Appendix III – Oral program

14th Jun 2021

09:00-10:35 — **Welcome and Plenary Session 1**
Olaf Kruse

09:05-09:35 [PLE01]
Early US-Japan collaborations in algal biofuels research: Continuities and perspectives
Kimi Coaldrake
Pan Pacific Technologies, Australia

09:35-10:05 [PLE02]
Applied algae research at the US Department of Energy
Daniel B. Fishman, Devinn Lambert, Christy Sterner, Nichole Fitzgerald
U.S. Department of Energy, USA

10:05-10:35 [PLE03]
Bio-catalytically driven carbon-based fuel production with microalgae: The PHOTOFUEL consortium
Olaf Kruse[1], Tiago Guerra[2]
[1]*Bielefeld University, Germany.* [2]*A4F,, Portugal*

10:35-11:05 — **Break**

11:05-12:35 — **Session 1A - Life Cycle and Technoeconomic Assessments**
Yunhua Zhu

11:05-11:25 [INV01]
Preliminary economic analysis of microalgae conversion to biofuels and biochemical via Sequential Hydrothermal Liquefaction (SEQHTL) and Bioprocessing
Y. Zhu, S. B. Jones, A. J. Schmidt, J. R. Collett, L. J. Snowden-Swan, D. B. Anderson
Pacific Northwest National Laboratory, USA

11:25-11:40 [O1A.01]
Geographical and temporal assessment of the water requirements and temperature tolerances for large-scale cultivation of microalgae
David Quiroz[1], John McGowen[2], Jason C. Quinn[1]
[1]*Colorado State University, USA.* [2]*Arizona State University, USA*

11:40-11:55 [O1A.02]
Probabilistic techno-economic analysis and life cycle assessment of biofuel products from cyanobacteria
Audrey Beattie[1], Dr. Al Darzins[2], Dr. John McGowen[3], Dr. David Nielsen[3], Dr. Steven C. Holland[3], Dr. Shuqin Li[3], Dr. Wim Vermaas[3], Dr. Jason C. Quinn[1]
[1]*Colorado State University, USA.* [2]*Nano Gas Technologies, USA.* [3]*Arizona State University, USA*

11:55-12:10 [O1A.03]
Microalgae to biofuels through hydrothermal liquefaction: open-source techno-economic analysis and life cycle assessment
Peter Chen, Dr. Jason Quinn
Colorado State University, USA

12:10-12:25 [O1A.04]
Techno-economic assessment of cyanobacterial PHB bioplastic production
Mr Shawn Price
University of Technology Sydney, Australia

Session 1B - Algal Biology - Molecular Engineering and Synthetic Biology of Algae for Biofuels and High Value Products
Olaf Kruse

11:05-11:25 [INV02]
Algae as a synbio enhanced sustainable production platform
Prof. Kyle Lauersen
King Abdullah University of Science and Technology (KAUST), Saudi Arabia

11:25-11:40 [O1B.01]
Doubling biomass productivity in algae and plants through enhanced photosynthetic performance
Dr. Richard Sayre
New Mexico Consortium, USA. Richard Sayre Consulting, USA

11:40-11:55 [O1B.02]
Innovative Green Cell Factories – Microalgae as promising heterologous hosts for sustainable production of high-value terpenoids
Alexander Einhaus, Dr. Thomas Baier, Prof. Dr. Olaf Kruse
Bielefeld University, Germany

11:55-12:10 [O1B.03]
Recombinant protein stability in cyanobacteria
dr Nico Betterle[1], dr Xianan Zhang[2], dr Diego Hidalgo-Martinez[3], prof Anastasios Melis[3]
[1]*University of Verona, Italy.* [2]*Capital Medical University, China.* [3]*University of California Berkeley, USA*

12:10-12:25 [O1B.04]
Evaluation of the Role of Non-Intuitive Genes in Cyanobacterial Polyhydroxybutyrate Biosynthesis
Nilusha Sudasinghe, Raul Gonzalez, Lindsey Jacobs, Shounak Banerjee, Thomas Yoshida, Ghanshyam Pilania, James Theiler, Shawn Starkenburg, Taraka Dale, Babetta Marrone
Los Alamos National Laboratory, USA

12:35-13:35 — **Break**

13:35-15:00 — **Session 2A - Bioreactor Design, Engineering and Control and New Technologies in Support of Algal Research**
Kyle Laursen

13:35-13:50 [O2A.01]
Spectral light distribution in an annular photobioreactor for the cultivation of nannochloropsis oculata

