

## F: Extraction/Supercritical Fluid Technology

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

- FP-01** Dewaxing and Deacidification of The Beeswax for Restoration of The Annals of The Joseon Dynasty  
Hee Suk WOO, Youn-Woo LEE \* (Seoul National University, Korea)
- FP-02** Extraction and Micronization of  $\beta$ -Glucan from Barley by Subcritical Water and CO<sub>2</sub> Mixed Solvent  
Shoko KODAMA (Nagoya University, Japan), Wahyudiono (University of Surabaya, Indonesia), Siti MACHMUDAH (Sepuluh Nopember Institute of Technology, Indonesia), Hideki KANDA (Nagoya University, Japan, Japan Science and Technology Agency, Japan), and Motonobu GOTO\* (Nagoya University, Japan)
- FP-03** Hydrothermal Reaction of Ginseng Extract  
Jebin RYU, Hun Wook LEE, Junho YOON, and Youn-Woo LEE \* (Seoul National University, Korea)
- FP-04** Influence of Crystal Polymorphism on The Solubility of Theophylline in Supercritical Carbon Dioxide  
Kyohei SANNO, Masamichi NISHIJIMA (Shinshu University, Japan), Junichi SAKABE, Yusuke SHIMOYAMA (Tokyo Institute of Technology, Japan), and Hirohisa UCHIDA \* (Shinshu University, Japan)
- FP-05** Enzymatic Digestibility and Kinetics of Subcritical Water Pretreatment of Lignocellulosic Biomass  
Junho YOON, Aye Aye MYINT, Hun Wook LEE, Seungjae SIM, and Youn-Woo LEE \* (Seoul National University, Korea)
- FP-06** Extraction of Functional Ingredients from Citrus 'Genkou' by Supercritical Carbon Dioxide  
Yukihiro KAWAMOTO (Nagoya University, Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Yuriko SUIDOU (Kyushu Institute of Technology, Japan), Takuya SUETSUGU (Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Hideki KANDA, Motonobu GOTO\* (Nagoya University, Japan), and Munehiro HOSHINO (Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan)
- FP-07** Change of Bitterness for The Inclusion Complex of Drug with  $\beta$ -Cyclodextrin  
Jimoon KANG, Bumjoon SEO, and Youn-Woo LEE \* (Seoul National University, Korea)
- FP-08** Enrichment of Terpenes from Essential Oil and Lipid Mixture  
Chiho UEMORI (Kyushu Institute of Technology, Japan), Yukihiro KAWAMOTO (Nagoya University, Japan, Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Teruaki MATSUBARA, Yoshito SASAKI, Masahiro TANAKA, Munehiro HOSHINO (Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Junshi SAKAMOTO (Kyushu Institute of Technology, Japan), Armando T. QUITAIN, Mitsuru SASAKI (Kumamoto University, Japan), and Motonobu GOTO \* (Nagoya University, Japan)
- FP-09** Preparation of Inclusion Complex and Encapsulation Particles of Cetirizine Dihydrochloride by Aerosol Solvent Extraction System  
Won-Su SON, Yong-Suk YOUN, and Youn-Woo LEE \* (Seoul National University, Korea)
- FP-10** Application of Green Solvent Extraction for Citrus Functional Ingredients  
Masahiro TANAKA, Takuya SUETSUGU (Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Yuriko SUIDOU, Yoshito SASAKI (Kyushu Institute of Technology, Japan), Yukihiro KAWAMOTO (Nagoya University, Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), Munehiro HOSHINO (Maruboshi Vinegar · Ascii, Food Technology and Biology of Technical Center, Japan), and Motonobu GOTO\* (Nagoya University, Japan)

- FP-11** A Supercritical Isopropanol Route for Anatase TiO<sub>2</sub>-Graphene Composites and Their Superior Electrochemical Performance  
Dohyeon YOON and Jaehoon KIM\* (Sungkyungkwan University, Korea)
- FP-12** Degradation Mechanism and Structure Change of Microcrystalline Cellulose in Subcritical Water  
Wei YANG, Toshinori SHIMANOUCI, and Yukitaka KIMURA\* (Okayama University, Japan)
- FP-13** Graphene@SnO<sub>2</sub> Nanocomposites Using Supercritical Methanol as a High-Performance Anode for Lithium Ion Battery  
Wenyng LI, Dohyeon YOON, and Jaehoon KIM\* (Sungkyungkwan University, Korea)
- FP-14** Subcritical Water Extraction of Protein from Microalgae *Nannochloropsis oceanica* Deoiled by Liquefied Dimethyl Ether  
Masaki OGAWA, Yuko KURITA, Yuichi KAMO (Nagoya University, Japan), Boonnoun PANATPONG (Nagoya University, Japan, Naresuan University, Thailand), Wahyudiono (University of Surabaya, Indonesia), Siti MACHMUDAH (Sepuluh Nopember Institute of Technology, Indonesia), Hideki KANDA\* (Nagoya University, Japan, Japan Science and Technology Agency, Japan), and Motonobu GOTO (Nagoya University, Japan)

