

# 56th Annual Meeting of JSSE

## Day-1 Nov. 30, 2023 Room 1 (Medium Hall)

<b>8:20-8:30</b>	Opening Speech Executive Committee Chair, Masaki Nakagawa (Mitsubishi Chemical Corporation)
<b>8:30-10:00</b>	Session I Panel Discussions: Regulations and self-security Facilitator: Takashi Toriizuka (Nihon University)
	1 Topic Provider: Teruhito Ohtsuka (National Institute of Occupational Safety and Health, Japan), Panel: Jun Mutoh (Kashima Oil Co., Ltd., Japan Society for Safety Engineering), Satoshi Nakayama (ENEOS Materials Corporation)
<b>10:10-11:30</b>	Session II Session Chair Katsumi Katoh (Fukuoka university)
	2 Study of evaluation method for polymerization runaway of monomers with initiators Ikkei Tanabe, Manabu Okuyama, Yuto Mizuta, Motohiko Sumino (Mitsubishi Chemical Corporation)
	3 Reaction rate analysis on autoxidation of methyl acrylate Michiya Fujita, Haruyuki Yamanishi, Kenichi Tonokura (The University of Tokyo)
	4 Thermal behavior analysis of MDI self-polymerization and safety assessment of MDI purification process Toshiki Otaka (Tosoh Corporation), Yu-ichiro Izato, Atsumi Miyake (Yokohama National University)
	5 Effect of Metal Salts on Thermal Decomposition of tert-Butyl hydroperoxide Yuto Itabashi (Nihon university graduate school of Industrial technology), Satoru Yoshino, Shigeki Furukawa (Nihon university college of Industrial engineering)
<b>11:30-12:30</b>	Lunch
<b>12:30-13:30</b>	Session III Special Invited Lecture I Session Chair: Jun Muto (President of Japan Society for Safety Engineering)
	6-1 Greetings (International Exchange Activities) Prof. Jong-bae Baek (President of the Korean Society of Safety)
	6-2 Current Situations of the Serious Accidents Punishment Act 2012 in Korea Prof. Shu, Yongyoon (Department of industrial and systems engineering, Dongguk University)
<b>13:40-15:10</b>	Session IV Organized Session: Introduction of experimental examples verifying performance of workbench in construction site Organizer: Shoken Shomizu (Safety and ANSHIN Technical Research Center (SATEC), GOP Co., Ltd.)
	7 Dynamic evaluation of the usability of the workbench from the operator's point of view Shoken Shimizu (GOP Co., Ltd.), Yuka Koremura (Koremura Giken ballast Co., Ltd.), Kohei Nomura (GOP Co., Ltd.), Takeshi Osawa (Tokyo Metropolitan College of Industrial Technology), Rieko Hojo (Nagaoka University of Technology)
	8 Experiment of workbench usability from worker side Takeshi Osawa (Tokyo Metropolitan College of Industrial Technology), Yuka Koremura (Koremura Giken ballast Co., Ltd.), Kohei Nomura (GOP Co., Ltd.), Rieko Hojo (Nagaoka University of Technology), Takashi Kuroki (Tokyo Metropolitan College of Industrial Technology), Shoken Shimizu (GOP Co., Ltd.)
	9 Subjective evaluation of the usability of the workbench from the operator's point of view -Dynamic evaluation of the usability of the workbench from the operator's point of view- Yuka Koremura (Koremura Giken ballast Co., Ltd.), Rieko Hojo (Nagaoka University of Technology), Takeshi Osawa (Tokyo Metropolitan College of Industrial Technology) Kohei Nomura, Shoken Shimizu (GOP Co., Ltd.)
	9-2 A proposal for quantifying worker-specific well-being to improve occupational safety and reduce occupational accidents. Rieko Hojo (Nagaoka University of Technology), Yuka Koremura (Ballast Dept., Koremura Giken), Shoken Shomizu (Safety and ANSHIN Technical Research Center (SATEC), GOP Co., Ltd.)
<b>15:20-16:40</b>	Company Presentations Session Chair: Satoru Yoshino (Nihon University)
	Tokyo Instruments, Inc., Palmetrics Co. Ltd, KOMYO RIKAGAKU KOGYO K.K., RIKEN KEIKI Co.,Ltd., KOZO KEIKAKU ENGINEERING Inc.