Session 2B - Algal Harvesting and Extraction Systems
Babs Marrone

13:35-13:50 [O2B.01]
Milking microalgae using a 3D printed jet mixer
Fateme Mirakhorli, Dr Christopher Hall, A/Prof Majid Ebrahimi Warkiani, Prof Peter Ralph

PHD student Marinela Gjestila[1], Dr Paolo Bernardoni[1], PHD student Giulio Mangherini[1], PHD student Alfredo Andreoli[1], Dr Micol Boschetti[1], Dr Silvio Fugattini[2], Dr Gimena Arganaraz[3], Prof. Donato Vincenzi[1]
[1]*University of Ferrara, Italy.* [2]*Istituto Italiano di Tecnologia, Italy.* [3]*BioSyntex S.r.l., Italy*

13:50-14:05 [O2A.02]
PRIAM : Controlled and intensified production of microalgae for high value products
Charlène THOBIE[1], Laure PERUCHON[1], Cédric BROCHIER[1], Jérémy PRUVOST[2]
[1]*ALGOLIGHT, France.* [2]*Laboratoire GEPEA UMR CNRS 6144, France*

14:05-14:20 [O2A.03]
Amphiphilic silicone elastomer-based coatings for fouling inhibition in photobioreactors
Dr Li Wang, Dr Rob Onderwater
Materia Nova ASBL, Belgium

14:20-14:35 [O2A.04]
On the complementary between Mass Spectrometry and NMR spectroscopy for microalgae chemical profiling
Gaela Cauchie[1,2], Pr Jean-Hugues Renault[1], Pr Pascal Gerbaux[2]
[1]*Université de Reims Champagne Ardenne, France.* [2]*Université de Mons, Belgium*

14:35-14:50 [O2A.05]
Managing pests in algal ponds: identification and detection of novel pests using proximity ligation (Hi-C) metagenome assembly
Blake Hovde[1], Thomas Biondi[1], Steve Eacker[2], Ivan Liachko[2], Ellen Denning[1], Shawn Starkenburg[1], Alina Corcoran[3]
[1]*Los Alamos National Lab, USA.* [2]*Phase Genomics, USA.* [3]*New Mexico State University, USA*

University of Technology Sydney, Australia

13:50-14:05 [O2B.02]
Ohmic heating in *Cyanobium* sp. bioprocessing - extraction of carotenoids and phycobiliproteins
Fernando Pagels[1,2], Ricardo N. Pereira[2], Helena M. Amaro[1], Vitor Vasconcelos[1,3], A. Catarina Guedes[1], Antonio A. Vicente[2]
[1]*CIIMAR – Interdisciplinary Centre of Marine and Environmental Research, University of Porto, Portugal.* [2]*CEB – Centre of Biological Engineering, University of Minho, Portugal.* [3]*FCUP – Faculty of Science, University of Porto, Portugal*

14:05-14:20 [O2B.03]
Effect of pH and calcium concentration on sedimentation patterns of microalgae
Yuanjun Xia[1], Dr. Masatoshi Kishi[1], Dr. Youta Sugai[2], Prof. Tatsuki Toda[1]
[1]*Soka University, Japan.* [2]*Tokyo University, Japan*

14:20-14:35 [O2B.04]
Understanding chitosan-induced flocculation mechanism in *C. vulgaris* using atomic force microscopy (AFM)
Irem Demir[1,2], Jonas Blockx[3,4], Etienne Dague[2], Pascal Guiraud[5,6], Koenraad Muylaert[4], Cecile Formosa-Dague[1,6]
[1]*Toulouse Biotechnology Institute,TBI, INSA,INRAE, France.* [2]*Laboratory for Analysis and Architecture of Systems,LAAS,CNRS, France.* [3]*Sustainable Materials Laboratory, KU LeuvenKU Leuven, Belgium.* [4]*Laboratory for Aquatic Biology, KU Leuven,, Belgium.* [5]*Toulouse Biotechnology Institute ,INSA, France.* [6]*Fédération de recherche FERMAT, CNRS, France*

14:35-14:50 [O2B.05]
Biphasic lipid extraction from unruptured diatom cells – a new mechanism for algae lipid extraction driven by wall structure and interfacial behaviour
Ms. Bhagya Yatipanthalawa, Dr. Wu Li, Dr. David Hill, Mr. Zlatan Trifunovic, Prof. Muthupandian Ashokkumar, Prof. Peter Scales, A/Prof. Gregory Martin
The University of Melbourne, Australia

15:00-16:00 **Break**

16:00-17:25

Session 3A - Algal Cultivation – Phototrophic Systems in Open Ponds

José A. Olivares

16:00-16:15 [O3A.01]
Early detection of pond-crashes using predictive modeling on microbial ecology in industrial ponds
Dr Kunal Poorey, Deanna Curtis, Pamela Lane, Dr Todd Lane
Sandia National Labs, USA

