

Final Program

*The 11th Japan / Korea International Symposium on
Resources Recycling and Materials Science*



June 17 – June 19, 2013

Kansai University, Osaka, Japan

*The 11th Japan / Korea International Symposium
on Resources Recycling and Materials Science*

Osaka, Japan
June 17 - June 19, 2013
Kansai University

Organized by

The Resources Processing Society of Japan and KIGAM

6.18 AM (Oral presentation)

9:20 Opening Address

Chairperson: Dr. Mikiya Tanaka and Prof. Heechan Cho

9:30 (Plenary T-1)

Gordon C. C. Yang: Institute of Environmental Engineering & Center for Emerging Contaminants Research, National Sun Yat-Sen University, Taiwan

Solid-liquid separation methods for engineered nanomaterials in aqueous solutions

9:55 (Plenary K-1)

Kenneth N. Han: Visting Prof. Seoul National University

Factors Affecting Hydrometallurgical Process.

10:20 (Plenary J-1)

Kohmei Halada: National Institute for Materials Science

New Stage of Resource Issue and a New Approach of Electric Appliances Recycling in Japan

10:45 (Plenary K-2)

Thenepalli Thriveni¹⁾, Chad D. Vecitis²⁾ and Jiwhan Ahn¹⁾: 1) Korea Institute of Geoscience and Mineral Resources 2) Harvard University

Future Prospects for CO₂ Mineral Sequestration in Real Mine Tailings by Accelerated Carbonation for CCUS Technologies

Chairperson: Prof. Gordon C. C. Yang and Prof. Masato Ueda

11:10 (Keynote J-1)

Chaitanya Raj Adhikari, Yumiko Sato and Mikiya Tanaka: Research Institute for Environmental Management Technology, National Institute of Advanced Industrial Science and Technology (AIST), Japan
Improved Durability of Solvent Impregnated Resin Using Acidic Organophosphorus Extractant

11:30 (Keynote K-1)

Chang-Woo Lee: Dong-A University, Korea
Study on the Turbulent Diffusion Coefficients of Contaminants in Limestone Room-and-Pillar Mines Using Tracer Gas

11:50 (Keynote J-2)

Toru H. Okabe: Institute of Industrial Science, The University of Tokyo, Japan
Current Status of Technologies for Recycling Rare Earth Metals

< Lunch 12:10 – 13:00 >

6.18 PM (Oral presentation)

Chairperson: Prof. Masakazu Niinae and Dr. Kwangsuk You

13:00 (General J-1)

Masato Ueda, Masahiko Ikeda

Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan
Synthesis of TiO₂-ZrO₂ composite film on CP-Ti by chemical-hydrothermal treatment

13:15 (General K-1)

Yun-Bun Seo, Young Ho Lee, Jae Kwon Jung, In Young Hwang : Chungnam national University.
Enhancing attachment of fibers and in-situ CaCO₃ by polymer pre-treatment

13:30 (General J-2)

Shinsuke Katagiri, Toshihiro Tanaka, Masashi Nakamoto and Takaiku Yamamoto: Graduate School of Engineering, Osaka University, Japan
Extraction of Lithium from Cathode Material in Lithium Ion Battery via Vaporization of Carbonate

13:45 (General K-2)

Kwangasuk YOU, Hyungseok Kim: Korea Institute of Geoscience and Mineral resources.
Removal of Arsenic from lead concentrate

14:00 (General J-3)

Yuki TANAKA, Katsunori OKAYA, Gjergj DODBIBA and Toyohisa FUJITA: Department of Systems Innovation, Faculty of Engineering, The University of Tokyo, Japan
Simulating the Movement of Magnetic Particles

14:15 (General K-3)

Kihong Kim, Heechan Cho, Yonggu Kim: Seoul National University
Removal Hazardous Elements from Mine

Tailings by Physical Separation

14:30 (General J-4)

Koji Yabui, Dodbiba Gjergj and Toyohisa Fujita: Department of Systems Innovation, Faculty of Engineering, The University of Tokyo, Japan
Recycling of metal contained in lamellas.

