

# Technical Program

**September 5, 2018 (Wednesday)**

8:30 – 8:40	Opening Remarks Prof. Kiyofumi Kurihara (Nihon University, Japan)
<b>8:40 – 9:20</b>	<b>Plenary Lecture PL 01</b> Chair: Prof. Yoshio Iwai (Kyushu University, Japan)
	<b>Molecular design and prediction of structure and physical properties of complex chemical systems of importance to the oil and gas industry</b> Ioannis G. Economou* Texas A&M University at Qatar, Qatar
<b>9:20 – 10:30</b>	<b>Session I</b> Chair: Dr. Z. Nevin Gerek (AVEVA Group plc., USA) and Prof. Katsumi Tochigi (Nihon University, Japan)
<b>9:20 – 10:00</b>	<b>Keynote Lecture KL 01</b> <b>Examining the self-assembly of stratum corneum lipid mixtures</b> Tim Moore, Donna Xia, Anne Leonhard, Chris Iacovella, <u>Clare McCabe</u> * Vanderbilt University, USA
<b>10:00 – 10:30</b>	<b>Invited Lecture IL 01</b> <b>Correlation of phase equilibria by new activity coefficient model</b> <u>Yoshio Iwai</u> *, Ryosuke Seki, Yoshihiro Tanaka Kyushu University, Japan
10:30 – 10:50	Coffee Break

<b>10:50 – 12:40</b>	<b>Session II</b>
Chair: Prof. Richard L. Smith (Tohoku University, Japan) and Prof. Tetsuo Honma (National Institute of Technology, Hachinohe College, Japan)	
<b>10:50 – 11:30</b>	<b>Keynote Lecture KL 02</b>
<b>Computational screening of soft materials systems with application to nano-lubrication systems</b>	
Andrew Z. Summers, Christopher R. Iacovella, Clare McCabe, <u>Peter T. Cummings</u> *	
Vanderbilt University, USA	
<b>11:30 – 12:00</b>	<b>Invited Lecture IL 02</b>
<b>Multiscale modeling and simulations of protein adsorption at interfaces</b>	
Jian Zhou*	
South China University of Technology, P. R. China	
<b>12:00 – 12:20</b>	<b>OP 01</b>
<b>Numerical simulation for the motion of a single bubble on the vertical wall surface by a lattice Boltzmann method for two-phase flow with large density difference</b>	
<u>Tomohiko Yamaguchi</u> *, Satoru Momoki	
Nagasaki University, Japan	
<b>12:20 – 12:40</b>	<b>OP 02</b>
<b>Thermodynamic modeling of adsorption equilibria of metal precursors on mesoporous silica adsorbents in supercritical carbon dioxide with SAFT-VR approach</b>	
<u>Ikuo Ushiki</u> <sup>*1</sup> , Mio Koike <sup>2</sup> , Yoshiyuki Sato <sup>2</sup> , Shigeki Takishima <sup>1</sup> , Hiroshi Inomata <sup>2</sup>	
<sup>1</sup> Hiroshima University, Japan <sup>2</sup> Tohoku University, Japan	
12:40 – 13:50	Lunch
<b>13:50 – 15:40</b>	<b>Session III</b>
Chair: Prof. Edward Maginn (University of Notre Dame) and Prof. Taka-aki Hoshina (Nihon University, Japan)	
<b>13:50 – 14:30</b>	<b>Keynote Lecture KL 03</b>
<b>Current status and challenges in electrolyte thermodynamics</b>	
Georgios M. Kontogeorgis*	
Technical University of Denmark, Denmark	
<b>14:30 – 15:00</b>	<b>Invited Lecture IL 03</b>
<b>Molecular dynamics simulation study on the correlations between macroscopic properties and microscopic interactions of CO<sub>2</sub> physical absorbents</b>	
Ryo Nagumo*	
Nagoya Institute of Technology, Japan	
<b>15:00 – 15:20</b>	<b>OP 03</b>
<b>Effective charge of ionic liquid determined through MD/DFT self-consistent scheme</b>	
<u>Ryosuke Ishizuka</u> <sup>*1,2</sup> , Nobuyuki Matubayasi <sup>1,2</sup>	
<sup>1</sup> Osaka University, Japan <sup>2</sup> Kyoto University, Japan	