16:15-16:30 [O3A.02]
On-site pilot scale cultivation of microalgae using industrial energetic-laden wastewater for bioenergy production
PhD. Juliana Abraham[1], Tobi Abimbola[1], Professor Abhishek Roychowdury[2], Professor Tsan-Liang Su[1], Professor Christos Christodoulatos[1], Professor Agamemnon Koutsospyros[1], Benjamin Smolinsky[3], Professor Adeniyi Lawal[1], PhD. Washignton Braida[1]
[1]*Stevens Institute of Technology, USA.* [2]*Navajo Technical University, USA.* [3]*Picatinny Arsenal, USA*

16:30-16:45 [O3A.03]
Multi-scale modeling of intensive macroalgae cultivation and marine nitrogen sequestration
Mr Meiron Zollmann[1], Prof. Alexander Liberzon[1], Prof. Boris Rubinsky[2], Prof. Alexander Golberg[1]
[1]*Tel Aviv University, Israel.* [2]*Berkeley UC, USA*

16:45-17:00 [O3A.04]
A novel approach for biomass production by controlled switching between unicellular and multicellular growth modes in marine macroalgae
Yutaro Kinoshita[1,2], Ph.D. Kouki Tanaka[1], Ph.D. Hirofumi Yamamoto[3], Ph.D. Yoichi Sato[2], Ph.D. Tetsuya Sakurai[1], Ph.D. Tomohito Yamasaki[1], Ph.D. Masanori Hiraoka[1]
[1]*Kochi University, Japan.* [2]*Riken Food Co.,Ltd., Japan.* [3]*Tokushima Bunri University, Japan*

17:00-17:15 [O3A.05]
Annual production of *Scenedesmus almeriensis* in pilot-scale thin-layer cascade and raceway bioreactors
Ms Ainoa Morillas-España, Dr Tomas Lafarga, Dr Cintia Gómez-Serrano, Prof Gabriel Acién, Dr Cynthia Victoria González-López

Session 3B - Algal Cultivation - Heterotrophic Systems, including utilization of waste waters for algal production

Carlos Quiroz

16:00-16:15 [O3B.01]
Cut the switchgrass: examining how the utilization of plant-derived substrates by *Scenedesmus obliquus* benefits algal productivity and biochemical composition
Jenna Schambach[1], Joseph Msanne[1], Shawn Starkenburg[1], Amanda Barry[2]
[1]*Los Alamos National Laboratory, USA.* [2]*Sandia National Laboratories, USA*

16:15-16:30 [O3B.02]
Phosphorous recovery and recycling from wastewater with amorphous calcium silicate hydrates for cultivation of the carbohydrate-rich microalgae *Pseudoneochloris* sp. NKY372003
Kentaro Waga[1], Tsuyoshi Aketo[2], Yusuke Yabu[1], Yoshiaki Maeda[1], Tomoko Yoshino[2], Akiko Hanada[2], Hiroyuki Takano[2], Tsuyoshi Tanaka[1]
[1]*Tokyo University of Agriculture and Technology, Japan.* [2]*Taiheiyo Cement Corporation, Japan*

16:30-16:45 [O3B.03]
Microalgae mass cultivation using undiluted liquid digestate treated with biogas by simultaneous desulfurization–nitrification
Dr. Mutsumi Sekine, Dr. Masatoshi Kishi, Prof. Tatsuki Toda
Soka University, Japan

16:45-17:00 [O3B.04]
Ecological Engineering of Photoorganoheterotrophic Microalgal Mixed Cultures to Valorise Cheese Whey
MSc./Ms. Maria Paula Giulianetti de Almeida[1,2], MSc/Ms. Camille Mondini[2], MSc./Mr; Saman Khayat[2], Prof. Dr./ Mr. Gustavo Mockaitis[1], Ass. Prof. Dr./ Mr. David Gregory Weissbrodt[2]
[1]*University of Campinas, Brazil.* [2]*Delft University of Teechnology, The Netherlands*

17:00-17:15 [O3B.05]
**Algal based bioremediation of landfill leachate **
Dr Thinesh Selvaratnam, Ms Cymone Houston, Ms Melissa Tan
Lamar University, USA