# 56th Annual Meeting of JSSE

## Day-1 Nov. 30, 2023 Room 2 (408, 409)

<b>8:30-10:00</b>	—
<b>10:10-11:30</b>	Session V Session Chair: Kazunori Kuwana (Tokyo University of Science)
	10 Development Research of Ultrasonic Gas Concentration Meter -Toward High-precision Real-time Measurement and System Compactness- Aika Kurokawa, Masatake Yoshida, Yuichi Sasaki, Shohei Hashimoto, Shuichiro Funatsu, Akira Sato (Explosion Research Institute Inc.)
	11 Hydrogen combustion analysis with slit burners and investigation on fire risk reduction techniques Daisuke Sato, Satoshi Kadowaki (Department of System Safety Engineering, Nagaoka University of Technology), Tsubasa Hishida (Graduate School of Engineering, Nagaoka University of Technology), Toshiyuki Katsumi (Department of Mechanical Engineering, Nagaoka University of Technology)
	12 The effect of inert gas species on the combustion range with laser ignition Daiki Hosaka, Yuma Nakamura, Koichiro Hayashi, Tomohiko Imamura (Suwa University of Science)
	13 Experimental study of flame acceleration in hydrogen-oxygen mixtures Keita Tanaka, Akihiro Ueda, Tomoyuki Johzaki, Takuma Endo, Woogyung Kim (Hiroshima University)
<b>11:30-12:30</b>	Lunch
<b>12:30-13:30</b>	—
<b>13:40-15:00</b>	Session VI Session Chair: Yosuke Nishiwaki (National Institute of Occupational Safety and Health, Japan)
	14 Full-scale building fire experiment caused by fuel-overflow fire from the kerosene stove misfueled with gasoline, part 1. -Fire spread and fire damage assessment in building using FDS fire simulation- Hiroki Yamasaki, Hiromi Itamiya, Hironori Matsuoka, Yoshiharu Saeki, Toshikazu Ichikawa, Msakatsu Honma, Iori Matsuoka, Masaaki Kasamatsu, Katsuhiro Okamoto (National Research Institute of Police Science), Nobuyuki Kashiwagi (Forensic Science Laboratory, Hyogo Prefecture Police H.Q.), Tomoyasu Iwashita (Forensic Science Laboratory, Yamanashi Prefecture Police H.Q.), Hideyuki Fujiwara (Chiba Prefectural Police)
	15 Full-scale building fire experiment caused by fuel-overflow fire from the kerosene stove misfueled with gasoline, Part 2. -Evaluation of heated gypsum board based on chemical composition- Hiromi Itamiya, Hiroki Yamasaki, Toshikazu Ichikawa, Masakatsu Honma, Katsuhiro Okamoto, Iori Matsuoka, Masaaki Kasamatsu (National Research Institute of Police Science), Nobuyuki Kashiwagi (Forensic Science Laboratory, Hyogo Prefecture Police H.Q.), Tomoyasu Iwashita (Forensic Science Laboratory, Yamanashi Prefecture Police H.Q.), Hideyuki Fujiwara (Chiba Prefectural Police)
	16 Experimental study on the influence of the building shape on the wind response of a construction gondola Seiji Takanashi (National Institute of Occupational Safety and Health, Japan)
	17 Experimental study on properties of smoke layer propagating along longitudinal direction of an arched tunnel under natural ventilation Yasushi Oka, Yoshiki Sakurai (Yokohama National University), Hideyuki Oka (National Maritime Research Institute), Aoi Tanno (Nohmi Bosai Ltd)
<b>15:20-16:40</b>	Session VII Session Chair: Takeshi Suzuki (National Research Institute of Fire and Disaster)
	18 Effect of fire source location and longitudinal gradient on propagating smoke layer properties in rectangular-section tunnel fires with natural ventilation Yota Goto, Yoshiki Sakurai, Yasushi Oka (Yokohama National University), Hideyuki Oka (National Maritime Research Institute)
	19 Flame Propagation Behavior along Inclined PE Insulated Wire Motoharu Tanaka, Shotaro Fukushima, Tomohiko Imamura (Suwa University of Science)
	20 A Study on Smoke Control Methods Using Electric Fields -Electric Charge Properties of Smoke Particles- Hiroaki Okuno, Ken Matsuyama (Graduate School of Science and Technology, Tokyo Univ. of Sci.)
	21 Estimation of Burning Behavior of Train Seat Based on Small-Scale Material Tests Junichi Takano (Railway Technical Research Institute/Graduate School of Science and Engineering, Tokyo Univ. of Science), Ken Matsuyama (Graduate School of Science and Engineering, Tokyo Univ. of Science)