<b>15:20 – 15:40</b>	<b>OP 04</b>
<b>Measurement of diffusion coefficients of vitamin K<sub>3</sub> in mixture of CO<sub>2</sub> and methanol over an entire range of methanol at 313.2 K up to 30 MPa</b>	
Ryusei Suzuki <sup>1</sup> , Junichi Sakabe <sup>1</sup> , <u>Toshitaka Funazukuri</u> <sup>*,1</sup> , Chang Yi Kong <sup>2</sup>	
<sup>1</sup> Chuo University, Japan <sup>2</sup> Shizuoka University, Japan	
15:40 – 16:00	Coffee Break
<b>16:00 – 18:00</b>	<b>Session IV</b>
Chair: Prof. Takeshi Momose (University Tokyo, Japan) and Dr. Mitsuhiro Kanakubo (AIST, Japan)	
<b>16:00 – 16:40</b>	<b>Keynote Lecture KL 04</b>
<b>Using reaction ensemble Monte Carlo simulations to understand how solvation and confinement affects equilibrium concentrations of reacting mixtures</b>	
Ryan Gotchy Mullen, <u>Edward J. Maginn</u> <sup>*</sup>	
University of Notre Dame, USA	
<b>16:40 – 17:00</b>	<b>OP 05</b>
<b>Preparation of solid acid catalysts from seaweed for the esterification of biomass-based components</b>	
<u>Mitsuru Sasaki</u> <sup>*,1</sup> , Shamala Balasubramaniam <sup>1</sup> , Shohei Ninomiya <sup>1</sup> , Armando T. Quitain <sup>1</sup> , Tetsuya Kida <sup>1</sup> , Marleny Aranda Saldana <sup>2</sup>	
<sup>1</sup> Kumamoto University, Japan <sup>2</sup> University of Alberta, Canada	
<b>17:00 – 17:20</b>	<b>OP 06</b>
<b>Phase behavior and reactivity of ionic liquid catalysts for esterification of long-chain fatty alcohols/carboxylic acids under mild conditions</b>	
<u>Yuki Kohno</u> <sup>*</sup> , Takashi Makino, Mitsuhiro Kanakubo	
National Institute of Advanced Industrial Science and Technology (AIST), Japan	
<b>17:20 – 17:40</b>	<b>OP 07</b>
<b>The extraction of the receptacle and leaf of strawberry with supercritical carbon dioxide and entrainers</b>	
<u>Takafumi Sato</u> <sup>*</sup> , Fumika Fukuda, Yoshiro Ikeya, Ken-ichi Nihei, Naotsugu Itoh	
Utsunomiya University, Japan	
<b>17:40 – 18:00</b>	<b>OP 08</b>
<b>Measurement of vapor pressure of various compounds by gas chromatographic method with mass-basis activity coefficient</b>	
<u>Jun Mase</u> <sup>1,2</sup> , Yusuke Shimoyama <sup>*,2</sup>	
<sup>1</sup> Idemitsu Kosan Co., Ltd., Japan <sup>2</sup> Tokyo Institute of Technology, Japan	
18:00 – 20:00	Dinner