	University of Almería, Spain	
17:25-18:25	**Poster Session 1**	

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	Column 1	Column 2
05:00-06:00	**Poster Session 2**	
06:00-08:00		
08:00-09:05	**Welcome and Plenary Session 2** José A. Olivares **08:05-08:35 [PLE04]** **Interaction between Haematococcus pluvialis and the fungal pathogen Paraphysoderma sedebokerense: From fundamental research to crop protection** D. Han *Chinese Academy of Sciences, China* **08:35-09:05 [PLE05]** **Algatec eco business park: Towards Europe's largest microalgae biomass production and biorefining facility in integration with neighboring industrial activities** T. Guerra, E. Santos, L. Costa, M. Gil Antunes, V. Verdelho, N. Coelho, L. Vieira da Silva *A4F – Algae for Future, Portugal*	
09:05-09:35	**Break**	
09:35-11:05	**Session 4A - Algal Biotechnology - Metabolic Regulation of Algae for Biofuels and High Value Products** Patrick Jones **09:35-09:55 [INV03]** **Engineering cyanobacteria for bioproduction of chemicals** I. Yunus, P. Sattayawat, P. R. Jones *Imperial College London, UK* **09:55-10:10 [O4A.01]** **Phototrophic production of polyamine platform chemicals in the green microalga *C. reinhardtii*** Robert Freudenberg, Dr. Thomas Baier, Dr. Lutz Wobbe, Prof. Dr. Olaf Kruse *Bielefeld University, Center for Biotechnology (CeBiTec), Germany* **10:10-10:25 [O4A.02]** **Chlamydomonas CHT7 Represses a Subset of Genes Controlling the Cell Cycle** Yang-Tsung Lin[1], Tomomi Takeuchi[1], Brian Youk[1], James Umen[2], Barbara B. Sears[1], Christoph Benning[1] *[1]Michigan State University, USA. [2]Donald Danforth Plant Science Center, USA* **10:25-10:40 [O4A.03]** **Extracellular DNA as trigger of stress responses in the microalgae *Neochloris oleobundans*** Dr Elizabeth Quintana-Rodriguez[1], Dr Ivette Cornejo-Corona[2,1], Dr Domancar Orona-Tamayo[1], Dr Varinia Lopez-Ramirez[3] *[1]Centro de Innovación Aplicada en Tecnologías Competitivas, Mexico. [2]Texas A&M University, USA. [3]Tecnológico Nacional de México/ITS de Irapuato, Mexico* **10:40-10:55 [O4A.04]** **Microalgae exposure to phosphate deficiency for enhanced nutrient uptake and biochemical value improvement** Aigars Lavrinovičs[1,2], prof. Linda Mežule[1], prof. Tālis Juhna[1] *[1]Riga Technical University, Latvia. [2]Institute for Environmental Solutions, Latvia*	**Session 4B - Engineering of Biorefinery Systems, Technologies, End-to-end Integration, Thermal Catalytic and Non-Catalytic, and Enzymatic systems** Antonio Soria-Verdugo **09:35-09:55 [INV04]** **Pyrolysis of microalgae in a bubbling fluidized bed** E. Cano-Pleite, M. Rubio-Rubio, N. García-Hernando, A. Soria-Verdugo *University Carlos III of Madrid, Spain* **09:55-10:10 [O4B.01]** **Biochar production from native mixed algal strains cultivated in greywater through microwave pyrolysis ** Mr Mohit Aggarwal, Dr Neelancherry Remya *Indian Institute of Technology Bhubaneswar, India* **10:10-10:25 [O4B.02]** **Nutrient recovery and fuel precursor production from extracted algae residues using mild oxidative treatment** Jacob Kruger[1], Tobias Hull[1], Kameron Adams[2], Earl Christensen[1], Tao Dong[1], Nick Nagle[1], Philip Pienkos[1,3] *[1]National Renewable Energy Laboratory, USA. [2]Old Dominion University, USA. [3]Polaris Renewables, USA* **10:25-10:40 [O4B.03]** **Turbulence characterization of algae and viscous cyanobacterial polycultures in open-channel raceways: Implications in the design of cultivation systems** Dr. Carlos Quiroz-Arita *Sandia National Laboratories, USA* **10:40-10:55 [O4B.04]** **Reducing the cost of renewable fuel production using co-hydrothermal liquefaction of microalgae and crude glycerol** Mr. Jonah M. Greene[1], Zheng Cui[2], Dr. Feng Cheng[3], Dr. Catherine E. Brewer[2], Dr. Umakanta Jena[2], Dr. Jason C. Quinn[4] *[1]Colorado State University, USA. [2]New Mexico State University, USA. [3]Worcestar Polytechnic Institute, USA. [4]Colorado State Univsersity, USA*
11:05-12:05	**Break**	
12:05-13:35	**Session 5A - Bioproducts from Algae Including High-Value Products and Co-products** Bradley Wahlen **12:05-12:25 [INV05]** **The effect of treatment on stability and microbial community composition during short-term (24 hrs) storage of post-harvest microalgae biomass** B. Wahlen	**Session 5B - New Technologies in Support of Algal Research - Areas of Separation, Refining, Detection, Characterization and Analysis** Jeri Timlin **12:05-12:25 [INV06]** **Direct air capture of CO2 for supply to algae cultivation**

