External Presentations
Main Submitted Theses and Oral Presentations
April 1, 2022 - March 31, 2023

The papers posted here have been published in English - language journals and in Japanese - language journals with English titles. Conference presentations have been given at international conferences and at Japanese conferences with English titles.

Polymers

Development of soluble OLED materials for mid- to large-sized panel production
D. Fukushima (Advanced Materials Development Laboratory)
The Journal of the Institute of Image Information and Television Engineers, 56(6), 672 (2022)

Introduction of thermoplastic elastomers for functional airbag covers
T. Kanemori, K. Kida (Essential Chemicals Research Laboratory)

37th International Conference of the Polymer Processing Society (PPS - 37) (Fukuoka, Japan), April 11 - 15, 2022

Latest development of soluble OLED materials and its application to mid- to large-sized panel production
D. Fukushima (Advanced Materials Development Laboratory)
2022 International Conference on Display Technology (China, Online), July 16 - 19, 2022

Vision for polyolefin sustainability at Sumitomo Chemical
K. Seno (Essential Chemicals Research Laboratory)
Advances in Polyolefins (U.S.A.), September 18 - 21, 2022

New anti-bacterial/anti-viral thermoplastic elastomers
S. Shimomura (Essential Chemicals Research Laboratory)
Society of Plastics Engineers Detroit Section, TPO 2022 Global Automotive Engineered Polyolefins Conference (U.S.A.), October 2 - 5, 2022

Development of soluble OLED materials
D. Fukushima (Advanced Materials Development Laboratory)
Japan OLED Forum, The 35th regular meeting (Ishikawa, Japan), November 24 - 25, 2022

Inorganic and metallic materials

New technology and application development of alkoxide based high purity alumina
S. Sakamoto, S. Sakaki, A. Nakayama, H. Kishida, H. Ozaki, T. Hattori, Y. Sakatani (Energy & Functional Materials Research Laboratory)
Journal of Sol-Gel Science and Technology, 104(3), 519 (2022)

Positive temperature coefficient of the thermal conductivity above room temperature in a perovskite cobaltite
A. Doi, S. Shimano, M. Kriener*1, A. Kikkawa*1, Y. Taguchi*1, Y. Tokura*1,2 (Advanced Materials Development Laboratory, *1 RIKEN , *2 The University of Tokyo)
Science and Technology of Advanced Materials, 23(1), 858 (2022)

Surface-mount ozone water concentration sensor using boron-doped diamond electrode
K. Kurihara, S. Hotta, K. Akai*, Y. Einaga* (IT-related Chemicals Research Laboratory, *Keio University)
The 20th Annual Meeting of The Japanese Society for Functional Water (Tokyo, Japan, Online), October 1 - 2, 2022

Ozone water concentration measurement using boron doped diamond electrodes
K. Kurihara, T. Morita, K. Akai*, Y. Einaga* (IT-related Chemicals Research Laboratory, *Keio University)
The 41st Electronic Materials Symposium (Nara, Japan, Online), October 19 - 21, 2022

Control of giant negative thermal expansion in Ti_2O_3 - based polycrystalline materials
A. Doi, T. Matsunaga, S. Shimano, Y. Tokura*1,2, Y. Taguchi*1 (Advanced Materials Development Laboratory, *1 RIKEN , *2 The University of Tokyo)
Autumn Meeting of Japan Society of Powder and Powder Metallurgy (Kyoto, Japan), November 15 - 17, 2022

High quality diamond electrodes for ozone water generation
N. Nishikawa, T. Morita, K. Kurihara (IT-related Chemicals Research Laboratory)
Japan New Diamond Forum The 36th Diamond Symposium (Kanagawa, Japan, Online), November 16 - 18, 2022

Crop protection chemicals

Effects of indoor environmental factors and house structures on vaporization of active ingredient from spatial repellent devices in rural houses in Malawi
H. Kawada*1, S. Nakazawa*1, K. Ohashi, E. A. Kambewa*2, D. F. Pemba*2 (Health & Crop Sciences Research Laboratory, *1 Nagasaki University, *2 University of Malawi)
Japanese Journal of Infectious Diseases, 75(3), 288 (2022)