14:45 (General K-4)

Namil Um, J. W. Ahn: Korea Institute of Geoscience and Mineral resources.

< Coffee Break 15:00 – 15:15 >

Chairperson: Dr. Shigeki Koyanaka and Dr. Namil Um

15:15 (General J-5)

Hifumi Nagai, Etsuro Shibata and Takashi Nakamura: Graduate School of Environmental Studies, Tohoku University, Japan

Concentration and dissolution method of Rh and Ru from copper slime

15:30 (General K-5)

Rina Kim, Heechan Cho, Kenneth N. Han, Kihong Kim: Seoul National University

Acid leaching of REE Bearing Ore from MushgaiKhudag Area, Mongolia

15:45 (General J-6)

Hari Paudyal, Bimala Pageni, Katsutoshi Inoue, Hidetaka Kawakita, Keisuke Ohto: Department of Applied Chemistry, Faculty of Science & Engineering, Saga University, Japan

Economical adsorptive removal of trace concentration of fluoride from water using dried orange juice residue marketed as cattle food

16:00 (General J-7)

Yusuke Horayama, Gjergj Dodbiba and Toyohisa Fujita: Department of Systems Innovation, School of Engineering, The University of Tokyo
The Recovery of Phosphorus from Sewage Sludge Ash by Using Liquid-Liquid Extraction

16:15 (General K-6)

Bok Young Jae, Kim Jin Man and Choi Sun Mi : Kongju National University.

C-A-S composition based steel slag of potential compounds

Chairperson: Dr. Eishi Kusaka and Dr. Sung-young Nam

16:30 (General J-8)

Gangfeng Liu¹⁾, Ayumu Tokumaru¹⁾ and Shuji Owada²⁾

1) Department of Earth Sciences, Resources and Environmental Engineering, School of Creative Science and Engineering, Waseda University, 2) Faculty of Science and Engineering, Waseda University

Effect of Heating-Quenching Pretreatment on the Concentration of PGMs from Spent Automobile Catalyst by Selective Crushing

16:45 (General K-7)

Jinsang Cho¹, Kiyeon Moon¹, Moonkwan Choi¹, Kyehong Cho¹Jiwhan Ahn²: 1. Korea Institute of Limestone and Advanced Materials, 2. Korea Institute of Geoscience and Mineral Resources
Effect of inorganic additives on characteristics of hydraulic lime mortar

17:00 (General J-9)

Toshihide Takenaka, Asato Shimomura, Ryunosuke Morikawa and Taiki Morishige
Department of Chemistry and Materials Engineering, Kansai University, Japan
Our Recent Researches on Mg recycling

17:15 (General K-8)

Chun-sik Kim, Keon-Ho Lee , Sung-Eoi Min, Hyoung-Woo Lee: Department of Research and Development, Hanil Cement Corp, Korea
A Study on Characterization of Expansion Agent in Mortar with Light Burned Dolomite and Hard Burned Quick Lime

17:30 (General J-10)

Chiharu Tokoro¹, Daisuke Haraguchi², Sayaka Izawa² and Shuji Owada¹: 1.Faculty of Science and Engineering, Waseda University, Japan
2.Graduate School of Science and Engineering,

Waseda University, Japan

Quantitative evaluation for co-precipitation
process of As(V) removal using ferrihydrite by
surface precipitation model

< Banquet 20:00 – 22:00 >

6.18 (Poster presentation)

< Exhibition time 13:00 – 17:00,

Core time 15:00 – 16:00 >

(JP-1)

Jungshin Kang and Toru H. Okabe: Institute of Industrial Science, The University of Tokyo, Japan
Iron Removal from Titanium Ore for Titanium Dioxide Production by Selective Chlorination Using Metal Chlorides

(JP-2)

