

E: Membrane Separation/Fluid-Solid Separation

[Poster Session 1] (Day 2 – Friday, October 31st, 13:30-15:30)

- EP-01** CO₂/N₂ Separation through Mixed Matrix Membranes Containing Mesoporous MgTiO₃ Perovskite
Harim JEON and Jong Hak KIM* (Yonsei University, Korea)
- EP-02** Tough Ion Gel Film for CO₂ separation
Eiji KAMIO, Tomoki YASUI and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-03** Improving CO₂/N₂ Gas Separation Performance Using Amphiphilic PCZ-r-PEG Copolymers
Jae Hun LEE, Rajkumar PATEL and Jong Hak KIM* (Yonsei University, Korea)
- EP-04** Facilitated CO₂ Transport Membrane Utilizing a Reactive Ionic Liquid
Hideto MATSUYAMA*, Shohei KASAHARA, Ayumi YOSHIZUMI and Eiji KAMIO (Kobe University, Japan)
- EP-05** Development of 0.2 Nm³/hr Scale Membrane Process for CCS
Jong-Ho MOON, Jung-Hyun LEE and Jeong gu YEO* (Korea Institute of Energy Research, Korea)
- EP-06** High Performance of Organosilica Membranes for CO₂ Separation under Humidified Conditions
Xiuxiu REN, Masakoto KANEZASHI, Hiroki NAGASAWA, Tomohisa YOSHIOKA and Toshinori TSURU* (Hiroshima University, Japan)
- EP-07** Enhanced CO₂ Sequestration Membranes via Surface-modified Mesoporous TiO₂ Hollow Nanospheres with Oligomer of High CO₂ Affinity
Jin Kyu KIM and Jong Hak KIM* (Yonsei University, Korea)
- EP-08** Numerical Simulation of Droplets Dynamics with Surfactants within a Pore in Oil/Water Separation
Yusuke KAGAWA, Yasushi MINO (Kobe University, Japan), Toru ISHIGAMI (Nihon University, Japan) and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-09** Enhancement of Slurry Dewatering in Basket Centrifuge Using Bypass Filter Medium
Alvin Najmuddin GINTING, Ryo FUKUYAMA, Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)
- EP-10** Comparative Study and Theoretical Modeling of Direct Contact Membrane Distillation, Air Gap Membrane Distillation and Vacuum Air Gap Membrane Distillation
Tomoki KAMIYA, Shohei OKAZAKI, Yuichiro HIROTA and Akira ITO* (Tokyo Institute of Technology, Japan)
- EP-11** Direct Numerical Simulation of Particle Dispersion Flow in a Microfiltration Membrane
Yasushi MINO, Hiromi FUSE (Kobe University, Japan), Toru ISHIGAMI (Nihon University, Japan), Yusuke KAGAWA (Kobe University, Japan), Shinichi ASAO (College of Industrial Technology, Japan) and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-12** Gas Transport Property of Crosslinked Polyimide Membranes Induced by Linear Diamines
Hye Rim LEE, Deuk Ju KIM (Gyengsang National University, Korea), Seong Yong HA (Airrane Co., Ltd., Korea) and Sang Yong NAM* (Gyengsang National University, Korea)