Natural and synthetic pyrethrins act as feeding deterrents against the black blowfly, *Phormia regina* (Meigen)
T. Kojima*1,2, S. Yamato*1,2, S. Kawamura*1,2 (*1 Health & Crop Sciences Research Laboratory, *2 Kobe University)
Insects, 13(8), 678 (2022)

Metyltetraprole activity against plant pathogens with relatively rare cytochrome *b* haplotypes for azoxystrobin resistance
Y. Matsuzaki , Y. Uda, T. Harada, F. Iwahashi (Health & Crop Sciences Research Laboratory)
Journal of General Plant Pathology, 88(5), 318 (2022)

Discovery of a novel agricultural fungicide, inpyrfluxam
S. Watanabe, Y. Matsuzaki, H. Sakaguchi (Health & Crop Sciences Research Laboratory)
Fine Chemicals, 51(5), 29 (2022)

Oxazosulfyl, a novel insecticide from the new chemical class "sulfyls"
S. Nishimura, E. Sakamoto, M. Ito, Y. Nokura (Health & Crop Sciences Research Laboratory)
Entomological Society of America 2022 Joint Annual Meeting (Canada), November 13 - 16, 2022

SDHI resistance of *Puccinia horiana* , chrysanthemum white rust
Y. Matsuzaki (Health & Crop Sciences Research Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Discovery and biological profile of pyridachlometyl
S. Kiguchi, Y. Matsuzaki, T. Harada, F. Iwahashi (Health & Crop Sciences Research Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Metabolomic analysis of *Schoenoplectus juncoides* reveals common markers of acetolactate synthase inhibition among paddy weeds
F. Iwahashi, M. Hikosaka, S. Yamato (Health & Crop Sciences Research Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Monitoring of PPO-inhibiting herbicide resistant *Amaranthus* species in the United States
Y. Jin, A. Tomita*1, H. Suda, T. Iwata, John A. Pawlak*2, Y. Sada (Health & Crop Sciences Research Laboratory, *1 AgroSolutions Division – International, *2 Valent U.S.A. LLC)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Rapidicil, a new systemic PPO-inhibiting herbicide for broad-spectrum weed control
Y. Sada, Y. Jin, M. Hikosaka, K. Ido, John A . Pawlak* (Health & Crop Sciences Research Laboratory, * Valent U.S.A. LLC)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Stacking effects and inheritance of the mutated ALS genes in SU-resistant weeds in Japanese rice paddy
K. Ohta, Y. Sada (Health & Crop Sciences Research Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

QTL mapping using microsatellite linkage reveals target-site mutations associated with high levels of resistance against three mitochondrial complex II inhibitors in *Tetranychus urticae*
N. Sugimoto, A. Takahashi*1, R. Ihara*1, Y. Itoh*1, A. Jouraku*2, M. Osakabe*1 (Health & Crop Sciences Research Laboratory, *1 Kyoto University, *2 Central Region Agricultural Research Center, National Agriculture and Food Research Organization)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

The biological activity of a novel pyrethroid insecticide momfluorothrin
Y. Tanaka, M. Yamada*, J. Oshita, T. Mori (Health & Crop Sciences Research Laboratory, * Planning & Coordination Office, Health & Crop Sciences Sector)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Semiconductor materials

Admittance frequency dispersion in lateral AlGaN/GaN Schottky barrier diodes: other origins of two Gp/ω peaks
N. Fukuhara, F. Horikiri, T. Yamamoto, T. Osada, K. Kasahara, T. Inoue, and T. Egawa* (Ibaraki Works, * Nagoya Institute of Technology)
J. Appl. Phys. 133, 085702 (2023)

Digitally driven maskless lithography optimized for fine pitch RDL and next generation devices
B. M. Lednicka*, T. Uhrmann*, B. Považay*, R. Holly*, F. Bögelsack*, T. Zenger*, B. Thallner*, J. Nakanishi, T. Nishimura (IT-related Chemicals Research Laboratory, * EV Group)
Novel Patterning Technologies 2022 (U.S.A., Online), April 24 - 28, 2022