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

- FP-15** Recycling Technology of Phenol Resin Using Supercritical Fluid  
Hang-Kyu CHO and Jong Sung LIM \* (Sogang University, Korea)
- FP-16** Energy-Saving Lipid Extraction from Microalgae *Spirulina* by Liquefied Dimethyl Ether  
Hideki KANDA\*(Nagoya University, Japan, Japan Science and Technology Agency, Japan), Rintaro HOSHINO, Masaki OGAWA, Kazuya MURAKAMI, Yuko KURITA, and Motonobu GOTO (Nagoya University, Japan)
- FP-17** Carbon Coated Molybdenum Dioxide Nano Composite as A High Performance Lithium Storage Material  
Jieun HWANG and Jaehoon KIM \* (Sungkyungkwan University, Korea)
- FP-18** Production of Microparticles of Theophylline Using Supercritical Antisolvent Recrystallization (SAS) in Micro Space  
Takuma HIROTA and Hirohisa UCHIDA \* (Shinshu University, Japan)
- FP-19** Comparison of Decrosslinking Reaction of Silane Crosslinked Polyethylene and Crosslinked Polyethylene Using Supercritical Methanol  
Giyong HONG, Soon Man HONG, and Youn-Woo LEE \* (Seoul National University, Korea)
- FP-20** Crystal Polymorphism of Caffeine Microparticles Produced by Rapid Expansion of Supercritical Solutions (RESS) Technique  
Kohei WATANABE, Daichi SHINOTSUKA, Daisuke KONDO (Shinshu University, Japan), Junichi SAKABE, Yusuke SHIMOYAMA (Tokyo Institute of Technology, Japan), and Hirohisa UCHIDA \* (Shinshu University, Japan)
- FP-21** Depolymerization of Lignin in Supercritical Ethanol to Aromatic Chemicals  
Asim RIAZ and Jaehoon KIM\* (Sungkyungkwan University, Korea)
- FP-22** Bubble Nucleation Pressure of Polymers Using High-Pressure Gases  
Ying SUN, Yumi UEDA, Hiroyuki SUGANAGA, Masashi HARUKI, Shin-ichi KIHARA, and Shigeki TAKISHIMA\* (Hiroshima University, Japan)
- FP-23** Effect of Cation in Ionic Liquids on Phase Equilibria in Aqueous Two Phase Extraction of Succinic Acid  
Yong Hwa LEE, Jun LEE, and Yeon Ki HONG \* (Korea National University of Transportation, Korea)

- FP-24** Recycling Thermosetting Polyester Resin into Functional Polymer Using Subcritical Water  
Takaharu NAKAGAWA\* (Nagoya University, Panasonic Corporation, Japan) and Motonobu GOTO (Nagoya University, Japan)
- FP-25** Morpholinium Ionic Liquid-Based Aqueous Two Phase Extraction of 1,3-Propanediol  
Woo Yune LEE, Ji Won KIM, Ki-Sub KIM, Jong Kyun YOU, and Yeon Ki HONG (Korea National University of Transportation, Korea)
- FP-26** Design of Liposome Membrane as A Platform for Recognition of Hydrophobic Molecules and Their Conversion  
Fumihiko IWASAKI, Keishi SUGA, and Hiroshi UMAKOSHI\* (Osaka University, Japan)
- FP-27** Calcium Removal from Heavy Crude Oil Using A Calcium Removal Agent  
Dong Woo CHO, Hee Tae BEUM, Hyung Chul YOON, Sang Sup HAN, and Jong Nam KIM \* (Korea Institute of Energy Research, Korea)
- FP-28** Extraction of Phytochemicals from Saffron with Supercritical Carbon Dioxide  
Mika ITO, Hazuki NEROME (Nagoya University, Japan), Hideki KANDA (Nagoya University, Japan, Japan Science and Technology Agency, Japan), and Motonobu GOTO\* (Nagoya University, Japan)
- FP-29** Effect of Additives on Enhancement of The Asphaltene Precipitation in A n-Paraffin Solvent Extraction from Bitumen  
Eun Hee KWON, Kang Seok GO, Min Yong KIM, Heyn Sung CHANG, Kwang Ho KIM, Ki Bong LEE\*, and Nam Sun NHO\* (Korea Institute of Energy Research, Korea)