- EP-13** Effect of Coexisting Clay on Membrane Filtration Properties of Virus-Containing Suspension
Kazuma KOHORI*, Nobuyuki KATAGIRI and Eiji IRITANI (Nagoya University, Japan)
- EP-14** Characterization of Filter Cake Structure by Streaming Potential Measurement
Kazuho NAKAMURA* (Yokohama National University, Japan)
- EP-15** Gas Transport Properties of Polyethylene Oxide-g-Poly(Vinyl Alcohol) Mixed Matrix Membranes with Single-Walled Aluminosilicate Nanotubes
Ire PARK, Mijin CHOI and Bumsuk JUNG* (Myongji University, Korea)
- EP-16** High Gas Permselective MFI Zeolite Membranes on Porous Silica Substrates
Emi MATSUYAMA, Yuto SUGIYAMA, Kotone OURA, Ayumi IKEDA, Ryuhei ONO (Shibaura Institute of Technology, Japan), Hiromasa TAWARAYAMA, Kazuya KUWAHARA (Sumitomo Electric Industries, Ltd., Japan) and Mikihiro NOMURA* (Shibaura Institute of Technology, Japan)
- EP-17** Synthesis and Characterization of HKUST-1 Membranes by Thermal Spray Seeding and Secondary Growth
Seung-Jun NOH, Sang Hyuk IM and Jinsoo KIM* (Kyung Hee University, Korea)
- EP-18** Ionic Osmotic Pressure Analysis of Molecular Recognition Ion- Gating Membrane
Seiichi AMAMIYA, Hidenori OHASHI and Takeo YAMAGUCHI* (Tokyo Institute of Technology, Japan)
- EP-19** Direct Spraying Synthesis of ZIF-7 Membranes Using Electrostatic Deposition
Victor Manuel Aceituno MELGAR, Sang Hyuk IM and Jinsoo KIM* (Kyung Hee University, Korea)
- EP-20** Impact of Support Layer Structure on Forward Osmosis Membrane Performance
Shoji MISHIMA, Masahiro YASUKAWA, Masafumi SHIBUYA, Tomoki TAKAHASHI, Taro MIYOSHI (Kobe University, Japan), Mitsuru HIGA (Kobe University, Yamaguchi University, Japan) and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-21** Silica-Zirconia Membranes for Nanofiltration of Aqueous Solutions
Waravut PUTHAI, Masakoto KANEZASHI and Toshinori TSURU* (Hiroshima University, Japan)
- EP-22** Preparation of Positive Thermosensitive Polymer Membrane and Its Water Permeation Behavior
Kazumitsu NAOE*, Akira SAITO, Ritsuo MATOBA (Nara National College of Technology, Japan) and Masanao IMAI (Nihon University, Japan)
- EP-23** Effect of Operating Condition and Membrane Structure for Pressure Assisted Osmosis Process
Masafumi SHIBUYA, Masahiro YASUKAWA (Kobe University, Japan), Mitsuru HIGA (Kobe University, Yamaguchi University, Japan) and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-24** Preparation of 1,3,5-Triazine Derivatives as a New Organo-Silica Membrane for Gas and Reverse Osmosis: Effect of Coating and Firing Temperatures
Suhaina M. IBRAHIM (Hiroshima University, Japan, Advanced Material Research Centre (AMREC), Malaysia), Hiroki NAGASAWA (Hiroshima University, Japan), Akinobu NAKA (Kurashiki University of Science and the Arts), Joji OHSHITA, Tomohisa YOSHIOKA, Masakoto KANEZASHI and Toshinori TSURU* (Hiroshima University, Japan)
- EP-25** Expression of Highly Compressible Materials
Ryo FUKUYAMA, Takanori TANAKA* (Osaka Prefecture University, Japan), Nobuyasu YABUTA (YABUTA Industries Co., Ltd, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)
- EP-26** Modification of Ceramic Membrane with Hierarchically Mesoporous Silica Sublayer using Anionic Polyelectrolyte
T. KANG, S. OH (Seoul National University, Korea), H. KIM (Korea Institute of Science and Technology, Korea) and Jongheop YI (Seoul National University, Korea)*

EP-27 Aqueous Synthesis of Zeolitic Imidazolate Framework-8 Membranes on Reactive Surface
Tomoko SHIMADA, Kosuke FUJITA (Kansai University, Japan), Yoshikazu MIYAKE (Kansai University, Organization for Research and Development of Innovative Science and Technology (ORDIST), Japan), Koji KIDA, Katsunori YOGO (Research Institute of Innovative Technology for the Earth (RITE), Japan), Miki SUGITA, Takahiko TAKEWAKI (Mitsubishi Chemical Corporation, Japan), Joeri F. M. DENAYER (Vrije Universiteit Brussel, Belgium) and Shunsuke TANAKA* (Kansai University, Organization for Research and Development of Innovative Science and Technology (ORDIST), Japan)

[Poster Session 2] (Day 2 – Friday, October 31st, 15:50-17:30)

EP-28 Water Permeation Mechanism through MOR Zeolite Membranes
Emi MATSUYAMA, Ryuhei ONO, Motoki KITAJIMA, Ayumi IKEDA and Mikihiro NOMURA* (Shibaura Institute of Technology, Japan)

EP-29 Separation Behaviour of Similaly Sized Proteins through Functionalized Polysulfone Membranes
Guk Won LEE, Deuk Ju KIM and Sang Yong NAM* (Gyeongsang National University, Korea)

