

External Presentations

Main Submitted Theses and Oral Presentations

April 1, 2017 - March 31, 2018

The articles posted here have been published in English-language journals, and the presentations have been given at international conferences.

Polymers

Novel supramolecular block copolymer of isotactic polypropylene and ethylene-co-propylene connected by complementary quadruple hydrogen bonding system

S. Nojiri, S. Kimata*1, K. Ikeda, T. Senda, A. W. Bosman*2, J. W. Peeters*3, H. M. Janssen*3 (Advanced Materials Development Laboratory, *1 Petrochemicals Research Laboratory, *2 SupraPolix BV, *3 SyMO-Macromolecules, **50**, 5687(2017))

New generation TPO materials for airbag cover applications

K. Kida (Petrochemicals Research Laboratory)

SPE Automotive TPO Engineered Polyolefins Global Conference 2017 (U.S.A.), October 1 - October 4, 2017

New halogen free flame retardant TPEs (ESPOLEX HFFR-TPE)

R. Kurokawa (Petrochemicals Research Laboratory)

Elastomers World Summit 2017 (Germany), November 28 - November 29, 2017

Polymer modifier technology using ethylene-glycidyl methacrylate copolymer

H. Hori, M. Okada, S. Moritomi (Energy & Functional Materials Research Laboratory)

Compounding World Forum 2017 (U.S.A.), December 12 - December 14, 2017

Inorganic and metallic materials

Carrier density control and enhanced thermoelectric performance of Bi and Cu co-doped GeTe

S. Shimano*1,*2, Y. Tokura*2,*3, Y. Taguchi*2 (*1 Advanced Materials Development Laboratory, *2 RIKEN, *3 The University of Tokyo)

APL Materials, **5**, 056103(2017)

Speciality chemicals

Advanced technologies for polyolefin stabilization by specialty antioxidants

R. Soma (Energy & Functional Materials Research Laboratory)

Polyolefin Additives 2017 (Austria), October 9 - October 11, 2017

Crop protection chemicals

Recent findings of new synthetic pyrethroids

T. Mori (Health & Crop Sciences Research Laboratory)

Acta Horticulturae, **1169**, 47(2017)

Biological performance of Olyset® Plus, a long-lasting mosquito net incorporating a mixture of a pyrethroid and synergist

Y. Shono*1, K. Ohashi, J. R. Lucas*2 (Health & Crop Sciences Research Laboratory, *1 Environmental Health Division, *2 Sumitomo Chemical (U.K.), plc.)

Acta Horticulturae, **1169**, 77(2017)

Comparison of scytalone dehydratase activities between scytalone dehydratase inhibitor-sensitive and inhibitor-resistant *Magnaporthe oryzae* isolates

N. Kimura, H. Fujimoto* (Health & Crop Sciences Research Laboratory, * AgroSolutions Division – Japan)

Journal of Plant Diseases and Protection, **124**(6), 525(2017)

Control of mosquito larvae in catch basins using pyriproxyfen and the mechanism underlying residual

K. Ohashi (Health & Crop Sciences Research Laboratory)

Medical Entomology and Zoology, **68**(4), 127(2017)

Biology and mechanisms of sulfonyleurea resistance in *Schoenoplectiella juncooides*, a noxious sedge in the rice paddy fields of Japan

Y. Sada, A. Uchino* (Health & Crop Sciences Research Laboratory, * Central Region Agricultural Research Center, National Agriculture and Food Research Organization)
Weed Biology and Management , **17**(3), 125(2017)

Development of the novel fungicide fenpyrazamine

N. Kimura, M. Hashizume*2, T. Kusaba*3, S. Tanaka*1 (Health & Crop Sciences Research Laboratory, *1 AgroSolutions Division – International, *2 Sumitomo Chemical (U.K.), plc., *3 Sumika Technoservice
Journal of Pesticide Science , **42**(3), 137(2017)

Effect of binder composition on physicochemical properties of water dispersible granules obtained through direct granulation of agrochemical suspension using fluidized bed

K. Yanagisawa, T. Muroi, T. Ohtsubo, S. Watano* (Health & Crop Sciences Sector, * Osaka Prefecture
Journal of Pesticide Science , **42**(3), 112(2017)