## September 6, 2018 (Thursday)

<b>8:30 – 9:00</b>	<b>Session V</b>
Chair: Prof. Takeshi Sugahara (Osaka University, Japan) and Dr. Seiya Hirohama (AVEVA Group plc., USA)	
<b>8:30 – 9:00</b>	<b>Invited Lecture IL 04</b>
<b>Challenges and solutions for next generation process simulators</b>	
Z. <u>Nevin Gerek Ince</u> <sup>*</sup> , Seiya Hirohama, David Bluck	
AVEVA Group plc., USA	
<b>9:00 – 10:00</b>	<b>Session VI Flash Presentation for Young Researchers</b>
Chair: Prof. Takeshi Sugahara (Osaka University, Japan) and Dr. Seiya Hirohama (AVEVA Group plc., USA)	
<b>9:00 – 9:10</b>	<b>FP 01</b>
<b>Phase behavior and phase equilibria for the polydisperse polyethylene + ethylene + hexane system at high pressures and temperature: Experiments and Correlations</b>	
<u>Rizqy Romadhona Ginting</u> , Daichi Nakata, Kazunori Himemura, Ikuo Ushiki, Shin-ichi Kihara, Shigeki Takishima <sup>*</sup>	
Hiroshima University, Japan	
<b>9:10 – 9:20</b>	<b>FP 02</b>
<b>Measurement of binary diffusion coefficient for Cr(acac)<sub>3</sub> in high temperature region of supercritical carbon dioxide</b>	
<u>Minoru Yamamoto</u> <sup>1</sup> , Sakabe Junichi <sup>1</sup> , Toshitaka Funazukuri <sup>*,1</sup> , Chang Yi Kong <sup>2</sup>	
<sup>1</sup> Chuo University, Japan <sup>2</sup> Shizuoka University, Japan	
<b>9:20 – 9:30</b>	<b>FP 03</b>
<b>Increased biocatalytic activity in CO<sub>2</sub>-expanded bio-based liquids</b>	
<u>Hai Nam Hoang</u> <sup>1</sup> , Emanuel Granero-Fernandez <sup>2</sup> , Shinjiro Yamada <sup>1</sup> , Shuichi Mori <sup>3</sup> , Hiroyuki Kagechika <sup>3</sup> , Yaocihuatl Medina-Gonzalez <sup>2</sup> , Tomoko Matsuda <sup>*,1</sup>	
<sup>1</sup> Tokyo Institute of Technology, Japan <sup>2</sup> Université de Toulouse, France	
<sup>3</sup> Tokyo Medical and Dental University, Japan	
<b>9:30 – 9:40</b>	<b>FP 04</b>
<b>Density, viscosity, and CO<sub>2</sub>/CH<sub>4</sub> solubility selectivity in protic and aprotic ionic liquids</b>	
<u>Masaki Watanabe</u> <sup>1</sup> , Daisuke Kodama <sup>*,1</sup> , Takashi Makino <sup>2</sup> , Mitsuhiro Kanakubo <sup>2</sup>	
<sup>1</sup> Nihon University, Japan	
<sup>2</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan	
<b>9:40 – 9:50</b>	<b>FP 05</b>
<b>Thermodynamic property measurements and modeling for chemical hydrogen storage mediums</b>	

Seishin Sato<sup>1</sup>, Yuya Yoneda<sup>1</sup>, Hiroyuki Miyamoto<sup>\*,1</sup>, Ryo Akasaka<sup>2</sup>, Eric W. Lemmon<sup>3</sup>

<sup>1</sup> Toyama Prefectural University, Japan

<sup>2</sup> Kyusyu Sangyo University, Japan

<sup>3</sup> National Institute of Standards and Technology (NIST), USA

<b>9:50 – 10:00</b>	<b>FP 01 – FP 05 Discussion</b>
<b>10:00 – 12:20</b>	<b>Poster Session</b>
12:20 – 13:40	Lunch
13:40 – 13:50	Group Photo
13:50 – 19:00	Excursion
19:00 – 21:00	Banquet

## September 7, 2018 (Friday)

<b>8:30 – 10:40</b>	<b>Session VII</b>
Chair: Prof. Daisuke Kodama (Nihon University, Japan) and Prof. Mitsuru Sasaki (Kumamoto University, Japan)	
<b>8:30 – 9:10</b>	<b>Keynote Lecture KL 05</b>
<b>Capturing impurities from oil and gas using deep eutectic solvents</b>	
Samah E.E Warrag <sup>1,2</sup> , Cor J. Peters <sup>*,1,3</sup>	
<sup>1</sup> Khalifa University of Science and Technology, United Arab Emirates	
<sup>2</sup> Eindhoven University of Technology, The Netherlands <sup>3</sup> Colorado School of Mines, USA	
<b>9:10 – 9:40</b>	<b>Invited Lecture IL 05</b>
<b>Generation of pulsed arc discharge plasma in supercritical carbon dioxide</b>	
Tomohiro Furusato <sup>*,1</sup> , Naokazu Ashizuka <sup>1</sup> , Kosuke Goto <sup>1</sup> , Takahiko Yamashita <sup>1</sup> , Tetsuo Honma <sup>2</sup> , Mitsuru Sasaki <sup>3</sup>	
<sup>1</sup> Nagasaki University, Japan <sup>2</sup> National Institute of Technology, Hachinohe College, Japan	
<sup>3</sup> Kumamoto University, Japan	
<b>9:40 – 10:00</b>	<b>OP 09</b>
<b>CO<sub>2</sub> solubility and phase behavior in phase separation solvent at high pressure</b>	
Andrzej-Alexander Litwinowicz <sup>1</sup> , Takashi Makino <sup>1</sup> , Yuki Kohno <sup>1</sup> , Hiroshi Machida <sup>2</sup> , Koyo Norinaga <sup>2</sup> , Mitsuhiro Kanakubo <sup>*,1</sup>	
<sup>1</sup> National Institute of Advanced Industrial Science and Technology, Japan	
<sup>2</sup> Nagoya University, Japan	
<b>10:00 – 10:20</b>	<b>OP 10</b>
<b>Solubility prediction of CO<sub>2</sub> in ionic liquids</b>	
Hideo Nishiumi <sup>*</sup>	
Hosei University, Japan	
<b>10:20 – 10:40</b>	<b>OP 11</b>
<b>Structure II hydrate formation with amine toward new gas separation process</b>	
Sanehiro Muromachi <sup>*,1,2</sup> , Hassan Sharifi <sup>1</sup> , John A. Ripmeester <sup>1,3</sup> , Peter Englezos <sup>1</sup>	
<sup>1</sup> The University of British Columbia, Canada	
<sup>2</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan	
<sup>3</sup> National Research Council of Canada, Canada	
<b>10:40 – 11:00</b>	<b>Coffee Break</b>