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

- FO-01 9:00-9:15**  
Extraction of Lower Carboxylic Acids from The Aqueous Mixed Solution with Di-Octylamine  
Tatsumi YAMAMOTO\*, Kazuo KOJIMA, and Hidetoshi MORI (University of Toyama, Japan)
- FO-02 9:15-9:30**  
Correlation Between Agglomeration Behavior, Crystal Habit and Entropy of Fusion in The Supercritical Antisolvent Process  
Tae Jun YOON, Yong-Suk YOUN, Won-Su SON, Bumjoon SEO, Ki Ho AHN, and Youn-Woo LEE \* (Seoul National University, Korea)
- FO-03 9:30-9:45**  
Extraction of Cesium from Fly Ash Using Supercritical Carbon Dioxide  
Idzumi OKAJIMA\*, Ryosuke AOKI, and Takeshi SAKO (Shizuoka University, Japan)
- FO-04 9:45-10:00**  
Precipitation of RDX Particles Using Rapid Expansion of Supercritical Solution  
Tae Wan KIM, Bum Joon SEO, Sung ho KIM, Ja young KIM, Keun Deuk LEE, Jin Seok KIM, and Youn-Woo LEE\* (Seoul National University, Korea)
- FO-05 10:00-10:15**  
Liquid Carbon Dioxide Extraction of Xanthenes from Pericarps of Garcinia Mangostana Linn. Enhanced by Ultrasonic Irradiation  
Kenji MISHIMA\*, Ryo KAWAKAMI, Takunori HARADA, Takafumi KATO, Keiichi IRIE, Kenichi MISHIMA (Fukuoka University, Japan), Hirofumi KAWAMURA (San-Ei Gen F.F.I., Japan), Salim MUSTOFA (Indonesia Nuclear Energy Agency, Indonesia), Yusraini Dian Inayati SIREGAR, Hilyatuz ZAHARO, Fauziyah HASANAH, Yusraini Dian Inayati SIREGAR, Lily Surayya Eka PUTRI, and Agus SALIM (Syarif Hidayatullah State Islamic University Jakarta, Indonesia)

- FO-06 10:15-10:30**  
One Pot Synthesis of Lignin Nanoparticles by The Compressed CO<sub>2</sub> Anti-Solvent Method  
Aye Aye MYINT, Hun-Wook LEE, Jun-Ho YOON, Bum-Joon SEO, Won-Su SON, Seung-Jae SIM, Tae-Jun YOON, and Youn-Woo LEE\* (Seoul National University, Korea)
- FO-07 10:30-10:45**  
Whole Utilization of Isada Krill as New Seasoning Powders Using Subcritical Fluid and Drying Technologies  
Intira KOOMYART, Hironori NAGAMIZU (Kyoto University, Japan), Pramote KHUWIJITJARU (Silpakorn University, Thailand), Takashi KOBAYASHI (Kyoto University, Japan), Hirokazu SHIGA, Hidefumi YOSHII (Kagawa University, Japan), and Shuji ADACHI\* (Kyoto University, Japan)
- FO-08 10:45-11:00**  
Supercritical Ethanol; A Promising Solvent for Algal Biomass Liquefaction  
Hassan ZEB and Jaehoon KIM\* (Sungkyungkwan University, Korea)
- [11:00-11:20] Coffee Break**
- FO-09 11:20-11:40 [Keynote]**  
Simultaneous Chemical Reaction and Particle Formation in Supercritical Fluids  
Youn-Woo LEE\* (Seoul National University, Korea)
- FO-10 11:40-12:00 [Keynote]**  
Hybrid Extraction Process Using Two-Phase Solvent of Sub- and Supercritical CO<sub>2</sub> and Water  
Motonobu GOTO\* (Nagoya University, Japan) and Ryuichi FUKUZATO (SCF Techno-Link, Japan)
- FO-11 12:00-12:15**  
Reactive Separation in Mixed Subcritical H<sub>2</sub>O/Supercritical CO<sub>2</sub> System for Effective Conversion of Hesperidin to Hesperetin  
Tsubasa TAKAYAMA, Armando T. QUITAIN\*, Mitsuru SASAKI (Kumamoto University, Japan), Masahiro TANAKA, Munehiro HOSHINO (Maruboshi Vinegar and ASCII Co. Ltd., Japan)
- FO-12 12:15-12:30**  
Biofuel Synthesis in Supercritical Fluids  
Jaehoon KIM\* (Sungkyungkwan University, Korea)
- FO-13 12:30-12:45**  
Dynamics behavior of super critical carbon dioxide in polypropylene  
Fumio SAWA\* (Toshiba Corporation, Japan)
- FO-14 12:45-13:00**  
Fractionation of Woody Biomass with Subcritical Water and Formosolv Treatment  
Seungjae SIM, Junho YOON, Hun Wook LEE, and Youn-Woo LEE\* (Seoul National University, Korea)