Akira Nakamura¹, Tasuma Suzuki¹, Masakazu Niinae¹, Hideki Nakata², Hiroshi Fujii², Yukio Tasaka², 1. Department of Environmental Science and Engineering, Graduate School of Science and Engineering, Yamaguchi University, Japan, 2. Technical Development Center, Cement & Construction Materials Company, Ube Industries, Ltd., Japan
Immobilization of fluoride in artificially contaminated kaolinite by the addition of commercial grade magnesium oxide

(JP-3)

Shigeki Koyanaka and Kenichiro Kobayashi: National Institute of Advanced Industrial Science and Technology (AIST), Japan
Elemental analysis of lightweight metal scraps recovered by automatic sorting technique combining a weight meter and laser 3D shape-detection system

(JP-4)

Fumiya Futami¹, Chiharu Tokoro², Shuji Owada² and Hirohisa Kubota³: 1. Graduate School of Science and Engineering, Waseda University, Japan, 2. Faculty of Science and Engineering, Waseda University, Japan Kurosaki Plant, Mitsubishi Chemical Corporation
Mechanism of As(V) removal in wastewater

treatment using ion exchange resins supported by Fe(III)

(JP-5)

Ryutaro Toi¹, Shunsuke Sudo¹, Chiharu Tokoro^{*2}, Shuji Owada² and Takahiko Okura²: 1. Graduate School of Science and Engineering, Waseda University, Japan 2. Faculty of Science and Engineering, Waseda University, Japan
Mineralization by sulfurization and slow-cooling for Molybdenum recovery from copper smelting slag

(JP-6)

Junji Miwa¹, Makoto Hirata¹, Eichi Toorisaka²: 1. Engineering graduate course Oita University, Japan, 2. Yamaguchi University, Japan
Life Cycle Assessment of CNC Machine Tools in Disposal Process

(JP-7)

Kousuke Fujita, Iori Tanabe, Masato Ueda, Masahiko Ikeda
Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan
Estimation of Electrical Resistivity of Pure Ti during Tensile Deformation

(JP-8)

Hirokazu Narita¹, Kazuko Morisaku¹, Mikiya Tanaka¹, Ryuhei Motokawa², Hideaki Shiwaku² and Tsuyoshi Yaita²

¹ National Institute of Advanced Industrial Science and Technology (AIST), Japan

² Japan Atomic Energy Agency (JAEA), Japan
Extraction and structural properties of rhodium chloride complexes with amide-containing tertiary amine

(JP-9)

Ryunosuke Morikawa, Taiki Morishige,

Toshihide Takenaka

Kansai University, Japan

The inspection of the iron removal method from the magnesium dissolution by carbon addition

(JP-10)

Ryo Kasuya, Takeshi Miki and Yutaka Tai

National Institute of Advanced Industrial Science and Technology (AIST)

Dissolution process of platinum in hydrochloric acid via lithium platinates

(JP-11)

Yoshihiro Nishisu, Naoko Akimoto and Tatsuya Oki

Research Institute for Environmental Management Technology, National Institute of Advanced Industrial Science and Technology, AIST, Japan

Separation equipment of rare earth fluorescent lamps by applying color measurement

(JP-12)

Minako Iwakuma¹, Shintaro Nakajima¹ and Yoshinari Baba²

Miyakonjojo National College of Technology¹ and University of Miyazaki², Japan

Precious metals extraction with pyridine function supported on methylacrylate-styrene copolymer.