<b>11:00 – 13:00</b>	<b>Session VIII</b>
Chair: Prof. Ikuo Ushiki (Hiroshima University, Japan) and Dr. Takashi Makino (AIST, Japan)	
<b>11:00 – 11:30</b>	<b>Invited Lecture IL 06</b>
<b>Development of fast continuous supercritical CO<sub>2</sub> extraction/separation process using micromixer</b>	
<u>Tatsuya Fujii</u> <sup>*</sup> <sup>1</sup> , Yasuaki Matsuo <sup>1</sup> , Shin-ichiro Kawasaki <sup>1</sup>	
<sup>1</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan.	
<b>11:30 – 12:00</b>	<b>Invited Lecture IL 07</b>
<b>Materials informatics for designing functional liquids</b>	
Hirotoshi Mori <sup>*</sup>	
Ochanomizu University, Japan	
<b>12:00 – 12:20</b>	<b>OP 12</b>
<b>Development of simulation technology for cement manufacturing process</b>	
<u>Morihisa Yokota</u> <sup>*</sup> , Tatsuou Izumi, Takeshi Suemasu	
UBE Industries, Ltd., Japan	
<b>12:20 – 12:40</b>	<b>OP 13</b>
<b>A prediction method of vapor pressure from boiling point data</b>	
Shuzo Ohe <sup>*</sup>	
Tokyo University of Science, Japan	
<b>12:40 – 13:00</b>	<b>OP 14</b>
<b>Pressure dependency of azeotropic point for binary system methanol + dimethyl carbonate</b>	
<u>Hiroyuki Matsuda</u> <sup>*</sup> , Mitsuaki Negishi, Shinya Iino, Kiyofumi Kurihara, Katsumi Tochigi, Kenji Ochi	
Nihon University, Japan	
<b>13:00 – 13:10</b>	<b>Closing Remarks and Student Poster Award</b>
Prof. Kiyofumi Kurihara (Nihon University, Japan)	

# List of Poster Presentations

## PP 01

### **CO<sub>2</sub> solubilities in ether functionalized phosphonium-based ionic liquids at 313.15 K**

Kouta Takahashi<sup>1</sup>, Takumi Takahashi<sup>1</sup>, Masaki Watanabe<sup>1</sup>, Daisuke Kodama<sup>\*,1</sup>, Takashi Makino<sup>2</sup>, Mitsuhiro Kanakubo<sup>2</sup>, Tsutomu Watanabe<sup>3</sup>, Eri Hamanishi<sup>3</sup>

<sup>1</sup> Nihon University, Japan

<sup>2</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan

<sup>3</sup> Nippon Chemical Industrial Co., Ltd., Japan

## PP 02

### **Thermodynamic modeling of high pressure VLE and LLE for dimethylether + water system using equation of state**

Shigeo Oba<sup>\*,1</sup>, Tomoya Tsuji<sup>2</sup>, Lian See Tan<sup>2</sup>

<sup>1</sup> Applied Thermodynamics and Physical Properties, Co., Ltd., Japan

<sup>2</sup> Universiti Teknologi Malaysia, Malaysia

## PP 03

### **Characterization for structure-based CO<sub>2</sub> selectivity of ionic clathrate hydrates**

Hidenori Hashimoto<sup>1,2</sup>, Hiroyuki Ozeki<sup>1</sup>, Sanehiro Muromachi<sup>\*,2</sup>