Idaho National Laboratory, USA

12:25-12:40 [O5A.01]
The SABANA project: Demonstrating the application of microalgae in agriculture and aquaculture
Prof Gabriel Acién, Prof Jose María Fernández-Sevilla, Dr Cintia Gómez-Serrano, Dr Tomas Lafarga, Prof Emilio Molina-Grima
University of Almería, Spain

12:40-12:55 [O5A.02]
Recombinant production of a functional SARS-CoV-2 spike receptor binding domain in the green algae *Chlamydomonas reinhardtii*
Anthony Berndt, Tressa Smalley, Bijie Ren, Amr Badary, Ashley Sproles, Francis Fields, Yasin Torres-Tiji, Vanessa Heredia, Stephen Mayfield
University of California, San Diego, USA

12:55-13:10 [O5A.03]
Improving fucoxanthin and docosahexaenoic acid production in *Tisochrysis lutea*
Dr. Fengzheng Gao[1], Dr. Iago Teles (Cabanelas, ITD)[1], Prof. Rene Wijffels[1,2], Prof. Maria Barbosa[1]
[1]*Wageningen University, The Netherlands.* [2]*Nord University, Norway*

13:10-13:25 [O5A.04]
Dual COX/LOX inhibition and Anti-inflammatory activity of fucoidan isolated from Sargassum wightii
Mrs Veerabhuvaneshwari Veerichetty, Dr Saraswathy Nachimuthu
Kumaraguru College of Technology, India

Dr. Ronald Chance[1], Dr. Eric Ping[1], Dr. Miles Sakwa-Novak[1], Dr. Yanhui Yuan[1], Professor Christopher Jones[2], Professor Valerie Thomas[2], Dr. Eric Tan[3], Dr. John Benemann[4], Dr. Michael Huesemann[5], Dr. Charles O'Kelly[6]
[1]*Global Thermostat, USA.* [2]*Georgia Institute of Technology, USA.* [3]*National Renewable Energy Lab, USA.* [4]*Micro-Bio Engineering, USA.* [5]*Pacific Northwest National Lab, USA.* [6]*Cyanotech, USA*

12:25-12:40 [O5B.01]
Cyanobacteria population monitoring in PHA production photo-bioreactor for process optimisation
Mr. Francisco Rodríguez Lorenzo[1], Mr. Miguel Placer Lorenzo[1], Mrs. Estel Rueda Hernández[2], Ph.D Ruben Díez Montero[2], Mrs. Luz Patricia Herrero Castilla[1], Ph.D Juan Antonio Álvarez Rodríguez[1], Prof. Ph.D Joan García Serrano[2]
[1]*AIMEN Technological Center, Spain.* [2]*Universitat Politècnica de Catalunya (UPC), Spain*

12:40-12:55 [O5B.02]
Algal Applications of the Burge Environmental MiProbe
Evan Taylor[1], David Baker[1], Deyang Qi[2], Harrison Meyer[2], Dr. Russel Burge[1], Duane Barbano[2], Dr. John McGowen[2,3], Dr. Scott Burge[1], Assistant Professor Taylor L. Weiss[2,3]
[1]*Burge Environmental, USA.* [2]*Arizona State University, USA.* [3]*Arizona Center for Algal Technology and Innovation, USA*

12:55-13:10 [O5B.03]
Monitoring of irreversible electropermeabilisation of a green seaweed Ulva sp. by Pulse Amplitude Modulation fluorometry.
Arthur Robin, Meiron Zollmann, Prof. Alexander Golberg
Tel Aviv University, Israel

13:10-13:25 [O5B.04]
Multi-omics pipeline for characterizing novel biofuel strains
Sara Calhoun[1], Tisza Bell[2], Lukas Dahlin[3], Colin Kruse[4], Bishoy Kamel[1], Trent Northen[1], Michael Huesemann[5], Michael Guarnieri[3], Shawn Starkenburg[4], Igor Grigoriev[1,6]
[1]*US Department of Energy Joint Genome Institute, Lawrence Berkeley National Laboratory, USA.* [2]*University of Montana, USA.* [3]*National Bioenergy Center, National Renewable Energy Laboratory, USA.* [4]*Los Alamos National Laboratory, USA.* [5]*Pacific Northwest National Laboratory, USA.* [6]*University of California Berkeley, USA*