Momfluorothrin : a new pyrethroid insecticide

T. Mori, Y. Tanaka*3, T. Uekawa*1, J. Oshita, M. Yamada*4, Y. Shono*2, H. Okamoto (Health & Crop Sciences Research Laboratory, *1 Intellectual Property Department, *2 Environmental Health Division, *3 SC Environmental Science Co., Ltd., *4 Sumitomo Chemical Enviro-Agro Asia Pacific Sdn. Bhd.)
Japanese Journal of Environmental Entomology and Zoology , **28**(2), 87(2017)

Small scale collaborative trial of metofluthrin

K. Miyakawa (Environmental Health Science Laboratory)
CIPAC Technical meeting (Italy), June 14, 2017

Method extension of existing CIPAC methods for metofluthrin/d,d-trans-cyphenothrin/piperonyl

M. Mukumoto (Environmental Health Science Laboratory)
CIPAC Technical meeting (Italy), June 14, 2017

A rapid assay method for detecting ACCase activities of grasses using malachite green

Y. Jin (Health & Crop Sciences Research Laboratory)
The 26th Asian-Pacific Weed Science Society Conference (Kyoto, Japan), September 19 - September 22, 2017

The dose responses of various sulfonylurea-resistant *Monochoria vaginalis* to ALS inhibitors

K. Ohta, Y. Fujino*, Y. Sada (Health & Crop Sciences Research Laboratory, * AgroSolutions Division –
The 26th Asian-Pacific Weed Science Society Conference (Kyoto, Japan), September 19 - September 22, 2017

Stacking effects of the mutated ALS genes in SU-resistant *Schoenoplectiella juncooides*

Y. Sada (Health & Crop Sciences Research Laboratory)
The 26th Asian-Pacific Weed Science Society Conference (Kyoto, Japan), September 19 - September 22, 2017

Optical materials and display materials

Latest development of high-performance OLED material suitable for printing

T. Yamada (Advanced Materials Development Laboratory)
SID Display Week (Session 57: OLED Materials III) (U.S.A.), May 23 - May 26, 2017

Organic synthesis

Novel diarylprolinol-derived amino perfluoroalkanesulfonamide catalysts: highly enantio- and diastereoselective aldol reaction

L. M. Lutete, T. Ikemoto (Health & Crop Sciences Research Laboratory)
Chemistry Letters , **46**, 577(2017)

Catalysts

C8 ring bridged *ansa* -[OSSO] catalysts: A wide variety of properties through ligand design

K. Takaoki (Petrochemicals Research Laboratory)
Advances in Polyolefins XI (APO-2017) (U.S.A.), September 24 - September 27, 2017

Antifouling Additives Technology (AFA) - A R&D answer to industrial challenges

X. Wei*, K. Sogo, S. Shaikh* (Petrochemicals Research Laboratory, * Saudi Arabian Oil Company)
The 5th Gulf Petrochemicals & Chemical Association Research & Innovation Summit (United Arab Emirates), March 11 - March 13, 2018

Analysis of chemical and physical properties

Sensitivity enhancement by chromatographic peak concentration with ultra-high performance liquid chromatography–nuclear magnetic resonance spectroscopy for minor impurity analysis

T. Tokunaga, K. Akagi*, M. Okamoto (Environmental Health Science Laboratory, * National Institute of Biomedical Innovation, Health and Nutrition)
Journal of Chromatography A , **1508**, 163(2017)

Mobility overestimation due to minority carrier injection and trapping in organic field-effect

T. Okachi (Advanced Materials Development Laboratory)
Organic Electronics , **57**, 34 (2018)

Computer simulation

Analysis of turbulent flows in complex channels using voxel cartesian grid with cut cells

S. Tanaka, N. Shimada*, Y. Matoba (Environmental Health Science Laboratory, * Production & Safety Fundamental Technology Center)
3rd International Symposium on Multiscale Multiphase Process Engineering (MMPE2017) (Toyama, Japan), May 8 - May 11, 2017