<sup>1</sup> Toho University, Japan

<sup>2</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan

## PP 04

### **Cross-correlation analysis of stress-structure coupling of liquids**

Tsuyoshi Yamaguchi<sup>\*</sup>

Nagoya University, Japan

## PP 05

### **CO<sub>2</sub> absorption effect on physical properties for butylethanolamine aqueous solution at 313 K**

Kento Fujita<sup>1</sup>, Masaki Okada<sup>1</sup>, Taka-aki Hoshina<sup>\*,1</sup>, Hidetaka Yamada<sup>2</sup>, Tomoya Tsuji<sup>3</sup>, Toshihiko Hiaki<sup>1</sup>

<sup>1</sup> Nihon University, Japan

<sup>2</sup> Reserch Institute of Innovative Technology for the Earth, Japan

<sup>3</sup> Universiti Teknologi Malaysia, Malaysia

## PP 06

### **Interfacial Tension of CO<sub>2</sub>/EtOH/PS ternary system**

Hiroaki Matsukawa<sup>\*,1</sup>, Yuichiro Shimada<sup>2</sup>, Masakazu Naya<sup>1</sup>, Atsushi Shono<sup>1</sup>, Katsuto Otake<sup>1</sup>

<sup>1</sup> Tokyo University of Science, Japan

<sup>2</sup> Nagoya University, Japan

## PP 07



**Measurement and correlation of vapor – liquid distribution coefficients of flavonoids in supercritical carbon dioxide – ethanol – water systems**

Soma Sato<sup>\*</sup>, Masaki Ota, Yoshiyuki Sato, Richard L. Smith, Jr., Hiroshi Inomata

Tohoku University, Japan

**PP 08**

**Memory effect and hydrate reformation from TBAB aqueous solution - SEM observation**

Hironobu Machida<sup>\*,1</sup>, Hiroyasu Masunaga<sup>2</sup>, Takeshi Sugahara<sup>3</sup>, Izumi Hirasawa<sup>4</sup>

<sup>1</sup> Panasonic Corporation, Japan

<sup>2</sup> Japan Synchrotron Radiation Research Institute, SPring-8, Japan

<sup>3</sup> Osaka University, Japan

<sup>4</sup> Waseda University, Japan

**PP 09**

**PVT relationships of methyltrimethoxysilane and tetramethyl orthosilicate**

Hiroyuki Suzuki<sup>1</sup>, Hiroaki Matsukawa<sup>1</sup>, Yuichiro Shimada<sup>2</sup>, Masakazu Naya<sup>1</sup>, Atsushi Shono<sup>1</sup>, Taka-aki Hoshina<sup>3</sup>, Tomoya Tsuji<sup>4</sup>, Katsuto Otake<sup>\*,1</sup>

<sup>1</sup> Tokyo University of Science, Japan

<sup>2</sup> Nagoya University, Japan

<sup>3</sup> Nihon University, Japan

<sup>4</sup> University Technology Malaysia, Malaysia

**PP 10**

**A generalized model for predicting adsorption equilibria of various VOCs on activated carbon in supercritical carbon dioxide**

Ikuo Ushiki<sup>\*,1</sup>, Yoshiyuki Sato<sup>2</sup>, Yasuyuki Ito<sup>3</sup>, Shigeki Takishima<sup>1</sup>, Hiroshi Inomata<sup>2</sup>

<sup>1</sup> Hiroshima University, Japan

<sup>2</sup> Tohoku University, Japan

<sup>3</sup> DAI-DAN Co., Ltd., Japan

**PP 11**

**Phase equilibrium relations of semiclathrate hydrates based on tetra-*n*-butylphosphonium formate, acetate, propionate and lactate**

Jin Shimada<sup>1</sup>, Masami Shimada<sup>1</sup>, Takeshi Sugahara<sup>2</sup>, Katsuhiko Tsunashima<sup>\*,1</sup>

<sup>1</sup> National Institute of Technology, Wakayama Collage, Japan

<sup>2</sup> Osaka University, Japan

**PP 12**

**Representation of solubilities of phenylthioanthraquinone in supercritical carbon dioxide using Hansen solubility parameter**