# 56th Annual Meeting of JSSE

## Day-1 Nov. 30, 2023 Room 3 (407)

<b>8:30-10:00</b>	
<b>10:10-11:30</b>	Session VIII Session Chair: Hirotsugu Minowa (Okayama Shoka University)
	22 Consideration of Voluntary Approach of Chemical Substances -Role of Chemical Substance Manager- Yukiyasu Shimada, Yoshihiko Sato, and Hiroyo Tsunoda (National Institute of Occupational Safety and Health, Japan)
	23 Survey of the Current Status of Fall Accident Databases in the Construction Industry and Proposal for an Information Record Framework Han Yang (Graduate of Systems Safety Engineering, Nagaoka University of Technology), Kun Zhang, Hiroshi Yamagata (Department of Systems Safety Engineering, Nagaoka University of Technology)
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25 Present situation and characteristics of occupational accidents based on open data Chiemi Kan, Kyoko Ham Ajima, Teruhito Otsuka (National institute of occupational safety and health)	
<b>11:30-12:30</b>	Lunch
<b>12:30-13:30</b>	—
<b>13:40-15:00</b>	—
<b>15:20-16:40</b>	Session IX Session Chair: Yukihito Shimamura (Tsukuba University of Technology)
	26 Consumer-Induced Product Accidents Analysis Using Text Mining Method Masaki Maruyama (Department of Information and Management Systems Engineering, Nagaoka University of Technology), Zhang Kun (Department of System Safety Engineering, Nagaoka University of Technology)
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	28 Effects of educational Manga on post-evacuation behaviors immediately after a major earthquake Yusuke Koshiba (Yokohama Natl. Univ.), Ryo Saito (Tohoku Univ.)
29 Consideration of complementation by image-generating AI to promote comprehension of instructional text Hirotsugu Minowa (Okayama Shoka University)	

# 56th Annual Meeting of JSSE

## Day-2 Dec. 1, 2023 Room 1 (Medium Hall)

<b>9:10-10:30</b>	Session X 座長 吉野悟(日本大)
	30 Effects of Surface Properties and Heating Rate on Ignition of Mg-Based Powder Masaaki Yashima (National Institute of Occupational Safety and Health, Japan)
	31 Study on the oxidation thermal risk of oil sludge Yeongsoo Choi, Kouya Murai (Mie Production Technology Development, Mitsubishi Chemical Corporation)
	32 Measurement of Fire Hazard of Biomass Solid Fuel Pellets Masaaki Yashima (National Institute of Occupational Safety and Health, Japan)
	33 Fire hazard of lighter fluid Katsuhiko Okamoto, Iori Matsuoka, Hironori Matsuoka, Yoshiharu Saeki, Hiroki Yamasaki, Toshikazu Ichikawa, Msakatsu Honma, Hiromi Itamiya and Masaaki Kasamatsu (National Research Institute of Police Science)
<b>10:40-12:00</b>	Session XI Session Chair: Yu-ichiro Izato (Yokohama National University)
	34 Evaluation of ignition hazard due to electrostatic charging in the removal process of penetrant testing Yuta Endo, Kwangseok Choi (National Institute of Occupational Safety and Health, Japan (JNIOSH)), Mito Takayuki (Japan Non-Destructive Inspection Inc.)
	35 Effects of changes in wind direction and speed on vapor clouds Teruhito Otsuka (National Institute of Occupational Safety and Health, Japan)
	36 Study of Evaporation Model Considering Dissolution in Water and Vapor-Liquid Equilibrium of Liquid Ammonia Arata Kimura, Hideyuki Oka (National Maritime Research Institute)
	37 Estimation of Flammable Range of Gases and Vapors Using Neural Network Katsufumi Yasui, Hiroshi Yamanaka (Mitsui Chemicals Inc.), Yu-ichiro Izato, Atsumi Miyake, (Yokohama National University)
<b>12:00-13:00</b>	Lunch
<b>13:00-14:00</b>	Session XII Special Invited Lecture II Session Chair: Ritsu Dobashi (University of Tokyo)
	38 Safety Initiatives in the Petrochemical Industrial Complex Hideki HAYASHI (Himeji City Fire Bureau)
<b>14:10-15:10</b>	Session XIII Session Chair: Takashi Uchida (Kanagawa Institute of Industrial Science and Technology)
	39 Study on safety evaluation of batteries during drone collision Yoshiyasu Saito(AIST Research Institute for Energy Conservation (iECO)), Ken Okada (National Institute of Advanced Industrial Science and Technology (AIST) Research Institute of Science for Safety and Sustainability (RISS)), Tsuyoshi Shibata (AIST Research Institute of Science for Safety and Sustainability (RISS)), Kakuya Iwata3 (AIST Industrial Cyber-Physical Systems Research Center (ICPS))
	40 Preliminary Experiments on Ignition Caused by Hitting and Cutting Lithium-Ion Batteries Masaaki Yashima (National Institute of Occupational Safety and Health, Japan)
	41 Isothermal Self-heating Test Using Greiner Oven and Influence Assessment of Gas Flow Rate Yosuke Nishiwaki (National Institute of Occupational Safety and Health, Japan)
<b>15:20-16:20</b>	Session XIV Session Chair: Yuto Mizuta (Mitsubishi Chemical Corporation)
	42 The Effect of Oxygen in Sealed-Cell Differential Scanning Calorimetry for Thermal Hazard Evaluation of Azide Compounds Yuya Orito (Process Technology Research Laboratories, Daiichi Sankyo Co., Ltd.)
	43 Study on Concentration of Decomposition Components in Thermal Behavior of Cumene Peroxide Yusaku Iwata (National Research Institute of Fire and Disaster)
	44 Effect of Particle Size on Minimum Ignition Energy of Iron Powder Rinrin Saeki, Wookyung Kim (Graduate School of Advanced Science and Engineering, Hiroshima University), Kwangseok Choi (National Institute of Occupational Safety and Health, Japan)
<b>16:20-16:30</b>	Closing Speech Academic Committee Chair Takashi Toriizuka (Nihon Univ.)