Wave Packet Dynamics Simulation of Guest-Host Emissive Materials

S. Nishino (Advanced Materials Development Laboratory)
Workshop: 'Development of next-generation quantum material research platform' (Tokyo, Japan), December 4,

Toxicological safety assessment

An evaluation of the human relevance of the lung tumors observed in female mice treated with permethrin based on mode of action

T. Yamada, M. Kondo, K. Miyata*1, K. Ogata, M. Kushida, K. Sumida, S. Kawamura, T. G. Osimitz*2, B. G. Lake*3, S. M. Cohen*4 (Environmental Health Science Laboratory, *1 AgroSolutions Division – International, *2 Science Strategies, LLC, *3 University of Surrey, *4 University of Nebraska)
Toxicological Sciences , **157**(2), 465(2017)

Mode of action analysis for rat hepatocellular tumors produced by the synthetic pyrethroid momfluorothrin: evidence for activation of the constitutive androstane receptor and mitogenicity in
Y. Okuda*1, *2, M. Kushida*1 , K. Sumida*1, H. Nagahori*1, Y. Nakamura*2, H. Higuchi*1, S. Kawamura*1, B. G. Lake*3, S. M. Cohen*4, T. Yamada*1 (*1 Environmental Health Science Laboratory, *2 Okayama University, *3 University of Surrey , *4 University of Nebraska)
Toxicological Sciences , **158**(2), 412(2017)

Evaluation of the human relevance of the constitutive androstane receptor-mediated mode of action for rat hepatocellular tumor formation by the synthetic pyrethroid momfluorothrin

Y. Okuda*1,*2, M. Kushida*1, H. Kikumoto*1, Y. Nakamura*2, H. Higuchi*1, S. Kawamura*1, S. M. Cohen*3, B. G. Lake*4, T. Yamada*1 (*1 Environmental Health Science Laboratory, *2 Okayama University, *3 University of Nebraska, *4 University of Surrey)
The Journal of Toxicological Sciences , **42**(6), 773(2017)

Behavior of cyphenothrin in aquatic environment

Y. Suzuki, M. Yoshida, T. Sugano, A. Shibata, R. Kodaka, T. Fujisawa, T. Katagi (Environmental Health Science Laboratory)
Journal of Pesticide Science , **42**(2), 17(2017)

Fate of flumioxazin in aquatic plants: two algae (*Pseudokirchneriella subcapitata* , *Synechococcus* sp.), duckweed (*Lemna* sp.), and water milfoil (*Myriophyllum elatinoides*)

D. Ando, T. Fujisawa, T. Katagi (Environmental Health Science Laboratory)
Journal of Agricultural and Food Chemistry , **65**, 8813(2017)

Metabolism of metofluthrin in rats: I. Identification of metabolites

J. Abe, H. Nagahori, H. Tarui, Y. Tomigahara, N. Isobe (Environmental Health Science Laboratory)
Xenobiotica , **48**(2), 157(2018)

Lack of genotoxic potential of permethrin in mice evaluated by the comet assay and micronucleus test

R. Matsuyama, S. Kitamoto, Y. Tomigahara (Environmental Health Science Laboratory)
Toxicological & Environmental Chemistry, **100**(1), 92(2018)

Flumioxazin metabolism in pregnant animals and cell-based protoporphyrinogen IX oxidase (PPO) inhibition assay of fetal metabolites in various animal species to elucidate the mechanism of the rat-specific developmental toxicity

J. Abe, N. Isobe, K. Mikata, H. Nagahori, Y. Naitou, H. Saji*, M. Ono*, S. Kawamura (Environmental Health Science Laboratory, * Kyoto University)
Toxicology and Applied Pharmacology, **339**, 34(2018)

Bioconcentration and metabolism of pyriproxyfen in tadpoles of African clawed frogs, *Xenopus laevis*

K. Ose, M. Miyamoto, T. Fujisawa, T. Katagi (Environmental Health Science Laboratory)
Journal of Agricultural and Food Chemistry, **65**, 9980(2017)

Identification of metabolism and excretion differences of procymidone between rats and humans using chimeric mice: Implications for differential developmental toxicity

