

## ACBS2020 Scientific Program

Opening ceremony 10:00-10:10

Oral presentation 10:15-11:15, 14:10-17:30

### Session OA Biomass Material

Chair: Akihiro Hiden (Ehime University, Japan)

- 10:15 OA-1 Production of Biomass Nanofibers Self-sustaining Hydrogels by Hydrothermal Gelation  
Mitsumasa OSADA\*  
(Faculty of Textile Science and Technology, Shinshu University, Japan)
- 10:30 OA-2 Monitoring method for surface stress on boxed-heart timber during high-temperature and low-humidity pretreatment  
Tomoya MURANO<sup>a\*</sup>, Noboru FUJIMOTO<sup>b</sup>  
(<sup>a</sup> Forestry and Forest Products Research Institute (FFPRI), National Research and Development Agency Forest Research and Management Organization, Japan,  
<sup>b</sup> Graduate School of Bioresource and Bioenvironment, Kyushu University, Japan)
- 10:45 OA-3 Effect of Crosslinking Temperature on Wood-HPMC Composite with Citric Acid  
Xiangyu TAO and Hiroshi NONAKA\*  
(Graduate School of Bioresources, Mie University, Japan)
- 11:00 OA-4 Ketone effect on condensation's suppression of woody biomass liquefaction  
Nuerjiamali. TUOHEDI, Qingyue WANG\*, Xinyan DENG  
(Graduate School of Science and Engineering, Saitama University, Japan)

(Break 11:15-11:25)

### Plenary lecture

Chair: Adjusting

- 11:25 PL1 Enhancing Climate Adaptation Capacity of a 4.9 MW Biomass Power Plant through the Concept of Energy Resilience  
Nuwong CHOLLACCOOP  
(National Energy Technology Center (ENTEC), National Science and Technology Development Agency (NSTDA), Ministry of Higher Education, Science, Research and Innovation (MHESI), Thailand)

(Lunch 12:10-13:00)

(Poster presentation 13:00-14:00)

The core time of odd number poster 13:00-13:30; even number 13:30-14:00

### Session OB Liquid Fuel

Chair: Shimpei Aikawa (Japan International Research Center for Agricultural Sciences, Japan)

- 14:10 OB-1 Catalytic hydrodeoxygenation of rapeseed oil with the help of *in-situ* hydrogen production  
Minato KOJIMA<sup>a</sup>, Katsuyuki MORI<sup>a</sup>, Shin-ya YAMANAKA<sup>b</sup>, Masato KOUZU<sup>a\*</sup>  
(<sup>a</sup> Department of Chemistry and Energy Engineering, Tokyo City University, Japan, <sup>b</sup> Applied Chemistry Research Unit, Muroran Institute of Technology, Japan)
- 14:25 OB-2 Winterization of shea butter biodiesel fuel using nonionic surfactant  
Simon Ubengi El. BAGINI, Youta WATANABE, Kosuke KAWAI, Hideo TAJIMA\*  
(Graduate School of Science and Technology, Niigata University, Japan)
- 14:40 OB-3 Lipase-catalyzed ethanolysis for biodiesel production of untreated palm oil mill effluent  
Nova RACHMADONA<sup>a</sup>, Jerome AMOAH<sup>b</sup>, Emmanuel QUAYSON<sup>a</sup>, Shinji HAMA<sup>c</sup>, Ayumi YOSHIDA<sup>c</sup>, Akihiko KONDO<sup>b</sup>, Chiaki OGINO<sup>a,\*</sup>  
(<sup>a</sup> Department of Chemical Science and Engineering, Graduate School of Engineering, Kobe University, Japan, <sup>b</sup> Graduate School of Science, Technology and Innovation, Kobe University, Japan, <sup>c</sup> Bioenergy Corporation, Research and Development Laboratory, Japan)
- 14:55 OB-4 Effect of Reaction Temperature on Biocrude Yield from Hydrothermal Liquefaction of Rice Husk  
Mohammad Kaneshka PAKZAD<sup>a,b</sup>, Tofael AHAMED<sup>c</sup>, Ryozo NOGUCHI<sup>c,\*</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan <sup>b</sup> Ministry of Agriculture, Irrigation, and Livestock, Directorate of Agricultural Mechanization, Afghanistan, <sup>c</sup> Faculty of Life and Environmental Sciences, University of Tsukuba, Ibaraki, Japan)