EP-30 Effects of Microbubbles in Precoat Filtration
Hikaru UBUKATA (Osaka Prefecture University, Japan), Koichi YAGISHITA, Tominori KITAGAWA (Sanshin Mfg. Co., Ltd., Japan), Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)

EP-31 Molecular Modeling of Proton and Methanol Transport of Spaes Blend Membranes
Deuk Ju KIM (Gyeongsang National University, Korea), Chi Hoon PARK (Gyeongnam National University of Science and Technology, Korea) and Sang Yong NAM* (Gyeongsang National University, Korea)

EP-32 Effects of Microbubble-Bodyfeeding on Filtration Properties of Clay Suspension
Akihiko YOSHIMOTO, Hikaru UBUKATA, Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)

EP-33 Study on Chemical Surface Modification of Poly(tetrafluoroethylene) Microfiltration Membranes
Bumsuk JUNG* and Seulki LEE (Myongji University, Korea)

EP-34 Effect of Water Quality and Bubble Size Distribution On Prevention of Membrane Fouling using fine Bubbles
Kazufumi MATSUYAMA, Tomoki TAKAHASHI, Taro MIYOSHI, Masahiro YASUKAWA, Tomoichi WATABE, Hideto MATSUYAMA* (Kobe University, Japan)

EP-35 Polyethyleneglycol-Containing Copolyimides Membranes for the Separation of Aromatic/Alipatic Chemicals
Min Jae JO, Deuk Ju KIM and Sang Yong NAM* (Gyeongsang National University, Korea)

EP-36 Performnce of Forward Osmosis Membrane Applied To Post-Treatment of Anaerobic Membrane Bioreactor
Yuta MASUMORI, Taro MIYOSHI*, Sosuke ONODA, Masahiro YASUKAWA, Tomoki TAKAHASHI and Hideto MATSUYAMA** (Kobe University, Japan)

EP-37 3-Aminopropyltriethoxysilane (APTES) Functionalized Mesoporous Silica for the fabrication of Ceramic Membrane and Its Application to Cu²⁺ Separation in the Aqueous Phase
S. OH, T. KANG (Seoul National University, Korea), H. KIM (Korea Institute of Science and Technology, Korea), J. MOON, S. HONG and Jongheop YI* (Seoul National University, Korea)

- EP-38** Decolorization Properties of Dye by Enzymatic Membrane Reactor using Cultural Supernatant of White-Rot Fungus
Nobuyuki KATAGIRI*, Mitsunobu TAKATSU and Eiji IRITANI (Nagoya University, Japan)
- EP-39** Prevention of Bacteria Adhesion of Polyamide Reverse Osmosis Membranes using Phospholipid Polymer Immobilized via Surface-Initiated Atom Transfer Radical Polymerization
Genki YONAMINE, Daisuke SAEKI and Hideto MATSUYAMA* (Kobe University, Japan)
- EP-40** Fabrication of Nanopatterned Polymer Electrolyte Membranes for Fuel Cells
Cheol Hun PARK, Jong Kwan KOH, Yong-Gun SHUL and Jong Hak KIM* (Yonsei University, Korea)
- EP-41** Permselectivity of Anion Exchange Membrane in an Electrodialysis Process
Ryosuke TAKAGI*, Mahboobeh VASELBEHAGH and Hideto MATSUYAMA (Kobe University, Japan)
- EP-42** Ultrathin Nanomesh-Structured Membranes Comprising Unidirectionally Aligned Viral Assembly
Yong Man LEE (SKKU Advanced Institute of Nanotechnology (SAINT), Korea), Pil J. YOO* (SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Korea)
- EP-43** Preparation and Evaluation of Functionalized Nanofiber Membrane for Purification of Contaminated Water
Yasuhito MUKAI*, Eiji AMANO, Ayana MIZUNO and Tomoki FUJISHIMA (Nagoya University, Japan)
- EP-44** Fabrication of Alginate and Chitosan Complex Nanowebs using Electrospinning
Su Jeong LEE, Deuk Ju KIM (Gyeongsang National University, Korea), Young Woo LEE (HEPTYLY, Korea) and Sang Yong NAM* (Gyeongsang National University, Korea)
- EP-45** Fundamental Properties of Classification of Colloidal Particles by Nanofiber Membrane
Aya TAKAHASHI* and Yasuhito MUKAI (Nagoya University, Japan)
- EP-46** Comparative Analysis of Upward/Downward Filtration and Expression using a Consolidation Cell
Takeshi ISHII, Ryo FUKUYAMA, Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)
- EP-47** Development of a novel solid-liquid flocculator/separator with a double tube structure
Sachi FUJITA, Yoshihide MAWATARI*, Masato YAMAMURA and Hiroyuki KAGE (Kyushu Institute of Technology, Japan)
- EP-48** Relaxation Behavior of Polystyrene Particles in Bimodal Suspension Systems using Multi-Speckle Diffusing Wave Spectroscopy
Gwi Jeong OH, Ji Won HWANG (Korea University, Korea), Bumsang KIM (Hongik University, Korea), Kangtaek LEE (Yonsei University, Korea), Chang-Koo KIM (Ajou University, Korea) and Hyun Wook JUNG* (Korea University, Korea)
- EP-49** Ultrahigh-Pressure Expression Assisted with Self-Coagulation of Sewage Sludge Arising from Disruption Operation
Masahiro YAMADA*, Nobuyuki KATAGIRI and Eiji IRITANI (Nagoya University, Japan)
- EP-50** Investigation of Applicability of Immobilization in Calcium Alginate gel
Ryuhei YAMADA, Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)
- EP-51** Numerical Study on Particle Separation in a Microchannel with Asymmetric Multiple Branches
Dongjun HWANG and Dongjoo KIM* (Kumoh National Institute of Technology, Korea)