(JP-13)

Takuya Kitatani¹, Eishi Kusaka¹, Hiromu Kusuda¹, Youqing Chen¹, Mamoru Mabuchi¹

¹ Department of Energy Science and Technology, Graduate School of Energy Science, Kyoto University, Yshida-honmachi, Sakyo-ku, Kyoto 606-8501, Japan

Floatability of Zinc-Iron(III) Coprecipitate in Microbubble Flootation

(JP-14)

Kozue Murao¹, Eishi Kusaka¹, Hiromu Kusuda¹,

Youqing Chen¹, Mamoru Mabuchi¹

¹ Department of Energy Science and Technology, Graduate School of Energy Science, Kyoto University, Yshida-honmachi, Sakyo-ku, Kyoto 606-8501, Japan

Collectorless Microbubble Flotation of Metal Sulfide Precipitates

(JP-15)

Daichi Otaki¹, Eishi Kusaka¹, Hiromu Kusuda¹, Youqing Chen¹, Mamoru Mabuchi¹

¹ Department of Energy Science and Technology, Graduate School of Energy Science, Kyoto University, Yshida-honmachi, Sakyo-ku, Kyoto 606-8501, Japan

Fundamental Study on the Production of Ultrafine Particles by Pulse-jet Drying System

(JP-16)

Noriyuki Tanaka¹, Eishi Kusaka¹, Hiromu Kusuda¹, Youqing Chen¹, and Mamoru Mabuchi¹

¹ Department of Energy Science and Technology, Graduate School of Energy Science, Kyoto University, Yshida-honmachi, Sakyo-ku, Kyoto 606-8501, Japan

Microbubble Flotation of Organics and Lactic Bacteria

(JP-17)

Akihiro Yamashita, Tatsuya Oshima and Yoshinari Baba

Department of Applied Chemistry, Faculty of Engineering, University of Miyazaki, Japan

Preparation of activated carbon with high surface area prepared from biomass wastes and of development of concentration technology of bioethanol

(JP-18)

Kai Moriyama¹, Takayuki Miyoshi¹, Norihiro Murayama¹, Junji Shibata¹ and Etsuro Udagawa²

1) Department of Chemical, Energy and Environmental Engineering, Faculty of Environmental and Urban Engineering, Kansai University, Japan 2) Research Laboratories, JFE Mineral Co., Ltd.

Study on manufacturing process of anion exchanger using steelmaking slag as a raw material

(JP-19)

Koji Yoshii, Takuya Kotani, Norihiro Murayama, Junji Shibata

Department of Chemical, Energy and Environmental Engineering, Faculty of Environmental and Urban Engineering, Kansai University, Japan

Oxidation adsorption of As(III) with γ -Al₂O₃ and MnO₂

(JP-20)

Hiroyuki Mukuda¹⁾, Satoshi Tanaka¹⁾, Norihiro Murayama¹⁾, Junji Shibata¹⁾ and Tomonori Saeki²⁾

1) Department of Chemical, Energy and Environmental Engineering, Faculty of Environmental and Urban Engineering, Kansai University, Japan 2) Yokohama Research Laboratory, Hitachi, Ltd.

Selective separation and recovery of Li and Co from under size product of roasted and crushed lithium ion battery

(KP-1)

Seong-Young Nam¹⁾, Namil Um²⁾, Jin Kim¹⁾ and J. W. Ahn²⁾: 1) Inha University, 2) Korea Institute of Geoscience and Mineral Resources

A Study on Stabilization of Heavy Metals in Mine Tailing using Accelerated Carbonation

(KP-2)

Yung-Bum Seo, Young-Ho Lee and In-Young Hwang: Chungnam National University

Use of CaCO₃ on Highly Fibrillated Cellulosic Materials for Papermaking

(KP-3)

Chulseoung Baek¹⁾, Kyehong Cho¹⁾, Jinsang Cho¹⁾, Jiwhan Ahn²⁾, Choon Han³⁾: 1) Korea Institute of Limestone and Advanced Materials, 2) Korea Institute of Geoscience and Mineral Resources, 3) Department of Chemical Engineering

Calcination of Low-Grade Limestone in a Small Rotary Kiln

(KP-4)

Dae Ju Hwang¹⁾, Young Hwan Yu¹⁾, Moon Kwan Choi¹⁾, Kye Hong Cho¹⁾, Ji Whwan Ahn²⁾, Choon Han³⁾: 1) Korea Institute of Limestone and Advanced Materials, 2) Mineral Processing Department, 3) Kwangwoon University, 4. Chungbuk National University, Chungbuk.