(Break 15:10-15:20)

### Session OC Gas Fuel

Chair: Yoshimitsu Uemura (Universiti Teknologi PETRONAS, Malaysia, previously)

- 15:20 OC-1 Possibility of recycling methanol used for potassium removal from bamboo  
Fumika KAMAGATA<sup>a</sup>, Ken-ichiro TANOUE<sup>b</sup>, Yukihiro MATSUMURA<sup>c\*</sup>  
(<sup>a</sup> Faculty of Engineering, Hiroshima University, Japan, <sup>b</sup> Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Japan, <sup>c</sup> Graduate School of Advanced Science and Engineering, Hiroshima University, Japan)
- 15:35 OC-2 A performance analysis of hydrogen discharge rate from metal hydride cartridge for FC-bike  
Chiharu MISAKI<sup>a</sup>, Daisuke HARA<sup>a\*</sup>, Noboru KATAYAMA<sup>b</sup>, Kiyoshi DOWAKI<sup>a</sup>  
(<sup>a</sup> Department of Industrial Administration, Graduate School of Science and Technology, Tokyo University of Science, <sup>b</sup> Department of Electrical Engineering, Graduate School of Science and Technology, Tokyo University of Science)
- 15:50 OC-3 Environmental performance of integrated fermentation SOFC fueled by bio-syngas

containing H<sub>2</sub>S

Hiromu SUGIHARA\*, Kento TORII, Kiyoshi DOWAKI

(Department of Industrial Administration, Graduate School of Science and Technology, Tokyo University of Science, Japan)

- 16:05 OC-4 Rapid microwave-assisted pyrolysis of lignocellulose by the solid-state microwave generator  
Shuntaro TSUBAKI<sup>ab\*</sup>, Masateru NISHIOKA<sup>c</sup>, Noriko OHARA<sup>a</sup>, Yuji WADA<sup>d</sup>  
(<sup>a</sup> School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan, <sup>b</sup> PRESTO, Japan Science and Technology Agency (JST), Japan, <sup>c</sup> National Institute of Advanced Industrial Science and Technology, Japan, <sup>d</sup> Institute of Innovative Research, Tokyo Institute of Technology, Japan)

(Break 16:20-16:30)

### Session OD Sustainability Assessment

Chair: Takanobu Aikawa (Renewable Energy Institute, Japan)

- 16:30 OD-1 CO<sub>2</sub> emissions and economics when producing wood carbonized pellets overseas and importing to Japan  
Masami ASHIZAWA<sup>a,c\*</sup>, Maromu OTAKA<sup>b</sup>, Hiromi YAMAMOTO<sup>a</sup>, Atsushi AKISAWA<sup>c</sup>  
(<sup>a</sup> Energy Innovation Center, CRIEPI, Japan, <sup>b</sup> Energy Engineering Research Laboratory, CRIEPI, Japan, <sup>c</sup> Institute of Engineering, Tokyo University of Agriculture and Technology, Japan)
- 16:45 OD-2 Coffee Biomass Utilization on Direct Composting in Smallholder Coffee Plantation in Indonesia: Environmental and Economic Evaluation  
Devi Maulida RAHMAH<sup>a</sup>, Devitra Saka RANI<sup>a</sup>, Agusta Samodra PUTRA<sup>a</sup>, Ryozo NOGUCHI<sup>b</sup>, Tofael AHAMED<sup>b</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Science, University of Tsukuba, <sup>b</sup> Faculty of Life and Environmental Sciences, University of Tsukuba)
- 17:00 OD-3 Process design and economic evaluation of thermal storage system using surplus power by renewable energy integrated with biomass power plant  
Ryo MURAKOSHI, Chihiro FUSHIMI\*  
(Department of Chemical Engineering, Tokyo University of Agriculture and Technology, Japan)
- 17:15 OD-4 The Selection of LCA Parameters for Energy Production from Palm Oil  
Riaru ISHIZAKI<sup>a</sup>, Muhammad Ansori NASTION<sup>b</sup>, Ayu WULANDARI<sup>b</sup>, Tofael AHAMED<sup>c</sup>, Ryozo NOGUCHI<sup>c\*</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan, <sup>b</sup> Indonesian Oil Palm Research Institute (IOPRI), Indonesia, <sup>c</sup> Faculty of Life and Environmental Sciences, University of Tsukuba, Japan)