Instantly measurable ozone water concentration sensor using boron doped diamond
K. Kurihara*1, H. Tamura, K. Akai*2, Y. Einaga*2 (Industrial Technology & Research Laboratory, *1 IT-related Chemicals Research Laboratory, *2 Keio University)
Japan New Diamond Forum The 36th Diamond Symposium (Kanagawa, Japan), January 16 - 18, 2022

Recent progress of HVPE-based GaN-growth technology
H. Fujikura, T. Konno, T. Kimura, S. Kaneki, T. Kimura, T. Fujimoto, T. Yoshida* (Ibaraki Works, * Taiyo Nippon Sanso Corporation)
The 23rd Seminar of Advanced Power Semiconductor Subcommittee, The Japan Society of Applied Physics (Aichi, Japan), November 18, 2022

High-quality GaN on GaN wafers by HVPE
H. Fujikura, T. Konno, T. Kimura, S. Kaneki (Ibaraki Works)
The 178th Seminar of 145th Comittie, Japan Society of Promotion of Science (Tokyo, Japan, Online), January 18, 2023

Two-dimensional characterization of electric field on Ni/n-GaN Schottky contacts under applied voltage by scanning internal photoemission microscopy
H. Imabayashi*1, F. Horikiri, Y. Narita, N. Fukuhara, T. Mishima*2 and K. Shiojima*1 (Ibaraki Works, *1 University of Fukui, *2 Hosei University)
JSMS Committee on Semiconductor Electronics, 3rd meeting (Online), January 21,2023

GaN home-epitaxial growth technology by quartz-free HVPE/Photoelectrochemical etching of GaN
F. Horikiri, N. Fukuhara, Y. Narita, O. Ichikawa, R. Isono, T. Tanaka, T. Konno, T. Kimura, S. Kaneki, T. Kimura, T. Fujimoto, H. Fujikura (Ibaraki Works)
JSAP R025 Committee on Advanced Thin Film Interface Function Creation, 13th Committee/12th Study Group (Online), February 27

Record maximum low-temperature mobility of bulk GaN: 14300 cm^2/Vs
S. Kaneki, T. Konno, T. Kimura, K. Kanegae*1, J. Suda*2, H. Fujikura (Ibaraki Works, *1 Kyoto University, *2 Nagoya University)
The 70th JSAP spring meeting (Tokyo, Japan, Online), March 15 - 18, 2023

Effects of PEC etching for fermi-level pinning in AlGaN/GaN HEMTs
R. Ochi*, T. Togashi*, Y. Osawa*, F. Horikiri, N. Fukuhara, M. Akazawa*, T. Sato* (Ibaraki Works, * Hokkaido University)
The70th JSAP Spring Meeting 2023 (Tokyo, Japan, Online), March 15 - 18, 2023

Medical and pharmaceutical materials

Process development for high quality long RNA oligo - Sumitomo's approach
I. Oshiro (Health & Crop Sciences Research Laboratory)
TIDES 2022: Oligonucleotide and Peptide Therapeutics (U.S.A.), May 9 - 12, 2022

Superior RP-HPLC analysis for high-purity long RNA oligo
H. Kawai, M. Shibata, Y. Fujii, H. Ueda (Health & Crop Sciences Research Laboratory)
TIDES 2022: Oligonucleotide and Peptide Therapeutics (U.S.A.), May 9 - 12, 2022

Energy materials

Electrochemical properties of amorphous and nanocrystalline composite cathode active material synthesized by mechanochemical method
T. Yamabayashi, S. Kuze*, N. Inui* , T. Abe*, H. Kageyama* (Energy & Functional Materials Research Laboratory, * Kyoto University)
The 63rd Battery Symposium in Japan (Fukuoka, Japan), November 8 - 10, 2022