Kazuhiro Tamura<sup>\*</sup>, Takuya Fukamizu

Kanazawa University, Japan

**PP 13**

**Thermodynamic stabilities of tetra-*n*-butylphosphonium + gas semiclathrate hydrate systems**

Masami Shimada<sup>1</sup>, Takeshi Sugahara<sup>2</sup>, Katsuhiko Tsunashima<sup>\*,1</sup>

<sup>1</sup> National Institute of Technology, Wakayama College, Japan

<sup>2</sup> Osaka University, Japan

**PP 14**

**Phase equilibrium measurement of semiclathrate hydrates by differential scanning calorimetry**

Takeshi Sugahara<sup>\*,1</sup>, Hironobu Machida<sup>2</sup>

<sup>1</sup> Osaka University, Japan                      <sup>2</sup> Panasonic Corporation, Japan

**PP 15**

**Densities for CO<sub>2</sub> / C<sub>6</sub>H<sub>12</sub>, C<sub>6</sub>H<sub>11</sub>CH<sub>3</sub> and C<sub>2</sub>H<sub>5</sub>C<sub>6</sub>H<sub>5</sub> systems**

Ken Kuwabara<sup>1</sup>, Hiroaki Matsukawa<sup>1</sup>, Yuichiro Shimada<sup>2</sup>, Masakazu Naya<sup>1</sup>, Atsushi Shono<sup>1</sup>, Tomoya Tsuji<sup>3</sup>, Katsuto Otake<sup>\*,1</sup>

<sup>1</sup> Tokyo University of Science, Japan                      <sup>2</sup> Nagoya University, Japan

<sup>3</sup> University Technology Malaysia, Malaysia

**PP 16**

**Development a new rolling ball viscometer for CO<sub>2</sub> expanded liquids**

Yoshiyuki Sato<sup>\*</sup>, Hiroki Baba, Chisato Yoneyama, Hiroshi Inomata

Tohoku University, Japan

**PP 17**

**Measurement and correlation of the SO<sub>2</sub>/PEGDME system with activity coefficient models**

Ryoichi Shinozuka<sup>1</sup>, Hiroaki Matsukawa<sup>1</sup>, Yuichiro Shimada<sup>2</sup>, Masakazu Naya<sup>1</sup>, Atsushi Shono<sup>1</sup>, Tomoya Tsuji<sup>3</sup>, Katsuto Otake<sup>\*,1</sup>

<sup>1</sup> Tokyo University of Science, Japan                      <sup>2</sup> Nagoya University, Japan

<sup>3</sup> University Technology Malaysia, Malaysia

**PP 18**

**Continuous reactive crystallization of transparent oxide semiconductor CuAlO<sub>2</sub> in supercritical water**

Takafumi Ueno, Toshiyuki Sato<sup>\*</sup>, Toshihiko Hiaki

Nihon University, Japan

**PP 19**

**Effect of solid co-solvent addition on the glass transition temperature of pharmaceutical excipients under high pressure carbon dioxide**

Shiho Isono<sup>1</sup>, Hiroaki Matsukawa<sup>1</sup>, Yuichiro Shimada<sup>2</sup>, Masakazu Naya<sup>1</sup>, Atsushi Shono<sup>1</sup>, Katsuto Otake<sup>\*,1</sup>

<sup>1</sup> Tokyo University of Science, Japan                      <sup>2</sup> Nagoya University, Japan

**PP 20**

**Vapor pressure and liquid density of 1-butyl-3-methylimidazolium tetrafluoroborate + ammonia mixtures**

Daisuke Tomida<sup>\*</sup>, Yuki Tani, Kun Qiao, Chiaki Yokoyama

Tohoku University, Japan

**PP 21**

**Prediction of solubility and diffusion coefficient of ethylene in propylene copolymers; extrapolation from molten state to rubbery state**

Ayano Kitagishi, Suiri Takizawa, Yoshiyuki Sato\*, Hiroshi Inomata

Tohoku University, Japan

**PP 22**

**Measurement and modeling of infinite dilution activity coefficients for organic compounds in ionic liquid mixtures ([Bmim]Cl<sub>0.50</sub>[Tf<sub>2</sub>N]<sub>0.50</sub>)**

Tomoka Shida, Yuya Hiraga, Takuya Sugiyama, Yoshiyuki Sato, Masaru Watanabe, Richard L. Smith, Jr.\*

Tohoku University, Japan

**PP 23**

**Novel method for Screening hypertension suppressing substance from soybean milk protein**

Ryunosuke Mitani\*, Kenji Mishima, Tanjina Sharmin, Taku Michael Aida, Miyuki Nakamura

