

## External Presentations

### Main Submitted Theses and Oral Presentations

April 1, 2020 - March 31, 2021

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.

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#### Polymers

##### **Solution-processable pure green thermally activated delayed fluorescence emitter based on the multiple resonance effect**

N. Ikeda\*1, S. Oda\*1, R. Matsumoto, M. Yoshioka, D. Fukushima, K. Yoshiura\*1, N. Yasuda\*2, T. Hatakeyama\*1 (Advanced Materials Development Laboratory, \*1 Kwansai Gakuin University, \*2 Japan Synchrotron Radiation Research Institute) *Advanced Materials*, 32(40), 2004072 (2020)

##### **Latest development of soluble OLED material for printed display**

D. Fukushima (Advanced Materials Development Laboratory)

Society for Information Display (SID) Display Week International Symposium 2020 (Online), August 3 - August 7, 2020

##### **Latest development of soluble OLED material for printed display**

D. Fukushima (Advanced Materials Development Laboratory)

ICDT 2020 (International Conference on Display Technology) (China, Online), October 11 - October 14, 2020

##### **Development of new anti-stripping agent "FP"**

Y. Asai, Y. Kanazawa\*, K. Asai\* (Energy & Functional Materials Research Laboratory, \* Nissin Kasei Co., Ltd.)

Japan Society of Civil Engineers 2020 Annual Meeting (Online), September 9 - September 11, 2020

##### **A report on improvement and evaluation of asphalt stripping resistance using a new antistripping agent**

Y. Kanazawa\*, K. Asai\*, Y. Asai (Energy & Functional Materials Research Laboratory, \* Nissin Kasei Co., Ltd.)

Japan Society of Civil Engineers 2020 Annual Meeting (Online), September 9 - September 11, 2020

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#### Inorganic and metallic materials

##### **Development of current-collector-integrated aluminum negative electrode for lithium batteries : How to circumvent huge volume strain due to lithium-alloying?**

H. Li\*, T. Ichitsubo\*, T. Yamaguchi (Advanced Materials Development Laboratory, \* Tohoku University)

*Journal of Society of Automotive Engineers of Japan*, 75(1), 74 (2021)

##### **Friction stir welding of ultrahigh-purity aluminum thin sheets never to lower high conductivity at ultra-low temperature**

H. Yamamoto\*, Y. Aoyama\*, K. Ito\*, T. Yamada\*, M. Tanaka\*, H. Hoshikawa, A. Nagata, T. Kumagai (Energy & Functional Materials Research Laboratory, \* Osaka University)

*Journal of the Japan Welding Society*, 38(4), 253 (2020)

##### **Aluminum fin material for heat exchanger with high corrosion resistance**

T. Katagi\*, Y. Kubo, N. Hiragi\* (Inorganic Materials Division, \* Katagi Aluminum Products Ltd.)

*Aluminium*, 27(109), 1 (2020)

##### **High permeance inorganic support for separation membrane**

K. Sadaoka, T. Nasu (Energy & Functional Materials Research Laboratory)

9th JACI/GSC symposium (Online), June 10 - June 11, 2020

##### **Friction stir welding of ultrahigh-purity aluminum thin sheets never to lower high conductivity at ultra-low temperature**

H. Yamamoto\*, Y. Aoyama\*, K. Ito\*, T. Yamada\*, M. Tanaka\*, H. Hoshikawa, A. Nagata, T. Kumagai (Energy & Functional Materials Research Laboratory, \* Osaka University)

Japan Welding Society 2020 Autumn Meeting (Online), September 9 - September 11, 2020

##### **Friction stir welding of ultrahigh-purity aluminum thin sheets never to lower high conductivity at ultra-low temperature**

H. Yamamoto\*, Y. Aoyama\*, K. Ito\*, T. Yamada\*, M. Tanaka\*, H. Hoshikawa, A. Nagata, T. Kumagai (Energy & Functional Materials Research Laboratory, \* Osaka University)

The Japan Institute of Metals and Materials 2020 Fall Meeting (Online), September 15 - September 18, 2020

## Speciality chemicals

### Properties and applications of rubber/filler coupling agents SUMILINK® 100/200

S. Nojima, T. Nobuoka\*2, H. Aoshima, Y. Uekita\*3, O. Tokuda, S. Nakano, S. Moritomi\*4, S. Seko\*1, T. Sassa (Energy & Functional Materials Research Laboratory, \*1 Advanced Polymers Division, \*2 Sumitomo Chemical Advanced Technologies LLC., \*3 Sumika Chemtex Co., Ltd., \*4 ZS Elastomers Co., Ltd.)  
Nippon Gomu Kyokaishi, 93(6), 207 (2020)