Research and development of safe and soft solid-type battery
K. Nakamoto*1, R. N. Nasara*1, S. Kuze*1, N. Inui*1, T. Kondo, T. Nokami*2, Y. Sakaguchi*2, K. Matsumoto*1, M. Ouchi*1, H. Kageyama*1, T. Abe* (Energy & Functional Materials Research Laboratory, *1 Kyoto University, *2 Tottori University)
The 63rd Battery Symposium in Japan (Fukuoka, Japan), November 8 - 10, 2022

Improvement of interfacial performance of $Li_{6.6}La_3Zr_{1.6}Ta_{0.4}O_{12}$ with ionic plastic crystal
T. Takami*, J. Hwang*, K. Matsumoto*, R. Hagiwara*, H. Nakajima, N. Inui* (Energy & Functional Materials Research Laboratory, * Kyoto University)
The 63rd Battery Symposium in Japan (Fukuoka, Japan), November 8 - 10, 2022

Synthesis and electrochemical property of symmetric and assymmetric dicationic ionic liquids equipped with an ether linker
K. Kamada*1, H. Nakajima, S. Shimano*2, N. Inui*2, T. Abe*2, T. Nokami*1 (Energy & Functional Materials Research Laboratory, *1 Tottori University, *2 Kyoto University)
Center for Research on GSC, Tottori Univ., 10th Anniversary Symposium (Tottori, Japan), December 5, 2022

Catalysts

Sumitomo HCl oxidation technology: An innovative breakthrough for optimizing the entire chlorine value chain
Y. Yamasina, K. Morishita (Industrial Chemicals Division)
6th Annual Global Chlor-alkali, Vinyls and Polyurethanes (Germany), September 12 - 16, 2022

Sumitomo HCl oxidation technology: A significant step towards net-zero for chlorine value chain
I. Akpan (Planning & Coordination Office, Essential Chemicals & Plastics Sector)
T.EN Badger Technology Conference 2022 (Spain), September 21, 2022

Analysis of chemical and physical properties

Preface
M. Kusumoto (Bioscience Research Laboratory)
Journal of the Mass Spectrometry Society of Japan, 70(2), 96 (2022)

Comparative analysis of functional molecules in garlic by liquid chromatography/mass spectrometry
Y. Komori, T. Yoneyama, M. Kusumoto, M. Mori*, M. Yamamoto*, M. Takaichi*, M. Aoki, K. Mikata (Bioscience Research Laboratory, * Sumika Technoservice Corporation)
Journal of the Mass Spectrometry Society of Japan, 70(2), 97 (2022)

Computer simulation

Discuss efforts against sustainable productivity by using computational fluid dynamics -a case of Japanese chemical company-
N. Shimada (Production & Safety Fundamental Technology Center)
Kagakukougaku, 87(3), 144 (2023)

Real time optimization of series of fixed bed catalytic reactors
N. Suruvu, K. Ijichi* (Production & Safety Fundamental Technology Center, * Industrial Technology & Research Laboratory)
14th International Symposium on Process Systems Engineering (Kyoto, Japan), June 19 - 23, 2022

Improvement of simple CLSVOF method in the full eulerian framework
N. Shimada, Y. Uchihashi, Y. Yaegashi, M. Matuo, M. Ohta* (Production & Safety Fundamental Technology Center, * Tokushima University)
4th International Symposium on Multiscale Multiphase Process (Germany), September 25 - 28, 2022

An advanced fugacity model by incorporating fluid dynamics to predict indoor behavior of an insecticide for aerosol spray
S. Tanaka*1,3, Y. Matoba*1, H. Kondo*2, T. Ihara*3 (*1 Environmental Health Science Laboratory, *2 National Institute of Advanced Industrial Science and Technology, *3 The University of Tokyo)
Society of Environmental Toxicology and Chemistry North America 43rd Annual Meeting (U.S.A., Online), November 13 - 17, 2022

An application of a 3D hydrodynamic ocean model to predict chemical behavior at waters off Niihama in Seto Inland Sea
M. Niwano, Y. Matoba, F. Horiguchi*, Y. Ishikawa* (Environmental Health Science Laboratory, * National Institute of Advanced Industrial Science and Technology)
ICCA - LRI and NITE Workshop (Kanagawa, Japan), June 20 - 21, 2022