Preparation of Lime Paints from Slaked Lime and Slaked Light Burned Dolomite

(KP-5)

Hyun-Woo choi¹⁾, Seong-Young Nam¹⁾, Namil Um²⁾, Kwang-Suk You, Jin Kim¹⁾ and J. W. Ahn²⁾: 1) Inha University, 2) Korea Institute of Geoscience and Mineral Resources

Effect of Magnetic Separation for Stabilization of Ni and Cr in Municipal Solid Waste Incinerator Bottom Ash

(KP-6)

Jong-Hyun Sung, Joung-Soo Sun and Jin-Man Kim: Kongju National University.

A Fundamental Study on the Mortar using Fine Aggregate with Rapidly Cooled Electric Arc Furnace Oxidizing Slag

(KP-7)

Kee-Seok Kim, Jun-Hyeong Park and Hyung-Seok Kim: Korea Institute of Geoscience and Mineral Resources

Strength Properties of Mortars using Ground Granulated Blast Furnace Slag and Reforming Electric Arc Furnace Slag According to the Types of Activators

(KP-8)

Thenepalli Thriveni¹⁾, Young-Jun Ahn²⁾, Choon Han²⁾, and Ji-Whan Ahn¹⁾: 1) Korea Institute of Geoscience and Mineral Resources, 2) Kwangoon University

Factor Affecting on the Scalenohedral Calcite Crystal Growth by Carbonation Process and Applications

(KP-9)

Thenepalli Thriveni¹⁾, Young-Jun Ahn²⁾, Choon Han²⁾, and Ji-Whan Ahn¹⁾: 1) Korea Institute of Geoscience and Mineral Resources, 2) Kwangoon University

Effect of Organic Additive on the Aspect Ratio of Aragonite PCC by Carbonation Process

(KP-10)

Thenepalli Thriveni, Namil Um and Ji-Whan Ahn: Korea Institute of Geoscience and Mineral Resources

Arsenic Oxyanions Removal from Artificial Waste Waters by Accelerated Carbonation

6.19 AM (Oral presentation)

Chairperson: Dr. Jiwhan Ahn and Prof. Hiroshi Nakazawa

9:30 (Keynote J-3)

Toshihiro Tanaka, Masanori Suzuki and Hiroki Goto

Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan

Hydrothermal Capillary Metallurgy

9:50 (Keynote K-2)

Heechan cho¹, Kihong Kim¹, Jinan Jeonga¹, and Sookyung Kim². : 1. Department of Energy Resources Engineering, Seoul National University, 2. Korea Institute of Geoscience and Mineral resources.

Process evaluation of recycling of waste home appliance in Korea

10:10 (Keynote J-4)

Norihiro Murayama and Junji Shibata: Department of Chemical, Energy and Environmental Engineering, Kansai University, Japan

Synthesis of Layered Double Hydroxide using Various Industrial By-products

10:30 (Keynote K-3)

Jongmun Cha and Heon-Chan Kang: Department of Energy and Mineral Resources Engineering, Dong-A University, Korea

Removal of Heavy Metals in Metal Mine Tailing

10:50 (General J-11)

Toyohisa Fujita, Yosuke Ebisu, Gjergj Dodbiba: Department of Systems Innovation, Faculty of Engineering, The University of Tokyo, Japan

Preparation and property of stable magneto rheological suspension

Chairperson: Dr. Hwunwoo Choi and Prof. Norihiro Murayama

11:05 (General K-9)

Younghee Kim¹, Eunjin Jung¹, Yoon Joo Lee¹, Soo Ryong Kim¹, Woo Teck Kwon¹, Jun Kyu Kim² and Doo Jin Choi²: 1. Korea Institute of Ceramic Engineering and Technology, Seoul, Korea.