# 56th Annual Meeting of JSSE

## Day-2 Dec. 1, 2023 Room 2 (408,409)

9:10-10:30	Session XV Session Chair: Toshio MOGI (The University of Tokyo)
	45 Kerosene mist ignition experiment using simulated brush discharge generated by external electric field Yuta Endo, Kwangseok Choi (National Institute of Occupational Safety and Health, Japan (JNIOSH))
	46 Improvement and evaluation of heavy gas diffusion model based on a shallow layer model Manami Ishikawa, Yoshiki Sakurai, Yasushi Oka (Yokohama National University), Mitsufumi Asami, Hideyuki Oka (National Institute of Maritime, Port and Aviation Technology)
	47 Quenching Distance of Flowing Hydrogen/air Premixed Gas Masaki Yamakawa, Yoshiki Tabata, Tomohiko Imamura (Suwa University of Science), Jun-ichi Suematsu (Graduate School of Suwa University of Science)
	48 Dependences of the Critical Ignition Conditions of Propane/air Premixture by a Hot Wire on the Equivalence Ratio and Energizing Duration Yukito Ito, Tomohiko Imamura (Graduate School of Suwa University of Science)
10:40-12:00	Session XVI Session Chair: Masahiko Fujimoto (Japan Petrochemical Industry Association)
	49 Clarification of the relation of hazard property between GHS and Industrial Safety and Health Act for the risk estimation on the chemical risk assessment Hiroyo Tsunoda, Yoshihiko Sato, Yukiyasu Shimada (National Institute of Occupational Safety and Health, Japan)
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	51 Organizing the relationship of explosion and ignition properties by material properties and events in the risk assessment on fire and explosion hazards. - For open space work with combustible or inflammable chemicals - Yoshihiko Sato (National Institute of Occupational Safety and Health, Japan)
	52 Effect Analysis to the Environment of I-129 Generated due to the Decay of Te- 129m Discharged by the Fukushima Daiichi NPS Accident Haruo Sato (Okayama University)
12:00-13:00	Lunch
13:00-14:00	—
14:10-15:10	Session XVII Session Chair: Tomohiko Imamura (Suwa University of Science)
	53 Affect of fillings size on deflagration characteristics in a closed vessel Takaaki Mizutani (National Institute of Occupational Safety and Health, Japan Chemical Safety Research Group), Hiroyasu Saito (Shibaura Institute of Technology Department of Engineering Science and Mechanics)
	54 Study on the safety of plastic piping for transporting hydrogen/oxygen mixture Jin Hosoi, Toshio Mogi, Ritsu Dobashi (School of Engineering, The University of Tokyo)
	55 Verification of the Detectability of the Spread of Fire between Floors by a Thermal Imaging System Haruto Mochida, Yuki Tabata, Tetsuo Kida
15:20-16:20	Session XVIII Session Chair: Yasushi Oka (Yokohama National University)
	56 Analysis of shock waves generated during wall fracture in gas explosions in enclosed space Kosuke Kanamori, Toshio Mogi, Ritsu Dobashi (School of Engineering, The University of Tokyo)
	57 Propagation Behavior of Initial Flame Kernel Generated between Horizontal Parallel Plate. Jun-ichi Suematsu (Graduate School of Suwa University of Science), Tomohiko Imamura (Suwa University of Science)
	58 Study on an oscillating flame propagation in a pipe by measuring air movement Hayato Takase, Toshio Mogi, Ritsu Dobashi (School of Engineering, The University of Tokyo)