Automatic detection of skeletal alterations by combining micro-CT and deep learning
S. Kawai (Bioscience Research Laboratory)
The 49th Annual Meeting of the Japanese Society of Toxicology (Hokkaido, Japan), June 30 - July 2, 2022

Development of a fugacity model incorporating computational fluid dynamics to simulate indoor behaviors of an insecticide sprayed by an aerosol canister
S. Tanaka*1,3, Y. Matoba*1, H. Kondo*2, T. Ihara*3 (*1 Environmental Health Science Laboratory, *2 National Institute of Advanced Industrial Science and Technology, *3 The University of Tokyo)
The 63rd Annual Meeting of Japan Society for Atmospheric Environment (Osaka, Japan), September 14 - 16, 2022

Application of digital twin technology to fixed bed catalytic reactor
N. Suruvu (Production & Safety Fundamental Technology Center)
56th Japan Aromatic Industry Association Conference (Fukushima, Japan), October 12 - 14, 2022

A 3D hydrodynamic ocean model simulation and its data analyses targeting waters off Niihama in Seto inland sea, Japan
M. Niwano, Y. Matoba, F. Horiguchi*, Y. Ishikawa* (Environmental Health Science Laboratory, * National Institute of Advanced Industrial Science and Technology)
Chemo-Bio Informatics Society 2022 Annual Meeting (Tokyo, Japan), October 25 - 27, 2022

Implimentation of Contact angle in S-CLSVOF method
Y. Yaegashi, Y. Uchihashi, M. Matsuo, M. Sato, H. Muramatsu, N. Shimada (Production & Safety Fundamental Technology Center)
The Society of Chemical Engineers, Japan 88th Annual Meeting (Tokyo, Japan), March 15 - 17, 2023

A study of Fluid Dynamics with Statistical Modeling
Y. Yaegashi, Y. Uchihashi, M. Matsuo, M. Sato, H. Muramatsu, N. Shimada, T. Ito (Production & Safety Fundamental Technology Center)
The Society of Chemical Engineers, Japan 88th Annual Meeting (Tokyo, Japan), March 15 - 17, 2023

Toxicological safety assessment

Evaluation of the human hazard of the liver and lung tumors in mice treated with permethrin based on mode of action

T. Yamada, B. G. Lake*1, S. M. Cohen*2 (Environmental Health Science Laboratory, *1 University of Surrey, *2 University of Nebraska Medical Center)
Critical Reviews in Toxicology, 52(1), 1 (2022)

Theoretical validation of *in chemico* skin sensitization assay "ADRA" using the products formed by nucleophilic reagents and chemicals

K. Fujimoto, T. Higaki, J. Abe, M. Fujita*1, T. Kawakami*2 (Environmental Health Science Laboratory, *1 FUJIFILM Corporation, *2 National Institute of Health Sciences)
Chemical Reseach in Toxicology, 35(11), 2107 (2022)

Permeability of the fish intestinal membrane to bulky chemicals

C. Miyata*1,2, Y. Matoba*1, M. Mukumoto*1, Y. Nakagawa*2, H. Miyagawa*2 (*1 Environmental Health Science Laboratory, *2 Kyoto University)
Journal of Pesticide Science, 47(2), 86 (2022)

Evaluation of the mode of action and human relevance of liver tumors in male mice treated with epyrifenacil

S. Fukunaga, K. Ogata, A. Eguchi, K. Matsunaga, K. Sakurai, J. Abe, S. M. Cohen*, H. Asano (Environmental Health Science Laboratory, * University of Nebraska Medical Center)
Regulatory Toxicology and Pharmacology, 136, 105268 (2022)

Feasibility study for a downsized comparative thyroid assay with measurement of brain thyroid hormones and histopathology in rats: Case study with 6-propylthiouracil & sodium phenobarbital at high dose

