai Matsuda (Doshisha Univ.)	81	Study on effect of orifice diameter on turbulent jet by a visualized pre-chamber  Terutaka Ishii (Ibaraki Univ.)
12:05	61	TEM analysis of diesel flame-to-flame interaction effects on soot morphology  Kenshiro Sato (Meiji Univ.)	69	A Study on Low-Load Limit of Natural Gas/Diesel Dual Fuel Engine in Stoichiometric Operation  Takahito Niimi (Kyoto Univ.)				
12:30	21	22	14	24				
	No.	After treatment/ CO2 capture Chairperson:	No.	HCCI Chairperson:	No.	Fuel spray 3 Chairperson:	No.	Pre-chamber ignition combustion 2 Chairperson:
13:50	62	Experimental Study on Decomposition Process of Urea and Decomposition Products in High Temperature Atmosphere with Water Vapor  Satoru Ota (Gunma Univ.)	70	Study on HCCI Combustion by Internal EGR (first Report)  Masaya Terada (Osaka Sangyo Univ.)	77	Measurement of fuel injection rate of multi-hole nozzle using spray momentum flux  Takahiro Ishikawa (Kitami Institute of Technology)	82	Study of the effect of fuel property on ignition and combustion in prechamber ignition system  Riku Yamashita (Oita Univ.)
14:15	63	Effect of Water on the Purification Performance of Pd-Based Three-way Catalysts  Fumiya Hirose (Ibaraki Univ.)	71	Effects of PFJ on the injection and production behavior of OH radical in HCCI combustion  Koichi Osaki (Kyushu Univ.)	78	Fuel injection characteristics of diesel spray under low temperature conditions  Yoshihiro Ito (Kitami Institute of Technology)	83	Effect of fuel reformed gas on combustion characteristics with lean-burn operation of a prechamber gasoline engine  Kouun Seki (Chiba Univ.)
14:40	64	Construction of model for estimating rate constant of SCR reaction over hydrothermally-aged Cu-CHA catalyst  Hiroshi Matsuda (Ibaraki Univ.)	72	A Study of PCCI Combustion Control Method using Low-Pressure Impingement Spray of DISI Swirl Injectors and GTL Fuel  Hidekazu Kouda (Ryukyu Univ.)				
15:05	65	CO2 Separation and Capture System using Zeolite for Internal Combustion Engines  Tadanori Yanai (Shizuoka Institute of Science and Technology)	73	Study on Combustion Characteristics of Spark Assist Gasoline Self Ignition Combustion  Ryota Miyake (Kanazawa Institute of Technology)				
15:30	<b>Closing Ceremony</b>							
15:40								