(Break 17:30-17:45)

Closing ceremony 17:45-18:00

Poster presentation 13:00-14:00

- P-1 Biochar Production by Co-pyrolysis of Biomass and Poly (vinyl chloride) in the Presence of Glycerol  
Katsuki KUSAKABE<sup>a</sup>, Thamisha STEVEN<sup>b</sup>, Anna NAGAI<sup>a</sup>, Yoshimitsu UEMURA<sup>c,d\*</sup>, Kazutoshi IKENAGA<sup>a</sup>  
(<sup>a</sup> Department of Nanoscience, Sojo University, Japan, <sup>b</sup> Department of Fundamental & Applied Science, Universiti Teknologi of PETRONAS, Malaysia, <sup>c</sup> NPO Kuramae Bioenergy, Japan, <sup>d</sup> HICoE–Center for Biofuel and Biochemical Research, Institute of Self-Sustainable Building, Universiti Teknologi PETRONAS, Malaysia)
- P-2 Analyzing main compounds of tar from a small downdraft gasifier under various experimental conditions  
Zheng ZONG<sup>a</sup>, Hiroshi ENOMOTO<sup>a</sup>, Zhaohe ZHOU<sup>a</sup>, Kazushi FUKADU<sup>a</sup>, Shota IWAI<sup>a</sup>, Ryo NAKAGAWA<sup>a</sup>, Reiji NODA<sup>b</sup>  
(<sup>a</sup> Combustion Laboratory, Kanazawa University, Japan, <sup>b</sup> Energy Process Laboratory, Gunma University, Japan)
- P-3 Utilization of biomass from agriculture residue in Thailand  
Chayasak VONGVASANA, Hiroshi ENOMOTO  
(Division of Mechanical Science and Engineering, Kanazawa University, Japan)
- P-4 Metabolic Engineering of Industrially Robust *Saccharomyces cerevisiae* BTCC3 for Lactic Acid Bioproduction  
Radityo PANGESTU<sup>a,b\*</sup>, Prihardi KAHAR<sup>a</sup>, Lutfi Nia KHOLIDA<sup>b</sup>, Ahmad THONTOWI<sup>b</sup>, YOPI<sup>b,c</sup>, Chiaki OGINO<sup>a</sup>, Bambang PRASETYA<sup>c</sup>, Akihiko KONDO<sup>a,d</sup>  
(<sup>a</sup> Graduate School of Engineering, Kobe University, Japan, <sup>b</sup> Research Center for Biotechnology, Indonesian Institute of Sciences, Indonesia, <sup>c</sup> National Standardization Agency of Indonesia, Indonesia, <sup>d</sup> Graduate School of Science, Technology, and Innovation, Kobe University, Japan)
- P-5 Design of fatty acid extraction process from microalgae biomass with flash hydrolysis  
Kengo FUJII, Chihiro FUSHIMI\*  
(Department of Chemical Engineering, Tokyo University of Agriculture and Technology)
- P-6 Japanese biomass sustainability policy update: focusing on the scope of LCA  
Takanobu AIKAWA  
(Renewable Energy Institute, Japan)
- P-7 Estimating Carbon Dioxide Emission from Cooking Biomass for Diet-intake Consumption in Cambodia  
Rathna HOR<sup>a,b</sup>, Tofael AHAMED<sup>c</sup>, Ryozo NOGUCHI<sup>c\*</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, <sup>b</sup> Faculty of Agro-Industry, Royal University of Agriculture, Cambodia, <sup>c</sup> Faculty of Life and Environmental Sciences, University of Tsukuba,