K. Minami*1, H. Suto*1, A. Sato*2, K. Ogata*1, T. Kosaka*2, H. Hojo*2, N. Takahashi*2, N. Tomiyama*2, T. Fukuda*3, K. Iwashita*1,4, H. Aoyama*2, T. Yamada*1 (*1 Environmental Health Science Laboratory, *2 Institute of Enviromental Toxicology, *3 Bioscience Research Laboratory, *4 Environmental Health Division)
Regulatory Toxicology and Pharmacology, 137, 105283 (2023)

Novel approach for verification of a human PBPK modeling strategy using chimeric mice in the health risk assessment of epyrifenacil

K. Hirasawa, J. Abe, H. Nagahori, S. Kitamoto (Environmental Health Science Laboratory)
Toxicology and Applied Pharmacology, 465, 116439 (2023)

Development of a short-term *in vivo* assay for thyroid hormone disrupting activity in maternal rats and their fetus/pups as prescreening for developmental neurotoxicity potential

H. Suto, H. Aoyama*, T. Yamada (Environmental Health Science Laboratory, * Institute of Enviromental Toxicology)
Japan Chemical Industry Association LRI Annual Report 2021, 24 (2022)

Prediction of the bioaccumulation potential of alkylphenols using *in vitro* biotransformation rates and corrections for the fraction unbound in S9

C. Miyata, Y. Matoba, M. Mukumoto, Y. Nakagawa*, H. Miyagawa* (Environmental Health Science Laboratory, * Kyoto University)
Japanese Journal of Pesticide Science 47(2), 31 (2022)

Development of a comet assay method targeting leydig cells

R. Matsuyama, M. Fujikawa, T. Miyamoto, M. Izumi, Y. Hosokawa, H. Asano (Environmental Health Science Laboratory)
13th International Conference on Environmental Mutagens (Canada), August 27 - September 1, 2022

Suitable dispersing methods for poorly water-soluble chemicals in ready biodegradability test
Y. Takano*1,2, K. Takano*1, Y. Matoba*1, M. Mukumoto*1, O. Shirai*2 (*1 Environmental Health Science Laboratory, *2 Kyoto University)
Society of Environmental Toxicology and Chemistry North America 43rd Annual Meeting (U.S.A., Online), November 13 - 17, 2022

Development of a novel *in vitro* phototoxicity test using human pluripotent stem cells-derived retinal pigment epithelial cells for evaluation of UVB absorbers
R. Kobayashi, R. Matsuyama, S. Kitamoto, H. Asano (Environmental Health Science Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Prediction of fish bioconcentration factor from molecular and biological properties by adopting graph convolutional neural network
K. Matsushima, D. Ando, Y. Suzuki, T. Fujisawa (Environmental Health Science Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Prediction of human exposure to agrochemicals by a PBPK modeling technique using chimeric mice with humanized liver
K. Sakurai, K. Hirasawa, J. Abe (Environmental Health Science Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Effects of sodium phenobarbital in a downsized comparative thyroid assay with additional examination of brain thyroid hormone levels and brain histology
K. Minami, H. Suto, A. Sato*, K. Ogata, T. Kosaka*, H. Hojo*, N. Takahashi*, N. Tomiyama*, H. Aoyama*, T. Yamada (Environmental Health Science Laboratory, * Institute of Enviromental Toxicology)
SOT 62nd Annual Meeting and ToxExpo (U.S.A.), March 19 - 23, 2023

A proposal for the use of a modified comparative thyroid assay with reduced number of animals and additional parameters
T. Yamada, H. Aoyama* (Environmental Health Science Laboratory, * Institute of Enviromental Toxicology)
SOT 62nd Annual Meeting and ToxExpo (U.S.A.), March 19 - 23, 2023

Evaluating the human relevance of chemically induced liver tumors in rodents –Quantitative risk assessment based on the mode of action–
S. Fukunaga (Environmental Health Science Laboratory)
2022 ICCA-LRI and NITE Workshop (Kanagawa, Japan), June 20 - 21, 2022