J. Abe, Y. Tomigahara, H. Tarui, R. Oomori, S. Kawamura (Environmental Health Science Laboratory)
Journal of Agricultural and Food Chemistry, **66**, 1955(2018)

Evaluation of bioaccumulation potential of a super-hydrophobic chemical by dietary exposure bioaccumulation fish test

A. Ishihara, C. Miyata, M. Nishiyama, Y. Matoba, M. Sato (Environmental Health Science Laboratory)
SETAC North America 38th Annual Meeting (U.S.A.), November 12 - November 16, 2017

The lack of genotoxic potential of the pyrethroid insecticide permethrin evaluated by the Comet and micronucleus assays in mice

K. Sasaki, R. Matsuyama, S. Kitamoto, T. Yamada, Y. Tomigahara (Environmental Health Science Laboratory)
12th International Conference and 5th Asian Congress on Environmental Mutagens (ICEM-ACEM 2017) (Korea), November 12 - November 16, 2017

Overview of ICCA global product strategy risk assessment guidance: prioritization, ICCA GPS risk assessment guidance: hazard characterization

M. Nishiyama (Environmental Health Science Laboratory)
ICCA Joint Capacity Building: Two-day Workshop in Vietnam (Vietnam), December 7 - December 8, 2017

Constitutive androstane receptor-mediated mode-of-action for rodent liver tumorigenesis is not relevant to humans, as demonstrated by case examples of synthetic pyrethroids and natural

T. Yamada, S. M. Cohen*1, B. G. Lake*2 (Environmental Health Science Laboratory, *1 University of Nebraska, *2 University of Surrey)
SOT (Society of Toxicology) 57th Annual Meeting and ToxExpo (U.S.A.), March 11 - March 15, 2018

Safety engineering

Method for calculating and applying the time to maximum rate (TMR) of a runaway reaction

K. Murata (Production & Safety Fundamental Technology Center)
Asia Pacific Symposium on Safety 2017 (APSS 2017) (Fukuoka, Japan), November 30 - December 1, 2017

Life science

Candidate genes responsible for early key events of phenobarbital-promoted mouse hepatocellular tumorigenesis based on differentiation of regulating genes between wild type mice and humanized chimeric mice

A. Ohara, Y. Takahashi, M. Kondo, Y. Okuda, S. Takeda, M. Kushida, K. Kobayashi, K. Sumida, T. Yamada (Environmental Health Science Laboratory)
Toxicology Research, **6**(6), 795(2017)

Development of novel neural embryonic stem cell tests for high-throughput screening of embryotoxic chemicals

K. Kobayashi, N. Suzuki, K. Higashi, A. Muroi, F. L. Coz, H. Nagahori, K. Saito (Environmental Health Science Laboratory)
Toxicological Sciences, **159**(1), 238(2017)

Combining genomics to identify the pathways of post-transcriptional nongenotoxic signaling and energy homeostasis in livers of rats treated with the pregnane X receptor agonist, pregnenolone
H. Nagahori, K. Nakamura*, K. Sumida, S. Ito*, S. Ohtsuki* (Environmental Health Science Laboratory, *Kumamoto University)
Journal of Proteome Research , **16**(10), 3634(2017)

Odor detection using an insect olfactory receptor reconstructed in bilayer lipid membrane
N. Misawa*1, S. Fujii*1, K. kamiya*1, T. Osaki*1,*2, A. Ozoe, Y. Takahashi, S. Takeuchi*1,*2
(Environmental Health Science Laboratory, *1 Kanagawa Institute of Industrial Science and Technology, *2
The joint meeting of the 33rd annual meeting of the ISCE (International Society of Chemical Ecology) and the 9th meeting of the APACE (Asia-Pacific Association of Chemical Ecologists) (Kyoto, Japan), August 23 - August

Formation of droplet interface bilayers quipped with open water surface for odorant detection using olfactory receptors
N. Misawa*1, S. Fujii*1, K. kamiya*1, T. Osaki*1,*2, A. Ozoe, Y. Takahashi, S. Takeuchi*1,*2
(Environmental Health Science Laboratory, *1 Kanagawa Institute of Industrial Science and Technology, *2
The 21st International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2017) (U.S.A.), October 22 - October 26, 2017