13:35-14:05 **Break**

14:05-15:30

Session 6A - Bioproducts from Algae Including High-Value Products and Co-products
Carlos Quiroz

14:05-14:20 [O6A.01]
Algae biofertilizers promote sustainable food production and a circular nutrient economy – An integrated empirical-modeling study
Miss Zeenat Rupawalla, Dr Nicole Robinson, Professor Susanne Schmidt, Miss Sijie Li, Miss Selina Carruthers, Miss Elodie Buisset, Dr John Roles, Professor Ben Hankamer, Dr Juliane Wolf
University of Queensland, Australia

14:20-14:35 [O6A.02]
Extraction and identification of added-value compounds from *Caulerpa prolifera*
Gonçalo P. Rosa[1,2], M. Carmo Barreto[2], Ana M. L. Seca[2,1], Diana C.G.A Pinto[1]
[1]*University of Aveiro, Portugal.* [2]*University of Azores, Portugal*

14:35-14:50 [O6A.03]
***Nannochloropsis gaditana* as a biofactory for astaxanthin and EPA**
Dr. Michela Cecchin[1], Dr. Silvia Berteotti[1], Ms. Stefania Paltrinieri[1], Prof. Massimo Maffei[2], Dr. Stefano Cazzaniga[1], Prof. Matteo Ballottari[3]
[1]*University of Verona, Italy.* [2]*University of Turin, Italy.* [3]*University if Verona, Italy*

14:50-15:05 [O6A.04]
Stable production of cyanophycin by *Synechocystis* sp. PCC 6803 in continuous cultivation system
Miss Giulia Trentin, Miss Veronica Lucato, Dr Eleonora Sforza, Prof Alberto Bertucco
University of Padova, Italy

15:05-15:20 [O6A.05]
Exploring the diversity of red microalgae for exopolysaccharide production
Borjas Esqueda Aldo, Dr Laroche Céline

Session 6B - Algal Cultivation - Heterotrophic Systems, including utilization of waste waters for algal production
Ron Chance

14:05-14:20 [O6B.01]
Microalgae-membrane mediated technology (MMT) for treatment of municipal liquid wastewater
Mr Prashant Savvashe[1], Ms Juilee Palkar[1], Dr Reena Pandit[1], Prof Arvind Lali[2]
[1]*Institute of Chemical Technology, India.* [2]*Institute of Chemical Technology,, India*

14:20-14:35 [O6B.02]
Effect of pH control strategy on nutrient removal and biomass production during microalgae-based treatment of anaerobic digestion effluent
Ms. Hyeonjung Yu[1], Dr. Jaai Kim[1], Ms. Chaeyoung Rhee[2], Dr. Juhee Shin[2], Prof. Seung Gu Shin[2], Prof. Changsoo Lee[1]
[1]*Ulsan National Institute of Science and Technology (UNIST), Republic of Korea.* [2]*Gyeongsang National University, Republic of Korea*

14:35-14:50 [O6B.03]
Preparation of a microbial algae cultivating agent used for the crab (Eriocheir sinensis) aquaculture
Ms. Yalu Shao[1,2], Professor Hua Zhong[1], Mr. Liangkai Wang[3]
[1]*Wuhan University, China.* [2]*The University of Melbourne, Australia.* [3]*Hohai University, China*

14:50-15:05 [O6B.04]
Value-added materials production from *Euglena gracilis* by application of crude glycerol as a low-cost organic carbon source
Sunah Kim[1], Donghyun Lee[1], Jaecheul Yu[1], Taesup Moon[2], Taeho Lee[1]
[1]*Pusan National University, Republic of Korea.* [2]*Tae Sung Engineering Consultants Co. Ltd., Republic of Korea*

15:05-15:20 [O6B.05]

Université Clermont Auvergne - Institut Pascal UMR CNRS 6602, France	**Purification of anaerobic digestion effluent for edible microalgae culture: combination of appropriate technologies** Dr. Masatoshi Kishi, Mr. Akinori Fujita, Dr. Mutsumi Sekine, Dr. Kazuo Okamura, Prof. Tatsuki Toda *Soka University, Japan*