A case study of human risk assessment of a substance using a PBPK modeling technique – Demonstrated the feasibility of approach of using chimeric mice to obtain human hepatic parameters to accurately predict the pharmacokinetics using a PBPK modeling technique
J. Abe (Environmental Health Science Laboratory)
2022 ICCA-LRI & NITE Workshop (Kanagawa, Japan), June 20 - 21, 2022

Parameter acquisition with humanized chimeric mice, for human exposure prediction using a PBPK model
K. Hirasawa, J. Abe, S. Kitamoto (Environmental Health Science Laboratory)
2022 ICCA-LRI & NITE Workshop (Kanagawa, Japan), June 20 - 21, 2022

Comparative thyroid assay: current situation of a short-term *in vivo* assay for thyroid hormone disrupting activity in maternal rats and their offspring as prescreen for potential developmental neurotoxicity
T. Yamada (Environmental Health Science Laboratory)
The 49th Annual Meeting of the Japanese Society of Toxicology (Hokkaido, Japan), June 30 - July 2, 2022

Feasibility and reliability of a downsized comparative thyroid assay for evaluating thyroid hormone disrupting activity in maternal rats and their offspring: reproducibility study with sodium phenobarbital
K. Minami, H. Suto, A. Sato*, K. Ogata, T. Kosaka*, H. Hojo*, N. Takahashi*, N. Tomiyama*, H. Aoyama*, T. Yamada (Environmental Health Science Laboratory, * Institute of Enviromental Toxicology)
The 49th Annual Meeting of the Japanese Society of Toxicology (Hokkaido, Japan), June 30 - July 2, 2022

Development of a short-term *in vivo* assay for thyroid hormone disrupting activity in maternal rats and their fetus/pups as prescreening for developmental neurotoxicity potential
T. Yamada (Environmental Health Science Laboratory)
2022 Japan Chemical Industry Association LRI Annual Meeting (Online), August 26, 2022

A method evaluating brain morphology in a screening study of low thyroid hormone-related developmental neurotoxicity
K. Ogata, K. Minami, H. Suto, H. Asano, M. Kushida, K. Maeda, A. Sato*, N. Takahashi*, H. Aoyama*, and T. Yamada (Environmental Health Science Laboratory, *Institute of Enviromental Toxicology)
The 39th Annual Meeting of the Japanese Society of Toxicologic Pathology (Tokyo, Japan), January 25 - 26, 2023

Safety engineering

Evaluation of ignitability of electrostatic discharge generated between insulators
S. Maruno, K. Sasahara, Y. Endo* (Production & Safety Fundamental Technology Center, * National Institute of Occupational Safety and Health)
55th Safety Engineering Research Annual Meeting (Tottori, Japan), February 1 - 2, 2022

Chemical plant materials engineering

Education and certification of internal welding engineer for plant owner
T. Hoshika (Production & Safety Fundamental Technology Center)
Journal of the Japan Welding Society, 92(1), 68 (2023)

Development of WES 2820 fitness-for-service assessment procedure for pressure equipment-metal loss assessment
J. Takahashi (Production & Safety Fundamental Technology Center)
The 75th IIW Annual Assembly and International Conference (Tokyo, Japan), July 17 - 22, 2022

Life science

Lack of human relevance for rat developmental toxicity of flumioxazin is revealed by comparative heme synthesis assay using embryonic erythroid cells derived from human and rat pluripotent stem cells
K. Asano, Y. Takahashi, M. Ueno*, T. Fukuda*, M. Otani, S. Kitamoto, Y. Tomigahara (Environmental Health Science Laboratory, * Bioscience Research Laboratory)
The Journal of Toxicological Sciences, 47(4), 125 (2022)

Flumioxazin, a PPO inhibitor: A weight-of-evidence consideration of its mode of action as a developmental toxicant in the rat and its relevance to humans
K. Iwashita*1, Y. Hosokawa*1, R. Ihara*1, T. Miyamoto*1, M. Otani*1, J. Abe*1, O. Mercier*2, K. Miyata*1, S. Barlow (Consultant) (*1 Environmental Health Science Laboratory, *2 Sumitomo Chemical Agro Europe S.A.S.)
Toxicology, 472, 153160 (2022)