Tsukuba, Ibaraki, Japan)

- P-8 A LCIA of agricultural products for the quality improvement under the cold environment  
Shun KATANIWA\*, Akihiro OKI, Kiyoshi DOWAKI  
(Department of Industrial Administration, Tokyo University of Science, Japan)
- P-9 Impact of biomass feedstock input schedule for biogas power plants on plant operation and gas production  
Yuta INOUE, Tomoki OSHIMA, Aya ISHIGAKI\*  
(Faculty of Science and Engineering, Tokyo University of Science, Japan)
- P-10 Efficient utilization of torrefied woody biomass in small scale  
Takahiro YOSHIDA<sup>a</sup>, Volker LENZ<sup>b</sup>  
(<sup>a</sup> Forestry and Forest Products Research Institute (FFPRI), National Research and Development Agency Forest Research and Management Organization, Japan, <sup>b</sup> German Biomass Research Center (DBFZ), Germany)
- P-11 A Study on Oil Palm Biomass Residue Availability for Producing Bioethanol, Compost, and Electricity in Indonesia by Considering Global Warming Potential  
Arief Ameir Rahman SETIAWAN<sup>a,c</sup>, Agusta Samodra PUTRA<sup>a,d</sup>, Tofael AHAMED<sup>b</sup>, Ryozi NOGUCHI<sup>b\*</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan, <sup>b</sup> Faculty of Life and Environmental Sciences, University of Tsukuba, <sup>c</sup> Research Center for Policy and Management of Science, Technology and Innovation, Indonesian Institute of Sciences, Indonesia, <sup>d</sup> Research Center for Chemistry, Indonesian Institute of Sciences, Indonesia)
- P-12 Sustainability Evaluation for Environmental and Nutritional Aspects of Animal Meat Substitute Using LCA  
Yinzhu JIN<sup>a</sup>, Moeka TANAKA<sup>b</sup>, Tofael AHAMED<sup>c</sup>, Ryozi NOGUCHI<sup>c\*</sup>  
(<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan, <sup>b</sup> College of Agro-biological Resource Sciences, University of Tsukuba, Japan, <sup>c</sup> Faculty of Life and Environmental Sciences, University of Tsukuba, Japan)
- P-13 Development of bioplastic production technology from crop wastes in Southeast Asia  
Takamitsu ARAI<sup>a\*</sup>, Kumar SUDESH<sup>b</sup>, Shimpei AIKAWA<sup>a</sup>, Toshiaki KONDO<sup>a</sup>, Akihiko KOSUGI<sup>a</sup>  
(<sup>a</sup> Japan International Research Center for Agricultural Sciences, Japan, <sup>b</sup> School of Biological Sciences, Universiti Sain Malaysia)
- P-14 Removal of nitrogen from chicken manure using hydrothermal pretreatment  
Yuito SUGANUMA<sup>a</sup>, Takayuki ICHIKAWA<sup>b</sup>, Wookyung KIM<sup>b</sup>, Yutaka NAKASHIMADA<sup>c</sup>, Keiya NISHIDA<sup>b</sup>, Yukihiko MATSUMURA<sup>b\*</sup>  
(<sup>a</sup> Faculty of Engineering, Hiroshima University, Japan, <sup>a</sup> Graduate School of Advanced Science and Engineering, Hiroshima University, Japan, <sup>a</sup> Graduate School of Integrated Sciences for Life, Hiroshima University, Japan)

P-15 Mineralization characteristics of the main organic phosphorus in sewage sludge  
Shinnosuke MIYASAKO, Yukihiro MATSUMURA\*  
(Graduate School of Advanced Science and Engineering, Hiroshima University,  
Japan)