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	Column 1	Column 2
09:00-10:30	**Plenary Session 3** Taraka Dale **09:00-09:30 [PLE06]** **Real-time monitoring of algal pond productivity and pest presence** J.A. Timlin[1], T.A. Reichardt[1], D. Maes[1], L. Atencio[1], T. Hipple[1], T.J. Jensen[1], T.A. Dempster[2], J.A. McGowen[2], K. Poorey[1], D.J. Curtis[1], T.W. Lane[1] *[1]Sandia National Laboratories, USA. [2]Arizona State University, USA* **09:30-10:00 [PLE07]** **Bioenergy production from microalgae** Y. Li-Beisson *Aix-Marseille University, France* **10:00-10:30 [PLE08]** **BioManufacturing in Cyanobacteria Guided by Intelligent Adaptive Control (BioManIAC)** Babetta L. Marrone *Los Alamos National Laboratory, USA*	
10:30-11:00	**Break**	
11:00-12:30	**Session 7A - Algal Biology - Biodiversity and Bioprospecting of Algae for Biofuels and High Value Products** Yonghua Li-Beisson **11:00-11:20 [INV07]** **The algae DISCOVR project: development of integrated screening, cultivar optimization, and verification research** Dr. Michael Huesemann[1], Mr. Scott Edmundson[1], Dr. Song Gao[1], Dr. Taraka Dale[2], Dr. Sangeeta Negi[2], Dr. Lieve Laurens[3], Mr. Ryan Davis[3], Dr. Bruno Klein[3], Mr. Eric Knoshaug[3], Dr. Todd Lane[4] *[1]Pacific Northwest National Laboratory, USA. [2]Los Alamos National Laboratory, USA. [3]National Renewable Energy Laboratory, USA. [4]Sandia National Laboratories, USA* **11:20-11:35 [O7A.01]** **Bioprospecting and directed evolution of thermo-tolerant microalgae to reduce cooling costs in microalgae production** MSc. Robin Barten[1], MSc. Rocca Chin-On[1], Dr. Marcel Janssen[1], Prof. Dr. Rene Wijffels[1,2], Prof. Dr. Maria Barbosa[1] *[1]Wageningen University and Research, The Netherlands. [2]Nord University, Norway* **11:35-11:50 [O7A.02]** **A1K: Sequencing the genomes of 1,000 algal species** Dr. Erik Hanschen[1], Dr. Rose Ann Cattolico[2], Dr. Alina Corcoran[3], Dr. Juergen Polle[4,5], Dr. Shawn Starkenburg[1] *[1]Los Alamos National Lab, USA. [2]University of Washington, USA. [3]New Mexico Consortium, USA. [4]Brooklyn College of the City University of New York, USA. [5]MicroBio Engineering, Inc., USA* **11:50-12:05 [O7A.03]** **Classical breeding in diatoms as a strategy to enhance production of high-value fatty acids for European aquaculture** PhD Francesco Pisapia[1], Ana Merse[1,2], Virginia Cruz Álamo[1], Moneiba Suárez Lozano[1], PhD Carlos Almeida Peña[1], PhD Antera Martel Quintana[1], Professor Juan Luis Gómez Pinchetti[1] *[1]Spanish Bank of Algae, University of Las Palmas de Gran Canaria (ULPGC), Spain. [2]Internationales Hochschulinstitut (IHI) Zittau, Germany* **12:05-12:20 [O7A.04]** **PhycoCosm: sequencing the algal tree of life** Alan Kuo, Richard Hayes, Sara Calhoun, Bishoy Kamel, Asaf Salamov, Igor Grigoriev *DOE Joint Genome Institute, USA*	**Session 7B - Engineering of Biorefinery Systems, Technologies, and End-to-end Integration** José A. Olivares **11:00-11:20 [INV08]** **Advance the State of Technology in Algae R&D** Dr. John McGowen *Arizona State University, USA* **11:20-11:35 [O7B.01]** **A mechano-chemical method for algal protein extraction and isolation** Ashley Cutshaw, Henry Frost, Sibel Uludag-Demirer, Yan Liu, Wei Liao *Michigan State University, USA* **11:35-11:50 [O7B.02]** **Computational solvent screening for efficient microalgal-based biorefineries exemplified by *Phaeodactylum tricornutum*** Laura König-Mattern[1], Steffen Linke[2], Liisa Rihko-Struckmann[1], Kai Sundmacher[1,2] *[1]Max Planck Institute for Dynamics of Complex Technical Systems, Germany. [2]Otto von Guericke University Magdeburg, Germany* **11:50-12:05 [O7B.03]** **Novel valorization scheme for algal biomass with simultaneous leachate treatment** Ms Seema Sukhani, Mr Sayon Chakravarty, Mr H.N. Chanakya *Indian Institute of Science, India* **12:05-12:20 [O7B.04]** **Improved holistic exploitation of pulsed electric field (PEF)-treated and lipid extracted microalgae *Auxenochlorella protothecoides*, utilizing anaerobic digestion (AD)** Ralf Straessner[1], Dr. Marcell Nicolausz[2], Dr. Aude Silve[1], Ioannis Papachristou[1], Ruediger Wuestner[1], Natalia Nazarova[1], Klaus Leber[1], Dr. Sahar Akaberi[1], Prof. Dr. Georg Mueller[1], Dr. Wolfgang Frey[1] *[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany. [2]Helmholtz-Zentrum für Umweltforschung, UFZ, Leipzig, Germany*
12:30-13:30	**Break**	
13:30-14:55	**Session 8A - Bioproducts from Algae Including High-Value Products and Co-products** Michael Huesemann	**Session 8B - Algal Cultivation - Phototrophic Systems in Photobioreactors** John McGowen