- EP-52** 3D Structure Characterization of Packed Partcles by X-Ray CT
Kazuho NAKAMURA*, Yuya HOSOKAI and Kanji MATSUMOTO (Yokohama National University, Japan)
- EP-53** Simulation of Turbulent Dispersion Effect on Particle Classification in an Elbow-Jet Classifier
Seok-Min JEONG and Dongjoo KIM* (Kumoh National Institute of Technology, Korea)
- EP-54** Development of a New wet Gravity Separator with Jet Flow
Ryota IJICHI, Takanori TANAKA*(Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi Iwata (Osaka Prefecture University, Japan)

[Oral Session] (Day 3 – Saturday, November 1st, 9:00-13:00)

- EO-01 9:00-9:20**
Highly Stabilized Olefin Transport Membranes
Sang Wook KANG* (Sangmyung University, Korea)
- EO-02 9:20-9:40**
Highly Effective Separation of Scandium Using a Polymer Inclusion Membrane with an Amide Acid-Type Carrier
Yuzo BABA, Fukiko KUBOTA (Kyushu University, Japan), Robert W. CATTRALL, Spas D. KOLEV (The University of Melbourne, Australia) and Masahiro GOTO* (Kyushu University, Japan)
- EO-03 9:40-10:00**
Development of High-Temperature Stable Pd Based Composite Membrane Using Electroless Plating on Porous Stainless Steel Substrate
Shin-Kun RYI* and Beom-Seok SEO (Korea Institute of Energy Research, Korea)
- EO-04 10:00-10:20**
Ion-Recognition Polyampholyte Grafted Membrane: Logistic-Like Gating Property
Hidenori OHASHI, Sae EBINA and Takeo YAMAGUCHI* (Tokyo Institute of Technology, Japan)
- EO-05 10:20-10:40**
Development of Thin Pore-Filled Ion-Exchange Membranes for Efficient and Cost-Effective Separation Applications
Do-Hyeong KIM, Eun-Hye JANG and Moon-Sung KANG* (Sangmyung University, Korea)
- EO-06 10:40-11:00**
Development of Biomimetic Water Treatment Membranes Using Phospholipid Bilayer and Channel Forming Peptides via Molecular Self-Organization
Daisuke SAEKI, Fumiya SAKO, Tsuyoshi YAMASHITA and Hideto MATSUYAMA* (Kobe University, Japan)
- [11:00-11:20] Coffee Break**
- EO-07 11:20-11:40**
Development of Novel Hydrogel Immobilizing Liposome at High Concentration and Its Application for Optical Resolution of Amino Acids
Hiroshi UMAKOSHI*, Kazuma SUGITA, Takaaki ISHIGAMI, Keishi SUGA, and Yukihiro OKAMOTO (Osaka University, Japan)
- EO-08 11:40-12:00**
Preparation of Carbon Dioxide Superflux (10,000 GPU Class) Zeolite Capillary Membrane for Post-Combustion Carbon Capture
Churl-Hee CHO*, Su-Jung JEONG, Ju-Sub SONG, Pankaj SHARMA and Moon-Hee HAN (Chungnam National University, Korea)