## Crop protection chemicals

### Combating fungicide resistant crop pathogens: Discovery of metyltetraprole

Y. Matsuzaki, Y. Yoshimoto\*1, S. Arimori\*2, T. Harada, F. Iwahashi (Health & Crop Sciences Research Laboratory, \*1 Misawa Works, \*2 Planning & Coordination Office, Health & Crop Sciences Sector)  
Outlooks on Pest Management, 31(2), 74 (2020)

### Pyridachlometyl has a novel anti-tubulin mode of action which could be useful in anti-resistance management

Y. Matsuzaki, S. Watanabe, T. Harada, F. Iwahashi (Health & Crop Sciences Research Laboratory)  
Pest Management Science, 76(4), 1393 (2020)

### Microtiter plate test using liquid medium is an alternative method for monitoring metyltetraprole sensitivity in *Cercospora beticola*

Y. Matsuzaki, Y. Uda, M. Kurahashi, F. Iwahashi (Health & Crop Sciences Research Laboratory)  
Pest Management Science, 77(3), 1226 (2021)

### Amino acid substitutions responsible for different QoI and SDHI sensitivity patterns in *Puccinia horiana*, the causal agent of chrysanthemum white rust

Y. Matsuzaki, T. Harada, F. Iwahashi (Health & Crop Sciences Research Laboratory)  
Plant Pathology, 70(2), 377 (2021)

### Physiological effects of mandestrobin

K. Ido, S. Kiguchi, F. Iwahashi, S. Yamato (Health & Crop Sciences Research Laboratory)  
Journal of Pesticide Science, 45(3), 132 (2020)

### Sensitivity of *Botrytis cinerea* to fenpyrazamine in Japan and its disease control efficacy against the low-sensitive isolate

D. Hiroto, S. Tanaka\*, F. Iwahashi, N. Kimura (Health & Crop Sciences Research Laboratory, \* AgroSolutions Division – International)  
Journal of Pesticide Science, 45(4), 241 (2020)

### The influence of host plants on the insecticidal activity of a *Bacillus thuringiensis* formulation against the smaller tea tortrix, *Adoxophyes honmai* (Lepidoptera: Tortricidae), and related polyphenols in tea leaves

S. Isayama (AgroSolutions Division - Japan)  
Japanese Journal of Applied Entomology and Zoology, 65(1), 35 (2021)

### Properties of inpyrfluxam, a novel fungicide

M. Kurahashi (Health & Crop Sciences Research Laboratory)  
Plant Protection, 74(8), 51 (2020)

### Discovery of a novel insecticide, oxazosulfyl

M. Ito, E. Sakamoto, Y. Nokura (Health & Crop Sciences Research Laboratory)  
Monthly Fine Chemical (CMC Publishing Co., Ltd.), 49(5), 26 (2020)

### Stacking effects of the mutated ALS alleles in seedlings of SU-resistant *Sagittaria trifolia* L

K. Ohta, Y. Sada (Health & Crop Sciences Research Laboratory)  
The 59th Meeting of the Weed Science Society of Japan scheduled for April 10 - April 12, 2020 has been cancelled and a collection of lecture abstracts has been published.

### Discovery of a new QoI fungicide metyltetraprole-Pesticide design to avoid cross resistance

Y. Matsuzaki (Health & Crop Sciences Research Laboratory)  
The 30th Symposium of Research Committee on Fungicide Resistance, the Phytopathological Society of Japan (Online), March 23, 2021

## Semiconductor materials

### Requirements of epitaxially grown InGaAs channel layers for tunnel field-effect transistors

M. Yokoyama, T. Yamamoto, D.-H. Ahn\*, M. Takenaka\*, S. Takagi\* (IT-related Chemicals Research Laboratory, \* The University of Tokyo)  
Journal of Applied Physics, 127, 225702 (2020)

## Optical materials and display materials

### Color conversion using quantum dots for LCD, OLED and microLED displays

R. Tangirala\*, E. Lee\*, C. Hotz\*, Y. Kunai, Y. Komatsu, Y. Harada, M. Komada, M. Tokuda, T. Fukuura (IT-related Chemicals Research Laboratory, \* Nanosys Inc.)