Fukuoka University, Japan

**PP 24**

**Screening of phase separation solvent for CO<sub>2</sub> capture by COSMO-RS**

Hiroshi Machida\*, Mana Nakaoka, Tran Viet Bao Khuyen, Koyo Norinaga

Nagoya University, Japan

**PP 25**

**Development of measurement method for diffusion coefficients of nanoparticles by Taylor dispersion method**

Naoya Tajima, Motoyuki Kimura, Daisuke Hojo, Gimyeong Seong, Tsutomu Aida, Akira Yoko, Takaaki Tomai, Tadafumi Adschiri\*

Tohoku University, Japan

**PP 26**

**Dielectric properties of liquefied propane + alcohol mixtures at 303.2 K**

Taka-aki Hoshina\*,<sup>1</sup> Yusuke Koshiba<sup>1</sup>, Masaki Okada<sup>1</sup>, Tomoya Tsuji<sup>2</sup>, Toshihiko Hiaki<sup>1</sup>

<sup>1</sup> Nihon University, Japan

<sup>2</sup> Universiti Teknologi Malaysia, Malaysia

**PP 27**

**Measurement of solubility of TIPS-Pentacene in supercritical carbon dioxide by the determination of saturation states using UV-visible spectroscopy**

Yusuke Shiba, Takanori Kobayashi, Hirohisa Uchida\*

Kanazawa University

**PP 28**

**Measurement of non-ideality of hansen solubility parameter for solvent mixture using physical properties**

Takuya Tamura\*, Hideki Yamamoto

Kansai University, Japan

**PP 29**

**Measurement of isobaric vapor-liquid equilibrium and determination of azeotropic data for binary system 2-methyl-2-ethoxypropane (1) + ethanol (2) at 60.0 kPa and 101.3 kPa**

Wakana Maeda<sup>1</sup>, Toshiyuki Sato<sup>1</sup>, Shigeo Oba<sup>2</sup>, Toshihiko Hiaki<sup>\*,1</sup>

<sup>1</sup> Nihon University, Japan

<sup>2</sup> Applied Thermodynamics and Physical Properties, Co., Ltd., Japan

**PP 30**

**Designing ionic liquids for efficient CO<sub>2</sub> capture: A materials informatics study**

Nahoko Kuroki, Hirotooshi Mori<sup>\*</sup>

Ochanomizu University, Japan

**PP 31**

**Density, viscosity, and CO<sub>2</sub> solubility in deep eutectic solvents composed of quaternary ammonium salt and ethylene glycol**

Ayaka Taniguchi<sup>1</sup>, Daisuke Kodama<sup>1,\*</sup>, Masaki Watanabe<sup>1</sup>, Takashi Makino<sup>2</sup>, Mitsuhiro Kanakubo<sup>2</sup>

<sup>1</sup> Nihon University, Japan

<sup>2</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan

**PP 32**

**CO<sub>2</sub> absorption and physical properties of tributylphosphonium benzotriazolates**

Takashi Makino<sup>\*,1</sup>, Katsuhiko Tsunashima<sup>2</sup>, Mitsuhiro Kanakubo<sup>1</sup>

<sup>1</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan

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**PP 33**

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Katsuhiko Tsunashima<sup>\*1</sup>, Yusuke Tsuchida<sup>2</sup>, Daiki Nomizu<sup>1</sup>, Hirohisa Yamada<sup>3</sup>, Masahiko Matsumiya<sup>2</sup>

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Hiroyuki Tashiro, Ryunosuke Mitani, Shinichi Tokunaga, Masashi Haraguchi, Kenji Mishima<sup>\*</sup>, Tanjina Sharmin, Taku Michael Aida, Miyuki Nakamura

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Kaoru Yamaguchi<sup>\*</sup>, Shimpei Nagata, Hideo Ogawa, Fumio Kimura

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**Amended experimental VLE and LLE data determined from the universal correlations of infinite dilution activity coefficients covering 5000 binaries**

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**Prediction of kinematic viscosities for ternary aqueous systems using modified Eyring and activity coefficient models**

Katsumi Tochigi<sup>\*1</sup>, Hiroyuki Matsuda<sup>1</sup>, Kiyofumi Kurihara<sup>1</sup>, Toshitaka Funazukuri<sup>2</sup>, V. K. Rattan<sup>3</sup>  
<sup>1</sup> Nihon University, Japan                      <sup>2</sup> Chuo University, Japan                      <sup>3</sup> GNA University, India