- EO-09 12:00-12:20**
CO₂ Recovery from Air with Amine/Ionic Liquid Mixed Liquid Membranes Supported by Nano Particles
Tomoki KAMIYA, Yuichiro HIROTA and Akira ITO* (Tokyo Institute of Technology, Japan)
- EO-10 12:20-12:40**
Mixed Matrix Membranes Consisting of Mesoporous Metal Oxides Dispersed in Graft Copolymer
Sang Jin KIM, Won Seok CHI, Harim JEON and Jong Hak KIM* (Yonsei University, Korea)
- EO-11 12:40-13:00**
Dielectrophoretic Particle Separation Using Carbon Nanotube Electrodes
Yuta TANEMORI, Noriaki SANO*, Tetsuo SUZUKI and Hajime TAMON (Kyoto University, Japan)

[Poster Session 3] (Day 3 – Saturday, November 1st, 11:20-13:00)

- EP-55** Preparation and Characterization of Cation-Exchange Membranes from Poly(Vinyl Alcohol) Based Block Copolymers
Marika ANNO, Taiko MIZUNO and Mitsuru HIGA* (Yamaguchi University, Japan)
- EP-56** Graphene and Graphene Oxide and Their Uses in Barrier Polymers
Byung Min YOO, Hee Wook YOON and Ho Bum PARK* (Hanyang University, Korea)
- EP-57** Evaluation of Permselectivity for Anions using Anion-Exchange Membranes in an Electrodialysis Process
Ryosuke HIRONAGA, Naoki KAWAMURA (Yamaguchi University, Japan), Nobuyuki TANAKA (ASTOM Corporation, Japan) and Mitsuru HIGA* (Yamaguchi University, Japan)
- EP-58** Effect of Embedded Carbon Nanotubes in Polymeric Matrix for Highly Water Permeable Membrane Based Desalination
Hee Dae LEE, Hyo Won KIM, Young Hoon CHO and Ho Bum PARK* (Hanyang University, Korea)
- EP-59** Optimization of Operating Conditions in a Large Reverse Electrodialysis System
Hitoshi TAKEMURA, Tomonori SAKURADA and Mitsuru HIGA* (Yamaguchi University, Japan)
- EP-60** Selective CO₂ Transport through Cyanuric Chloride and Ionic Liquid Composite Membrane
Dahye JI and Sang Wook KANG* (Sangmyung University, Korea)
- EP-61** Proton Exchange Membranes Prepared from Polysulfone-Based Graft Polymers by Atom Transfer Radical Polymerization
Kouhei UKAI, Yuriko KAKIHANA, and Mitsuru HIGA* (Yamaguchi University, Japan)
- EP-62** Supernatant Turbidity and Sludge Volume in a Flocculation Process with Concomitant Use of Inorganic and Polymer Flocculants
Hiroto KADOOKA* (Osaka Prefecture University, Azumi Filter Paper CO., LTD, Japan), Takanori TANAKA (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)
- EP-63** Poly(Ethylene Oxide) Membranes with Silver Nanoparticles for Facilitated Olefin Transport
Daeun SONG and Sang Wook KANG* (Sangmyung University, Korea)
- EP-64** Benzene/Cyclohexane Separation through Silica Hybrid Membranes
Emi MATSUYAMA, Ayumi IKEDA, Ryuhei ONO, Mikihiro NOMURA* (Shibaura Institute of Technology, Japan)
- EP-65** Evaluation of Cake Properties Based on Variable Pressure Ultrafiltration Associated with Reduction in Cake Surface Area
Nobuyuki KATAGIRI*, Ryota NAKAJIMA and Eiji IRITANI (Nagoya University, Japan)

EP-66

Driving Force for Solid/Liquid Separation under Electric Field

Takanori TANAKA* (Osaka Prefecture University, Japan), Mohammed Saedi JAMI (International Islamic University Malaysia, Malaysia) and Masashi IWATA (Osaka Prefecture University, Japan)