Society for Information Display (SID) Display Week International Symposium 2020 (Online), August 3 - August 7, 2020

## Medical and pharmaceutical materials

### Development of manufacturing methods for high quality long RNA oligos

K. Kashima (Health & Crop Sciences Research Laboratory)

TIDES: Oligonucleotide and Peptide Therapeutics 2020 (Online), September 15 - September 18, 2020

## Energy materials

### Functional role of aramid separator in lithium-ion batteries

I. Arise\*1,2, Y. Miyahara\*2, K. Miyazaki\*2, T. Abe\*2 (\*1 Energy & Functional Materials Research Laboratory, \*2 Kyoto University)

The 61st Battery Symposium in Japan (Online), November 18 - November 20, 2020

## Analysis of chemical and physical properties

### Sensitive method for the identification of potential sensitizing impurities in reaction mixtures by fluorescent nitrobenzoxadiazole-labeled glutathione

T. Tokunaga, G. Yamamoto, T. Takahashi, M. Mukumoto, M. Sato, M. Okamoto (Environmental Health Science Laboratory)

Chemical Research in Toxicology, 33(12), 3001 (2020)

## Computer simulation

### A modification of cartesian cut-cell method for incompressible flows with embed boundaries

S. Tanaka, N. Shimada\* (Environmental Health Science Laboratory, \* Production & Safety Fundamental Technology Center)

Journal of Chemical Engineering of Japan, 53(12), 747 (2020)

### Application of a level-set method for deposition of fine particles on a filter

K. Sodeyama, H. Yoshino, M. Ohta\*2, N. Shimada\*1 (Industrial Technology & Research Laboratory, \*1 Production & Safety Fundamental Technology Center, \*2 Tokushima University)

Kagaku Kogaku Ronbunshu, 46(3), 49 (2020)

### Construction method of level set function from VOF function

Y. Uchihashi, Y. Yaegashi, N. Shimada (Production & Safety Fundamental Technology Center)

SCEJ 51st Autumn Meeting (Online), September 24 - September 26, 2020

## Toxicological safety assessment

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

M. Kondo, H. Kikumoto, T. G. Osimitz\*1, S. M. Cohen\*2, B. G. Lake\*3, T. Yamada (Environmental Health Science Laboratory, \*1 Science Strategies, LLC, \*2 University of Nebraska Medical Center, \*3 University of Surrey)

Toxicological Sciences, 175(1), 50 (2020)

### Comparison of the hepatic effects of phenobarbital in chimeric mice containing either rat or human hepatocytes with humanized constitutive androstane receptor and pregnane X receptor mice

T. Yamada, A. Ohara\*1, N. Ozawa\*1, K. Maeda, M. Kondo, Y. Okuda, J. Abe, S. M. Cohen\*2, B. G. Lake\*3 (Environmental Health Science Laboratory, \*1 Bioscience Research Laboratory, \*2 University of Nebraska Medical Center, \*3 University of Surrey)

Toxicological Sciences, 177(2), 362 (2020)

### Different effects of an *N*-phenylimide herbicide on heme biosynthesis between human and rat erythroid cells

S. Kawamura, M. Otani, T. Miyamoto, J. Abe, R. Ihara, K. Inawaka, A. G. Fantel\* (Environmental Health Science Laboratory, \* University of Washington)

Reproductive Toxicology, 99, 27 (2021)

### Metabolism of esfenvalerate in tomato plants (*Solanum lycopersicum*)

D. Ando, T. Fujisawa (Environmental Health Science Laboratory)

Journal of Pesticide Science, 45(3), 138 (2020)

### Study of uptake, translocation, and metabolic behavior of pesticides in water milfoil

D. Ando (Environmental Health Science Laboratory)

Journal of Pesticide Science, 45(3), 151 (2020)

## **Theoretical and organic chemical approaches to environmental behavior and metabolism of pesticides**

T. Katagi (Bioscience Research Laboratory)

Journal of Pesticide Science, 45(3), 166 (2020)

## **Comparison of biodegradation for seven chemicals between Coulometer<sup>®</sup> and OxiTop<sup>®</sup>**

S. Takekoshi, K. Takano, Y. Matoba (Environmental Health Science Laboratory)

SETAC North America 41st Annual Meeting (Online), November 15 - November 19, 2020