Plant foraging strategies driven by distinct genetic modules: cross-ecosystem Transcriptomics Approach
Y. Sugimura*, A. Kawai, H. Maruyama*, T. Ezawa* (Health & Crop Sciences Research Laboratory, * Hokkaido University)
Frontiers in Plant Science, 13, 903539 (2022)

Subcutaneous transplantation of human embryonic stem cells-derived pituitary organoids
H. Sasaki*1, H. Suga*1, K. Takeuchi*1, Y. Nagata*1, H. Harada*1, T. Kondo*1, E. Ito*1, S. Maeda*1, M. Sakakibara*1, M. Souen*1, T. Miwata*1, T. Asano*1,H. Ozaki*1, S. Taga*1,2, A. Kuwahara*2, T. Nakano, H. Arima*1, R. Saito*1 (Environmental Health Science Laboratory, *1 Nagoya University, *2 Sumitomo Dainippon Pharma Co., Ltd.)
Frontiers in Endocrinology, 14, 1130465(2023)

Highly specific and efficient C-to-T and A-to-G base editing by Cas9 and TALE cooperation
T. Sakuma*, N. Nishibori*, T. Yoshima, T. Yamamoto* (Bioscience Research Laboratory, * Hiroshima University)
FASEB Science Research conference (The Genome Engineering Conference: Cutting-edge Research and Applications) (Portugal), June 26 - 30, 2022

Highly specific and efficient C-to-T and A-to-G base editing with TALE-deaminases assisted by Type I or Type II CRISPR systems
T. Sakuma*, N. Nishibori*, T. Yoshima, T. Yamamoto* (Bioscience Research Laboratory, * Hiroshima University)
Cold Spring Harbor Laboratory Genome Engineering: CRISPR Frontiers (U.S.A.), August 24 - 27, 2022

Combination of photoacoustic and fluorescence *in-vivo* imaging using bioavailable nanoparticles containing a fluorescent dye
M. Ishihara*, T. Hirasawa*, M. Miyashita*, Y. Yoshimoto, T. Sato, T. Adachi, K. Saito, Y. Tsubata (Advanced Materials Development Laboratory, * National Defense Medical College)
Photonics west bios 2023 (U.S.A.), January 27 - February 1, 2023

Highly specific and efficient C-to-T and A-to-G base editing by Cas9 and TALE cooperation
T. Sakuma*, N. Nishibori*, T. Yoshima, T. Yamamoto* (Bioscience Research Laboratory, * Hiroshima University)
7th Annual Meeting of The Japanese Society for Genome Editing (Online), June 6 - 8, 2022

Maturation method for anterior pituitary cells differentiated from human pluripotent stem cells
H. Suga*1, S. Taga*1,2, T. Nakano, A. Kuwahara*2, R. Matsumoto*3, M. Kanou*4, T. Miwata*1, H. Arima*1 (Environmental Health Science Laboratory, *1 Nagoya University, *2 Sumitomo Dainippon Pharma Co., Ltd., *3 Kyoto University, *4 St. Marianna University School of Medicine)
JSRM2023 (Kyoto, Japan), March 23 - 25, 2023

Formulation and activity certification

Practical efficacy of natural pyrethrins against mosquitoes
H. Okamoto, S. Dewa, N. Tsuda, T. Komori (Health & Crop Sciences Research Laboratory)
15th IUPAC International Congress of Crop Protection Chemistry (India), March 14 - 17, 2023

Global Environment

Sumitomo Chemical's challenge for carbon neutral society 1. -Development of carbon footprint of products (CFP) calculation system-
T. Izumi, N. Yokokawa*1, S. Manabe, M. Hayashi, M. Toma*2 (Responsible Care Dept., *1 Essential Chemicals Research Laboratory, *2 Research Planning and Coordination Dept.)
The 15th Biennial International Conference on EcoBalance 2022 (Fukuoka, Japan, Online), October 30 - November 2, 2022