# 56th Annual Meeting of JSSE

## Day-2 Dec. 1, 2023 Room 3 (407)

<b>9:10-10:30</b>	Session XIX Session Chair: Ryoji Makino (The Research Institute of Science for Safety and Sustainability, AIST)
	59 Dyn am ic Risk Assessment for Life Cycle Management of Semiconductor Plant Equipment Masahiro Amano (Graduate School of Engineering , Information Science and Control Engineer ing , Nagaoka University of Technology), Masajiro Abe (Department of System Safety Engine ering Nagaoka University of Technology)
	60 Decision Tree Analysis on Automotive Risk Data Ayuka Shinagawa (Department of Information and Management Systems Engineering, Nagaoka University of Technology), Feng Xiaodong (Department of Information Science and Control Engineering, Nagaoka University of Technology), Kun Zhang (Department of System Safety Engineering, Nagaoka University of Technology)
	61 Grasp of flooded areas after a tsunami and heavy rainfall disaster using satellite remote sensing data and GIS ShouYi Gao and Mitsugu Saito (Graduate School of Science and Engineering, Iwate University)
	62 Safety monitoring of electrical equipment inspection using acceleration sensors. Junzou Takemura, Kikuyo Takebayashi, Manabu Ooshima (Chubu Electrical Safety Services Foundation), Yoshinobu Inoue (System Forest Inc.)
<b>10:40-12:00</b>	Session XX Session Chair: Haruki Nishi (National Research Institute of Fire and Disaster)
	63 Using Text Mining Techniques to Develop the Construction Industry Occupational Safety Instructional Materials Masaru Sato, Kun Zhang (Department of Systems and Safety Engineering, Nagaoka University of Science and Technology)
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	65 Analysis of Wheelchair Helpers Behavior while Passing through Fire Doors for Horizontal Evacuation in Elderly Care Facilities Tetsuro Nakajima, Masayuki Mizuno (Graduate School of Science and Technology, Tokyo University of Science)
66 Development of a risk management approach for accident prevention for workers with mental and developmental disabilities using qualitative data analysis Keisuke Takemoto, Hisao Saori, Mieko Kumasaki (Yokohama National University)	
<b>12:00-13:00</b>	Lunch
<b>13:00-14:00</b>	—
<b>14:10-15:10</b>	Session XXI Session Chair: Arata Kimura (National Maritime Research Institute)
	67 Charge relaxation by grounded metal objects inside a powder storage facility Mizuki Shoyama, Kwangseok Choi (National Institute of Occupational Safety and Health, Japan), Yuki Osada, Teruo Suzuki (Kasuga Denki, Inc.)
	68 Measurement of charge transfer of electrostatic discharge from flexible intermediate bulk container during powder emptying. Yuki Osada, Teruo Suzuki (Kasuga Denki, Inc.) Mizuki Shoyama, Kwangseok Choi (National Institute of Occupational Safety and Health, Japan.)
69 Evaluation of ignition risk of electrostatic hand-held spraying gun for powder by new spark ignition test apparatus Kwangseok Choi, Yuta Endo, Takaaki Mizutani (National Institute of Occupational Safety and Health, Japan), Kenzo Yanagida (Asahi Sunac Corporation)	
<b>15:20-16:20</b>	Session XXII Session Chair: Akira Tose (Niigata University)
	70 Comparison of Incident Warning Signs and Industrial Safety Competency Evaluation on Safety Culture Kenichi Uno (Japan Industrial Safety Competency Center)
	71 Attempts to improve organizational health through analysis between Safety Culture Assessment and Engagement survey. Tomoya Ishimaru, Keita Tanaka, Hiroko Fukuo (AGC Inc.)
72 Activities to prevent quality defects by introducing a "quality near miss reporting system. Motoko Ikeda, Rieko Hojo, Kengo Takahashi, Tetsuya Kimura (Graduate School of Engineering, Nagaoka University of Technology)	