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Hiroyuki Matsuda<sup>1</sup>, Katsumi Tochigi<sup>\*1</sup>, Kiyofumi Kurihara<sup>1</sup>, Toshitaka Funazukuri<sup>2</sup>, V. K. Rattan<sup>3</sup>  
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Hiroyuki Komatsu, Kenta Maruyama, Kazuaki Yamagiwa, Hideo Tajima<sup>\*</sup>  
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Hiroyuki Komatsu<sup>1</sup>, Takuya Sasagawa<sup>2</sup>, Shinichiro Yamamoto<sup>2</sup>, Yuya Hiraga<sup>2</sup>, Masaki Ota<sup>2</sup>, Takao Tsukada<sup>2</sup>, Richard L. Smith, Jr.<sup>\*2</sup>

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Ding Dengpei, Jun Endo, Hiroyuki Matsuda<sup>\*</sup>, Kiyofumi Kurihara, Katsumi Tochigi  
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Tetsuo Honma<sup>\*1</sup>, Tomohiro Furusato<sup>2</sup>, Akira Hasegawa<sup>1</sup>, Mitsuru Sasaki<sup>3</sup>

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Masashi Haraguchi<sup>\*</sup>, Kenji Mishima, Taku M. Aida, Tanjina Sharmin, Miyuki Nakamura, Hiroyuki Tashiro

Fukuoka University, Japan

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**Supercritical fluid-assisted formation of Pd-Ru bimetallic nanoparticles**

Kiyoshi Matsuyama<sup>\*1</sup>, Noriyuki Tomiyasu<sup>1</sup>, Tetsuya Okuyama<sup>1</sup>, Hiroyuki Muto<sup>2</sup>

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Shinichi Tokunaga, Kenji Mishima\*, Tanjina Sharmin, Taku Michael Aida, Miyuki Nakamura  
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Makoto Akizuki\*, Kohki Ito, Yoshito Oshima

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Peany Houng, Yuya Murakami, Yusuke Shimoyama\*

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Takafumi Aizawa\*

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Chanwit Apibanborirak\*, Makoto Akizaki, Yoshito Oshima

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Masaki Okada\*<sup>1</sup>, Yusuke Koshiba<sup>1</sup>, Taka-aki Hoshina<sup>1</sup>, Tomoya Tsuji<sup>2</sup>, Toshihiko Hiaki<sup>1</sup>

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Kento Ono, Shinichi Tokunaga, Kenji Mishima\*, Tanjina Sharmin, Taku Aida, Miyuki Nakamura  
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Atsuya Shibatani, Daisuke Wada, Yusuke Asakuma\*

University of Hyogo, Japan

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**Special behavior for surface tension of alcohol aqueous solution by microwave irradiation**

Yosuke Shibata<sup>1</sup>, Kenya Tanaka<sup>1</sup>, Yusuke Asakuma\*<sup>1</sup>, Chi Phan<sup>2</sup>

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<sup>2</sup> Curtin University, Australia

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**Flow synthesis of silver nanoparticles and its characterization of optical property**

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Ryosuke Yamashita, Hideki Yamamoto<sup>\*</sup>

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Toru Yamaguchi<sup>\*1,2</sup>, Hidetaka Yamada<sup>3</sup>, Takayuki Fujiwara<sup>2</sup>, Kenji Hori<sup>1</sup>

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**Development of automatic phase separation recognition method by image processing**

Eito Arita, Daiki Nakamura, Makoto Misumi, Hideaki Orii, Kenji Mishima<sup>\*</sup>, Tanjina Sharmin, Taku Micheal Aida, Miyuki Nakamura

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Yusuke Hiejima<sup>\*</sup>, Takumitsu Kida, Naomichi Soma, Koh-hei Nitta

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Jonas Karl Christopher N. Agutaya<sup>\*</sup>, Armando T. Quitain, Mitsuru Sasaki, Tetsuya Kida

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**The infinite dilution partial molar volumes of lipids in supercritical CO<sub>2</sub>**

Chang Yi Kong<sup>\*1</sup>, Toshitaka Funazukuri<sup>2</sup>, Idzumi Okajima<sup>1</sup>, Takeshi Sako<sup>1</sup>

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