2. Yonsei University.

High purity -SiC powder for SiC single crystal growth

11:20 (General J-12)

Hiroshi Nakazawa¹, Kenta Odajima¹, Wataru Hareyama¹, and Teruhito Sasaki²

1) Graduate School of Engineering, Iwate University

2) Iwate Industrial Research Institute

Removal of iron, silica and aluminum from sewage sludge ashes for recovery of phosphate

11:35 (General K-10)

Namil Um¹, J. W. Ahn¹, and Tetsuji Hirato²: 1) Korea Institute of Geoscience and Mineral resources, 2) Kyoto University

Dissolution behavior of CeO₂, La₂O₃, Pr₂O₃, Nd₂O₃, CaO, and Al₂O₃ in sulfuric acid solutions and study of cerium recovery from rare earth polishing powder waste via two-stage sulfuric acid leaching

11:50 (General J-13)

Yang Geng¹, Natsuko Kuroki¹, and Shuji Owada²

1) Department of Earth, Resources and Environmental Engineering, Graduate School of Creative Science of Engineering, Waseda University, 2) Faculty of Science and Engineering, Waseda University, Japan

Effect of Bubble-bubble and Bubble-particle Behavior with Ultrasonic Irradiation on the Mirco-bubble Flotation

12:05 (General K-11)

Young-Jun Ahn¹⁾, Namil Um²⁾, Seong-Young Nam²⁾, Ji-Wan Ahn²⁾, Choon Han¹⁾ : 1) Kwangwoon University, 2) Korea Institute of Geoscience and Mineral resources

Difference in Characteristics of Recycled ONP for CaCO₃ Adding Techniques

12:20 (General J-14)

Naoya SANTO¹⁾, Shuji OWADA²⁾, Yoshitsugu MIYABAYASHI³⁾

1: Department of Earth, Resources and Environmental Engineering, Graduate School of Creative Science and Engineering, Waseda University, 2: Faculty of Science and Engineering, Waseda University, 3: JX Nippon Mining & Metals

Concentration of Cathode Material from Spent Automobile LIBs by Combining Roasting and Physical Separation Technologies

< Farwell Party 12:45 – 14:45 >

Symposium History

- (1) The Japan / Korea International Symposium on Resources Recycling and Material Science, Kansai University, Osaka, Japan, September 4-5, 2003
- (2) The 2nd Korea / Japan International Symposium on Material Sciences and Resources Recycling, Daemyungcondo, Danyang, Korea, December 20-22, 2004
- (3) The 3rd Japan / Korea International Symposium on Resources Recycling and Materials Science, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, January 12-13, 2006
- (4) The 4th Korea / Japan International Symposium on Material Sciences and Resources Recycling, LOTTE Hotel Jeju, Jeju, Korea, March 8-10, 2007
- (5) The 5th Japan / Korea International Symposium on Resources Recycling and Materials Science, Kitakyushu International Conference Center, Kitakyushu, Japan, December 20-22, 2007
- (6) The 6th Korea / Japan International Symposium on Resources Recycling and Materials Science, Research Institute of Industrial Science and Technology, Pohang, Korea, November 20-21, 2008
- (7) The 7th Japan / Korea International Symposium on Resources Recycling and Materials Science, Kyoto Garden Palace, Kyoto, Japan, December 15-18, 2009
- (8) The 8th Korea / Japan International Symposium on Resources Recycling and Materials Science, RAMADA Seoul, Seoul, Korea, June 24-25, 2010
- (9) The 9th Japan / Korea International Symposium on Resources Recycling and Materials Science, Kansai University, Osaka, Japan, May 30-June 1, 2011
- (10) The 10th Anniversary Korea / Japan International Symposium on Resources Recycling and Materials Science, Daejeon Convention Center, Daejeon, Korea, May 28-30, 2012
- (11) The 11th Japan / Korea International Symposium on Resources Recycling and Materials Science, Kansai University, Osaka, Japan, June 17-19, 2013