## **Investigation on permeability of hydrophobic substances through fish intestinal membrane**

H. Takeue, C. Miyata, Y. Matoba (Environmental Health Science Laboratory)

SETAC North America 41st Annual Meeting (Online), November 15 - November 19, 2020

## **The change of fetal thyroid hormone level caused by increased metabolism of thyroid hormone in maternal liver**

M. Shimada, S. Doi, K. Minami, T. Yamaguchi, T. Sukata (Environmental Health Science Laboratory)

The 47th Annual Meeting of the Japanese Society of Toxicology (Online), June 29 - July 1, 2020

## **Morphological comparison of rib and lumber vertebra in adult rats with compound-induced or spontaneous supernumerary rib during prenatal period**

Y. Hosokawa, K. Matuda, Y. Ikuta, M. Matsumoto, T. Yamaguchi, T. Sukata (Environmental Health Science Laboratory)

The Japanese Teratology Society 60th Annual Meeting (Online), July 11 - July 12, 2020

## **Advantage and disadvantage of X-ray micro-CT for skeletal examination of fetuses**

R. Ihara (Environmental Health Science Laboratory)

The Japanese Teratology Society 60th Annual Meeting (Online), July 11 - July 12, 2020

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## **Safety engineering**

### **The application of model-free kinetic analysis to thermal stability evaluation**

R. Itoh, S. Mori (Production & Safety Fundamental Technology Center)

Journal of Japan Society for Safety Engineering, 59(5), 322 (2020)

### **Thermal stability evaluation of solid material**

R. Itoh, S. Mori (Production & Safety Fundamental Technology Center)

53rd Safety Engineering Research Annual Meeting (Online), December 3 - December 4, 2020

### **Risk assessment of dust explosion "examples by matrix method"**

### **Disaster prevention and safety promotion system and efforts for dust explosion safety measures "Understanding actual examples of efforts"**

K. Ota (Production & Safety Fundamental Technology Center)

"Dust Explosion / Fire Safety Training [Intermediate / Technical Edition]", The Association of Powder Process Industry and Engineering, JAPAN, National Institute of Occupational Safety and Health, Japan (Online), February 25 - February 26, 2021

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## **Chemical plant materials engineering**

### **Actual application of MFR (Magnetic Flux Resistance)**

M. Tsurushima\*, T. Tada (Production & Safety Fundamental Technology Center, \* Idemitsu Kosan Co., Ltd.)

50th Petroleum-Petrochemicals Symposium of JPI (Online), November 12 - November 13, 2020

### **Some examples of degradation of polyvinyl chloride by sodium hypochlorite**

M. Nakada (Production & Safety Fundamental Technology Center)

SCEJ 86th Annual Meeting (Online), March 20 - March 22, 2021

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## **Life science**

### **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\*1,2, A. Takahashi\*2, R. Ihara\*2, Y. Itoh\*2, A. Jouraku\*3, T. Van Leeuwen\*4, M. Osakabe\*2, (\*1 Health & Crop Sciences Research Laboratory, \*2 Kyoto University, \*3 National Agriculture and Food Research Organization, \*4 Ghent University)

Insect Biochemistry and Molecular Biology, 123, 103410 (2020)

### **Carbohydrate 3'-sialyllactose as a novel target for theranostics in pancreatic ductal adenocarcinoma**

K. Higashi, K. Maeda\*1, K. Miyata\*1, S. Yoshimura\*2, K. Yamada\*3, D. Konno\*2,4, T. Tachibana\*2,5, K. Saito (Advanced Materials Development Laboratory, \*1 Environmental Health Science Laboratory, \*2 Cell Engineering Corporation, \*3 Osaka Ohtani University, \*4 Kyushu University, \*5 Osaka City University)

Tumor Biology, 42(10), 1 (2020)

**Regenerative medicine for hypothalamus and adenohipophysis**

H. Suga\*1, H. Ozaki\*1, T. Miwada\*1, N. Miyake\*1, M. Kanou\*1, S. Taga\*2, A. Kuwahara\*2, T. Kimura\*2, T. Nakano, K. Kobayashi, S. Kitamoto, H. Arima\*1 (Environmental Health Science Laboratory, \*1 Nagoya University, \*2 Sumitomo Dainippon Pharma Co., Ltd.)

The 20th Congress of the Japanese Society for Regenerative Medicine (Online), March 11 - March 13, 2021