13:30-13:45 [O8A.01]
Hydrothermal based pretreatments as a sustainable alternative for the upgrade of macroalgae
Mr. Pedro L. Martins[1,2], Mrs. Cristiana Andrade[1,3], Dr Luís C. Duarte[1], Dr. Florbela Carvalheiro[1]
[1]Unidade de Bioenergia e Biorrefinarias, LNEG - Laboratório Nacional de Energia e Geologia, I.P, Portugal. [2]Centro de Estudos Florestais, Instituto Superior de Agronomia, Universidade de Lisboa, Portugal. [3]Instituto Superior de Agronomia, Universidade de Lisboa, Portugal

13:45-14:00 [O8A.02]
Development of an ultrasound assisted enzymatic pretreatment as an effective process to enhance bioactive lipid isolation from *Nannochloropsis gaditana*
PhD Paz Garcia-Garcia, PhD student Cristina Blanco-Llamero, PhD Francisco Javier Senorans
Universidad Autónoma de Madrid, Spain

14:00-14:15 [O8A.03]
KRuMBS: Kyphosid ruminant microbial biodigestion of seaweeds – with industry applications
Neil Sims[1], Simona Augyte[1], Rob Nelson[2], Wesley Sparagon[3], Craig Nelson[3], Lydia Rachbauer[4], Linda Wegley-Kelly[5], Emily Gentry[6], Eric Allen[6], Lieve Laurens[2]
[1]Ocean Era, Inc, USA. [2]NREL, USA. [3]University of Hawai'i, Manoa, USA. [4]Lawrence Berkeley Labs, USA. [5]San Diego State University, USA. [6]University of California, San Diego, USA

14:15-14:30 [O8A.04]
A novel extraction process of phycobiliproteins with high purity grade from biomass of *Arthrospira platensis* and *Porphyridium cruentum*.
Dr. Rosaria Lauceri, Dr. Graziella Chini Zittelli, Dr. Giuseppe Torzillo
Consiglio Nazionale delle Ricerche, Italy

14:30-14:45 [O8A.05]
Evaluation of the antioxidant activity potential of Fucus vesiculosus, Himanthalia elongata and Laminaria ochroleuca extracts obtained by ultrasound-assisted extraction
MRS Lorena Pasquali[1], PhD Mariola Belda[2], PhD Dolores Cejalvo[2], PhD José Miguel Lloris[3], PhD Carolina Padrón[2]
[1]Lifeanalytics S.r.l., Italy. [2]Centro de Investigación Traslacional San Alberto Magno (CITSAM), Universidad Católica de Valencia San Vicente Mártir, Spain. [3]Facultad de Medicina, Universidad de Valencia, Spain

13:30-13:45 [O8B.01]
Effect of phytohormones on improving biomass productivities in algal production strains
Sangeeta Negi[1], Kay Carr[1], Bridget Daughton[1], John McGowen[2], Bruno Klein[3], Ryan Davis[3], Taraka Dale[1]
[1]Los Alamos National Laboratory, USA. [2]The Arizona Center for Algae Technology and Innovation (AzCATI) Arizona State University, USA. [3]National Renewable Energy Laboratory, USA

13:45-14:00 [O8B.02]
Dynamic and functional modeling of carbon metabolism in photosynthetic microalgae
Diyuan Wang, Yi-Chun Lai, Amanda L. Karam, Dr. Francis L. de los Reyes, III, Dr. Joel J. Ducoste
North Carolina State University, USA

14:00-14:15 [O8B.03]
Influence of combinations of nutritional modes on cell growth in&*nbsp;Chromochloris zofingiensis*
Anupreet K. Chowdhary, Dr. Masatoshi Kishi, Prof. Tatsuki Toda
Soka University, Japan

14:15-14:30 [O8B.04]
On the biphasic growth pattern of photoautotrophic *Arthrospira maxima*: Interplay of circadian rhythm and cell cycle
Mr Vignesh K., Professor Jaffar Ali B. M.
Pondicherry University, India

14:30-14:45 [O8B.05]
***Chlamydomonas typhlos* as a potential cold-adapted species for microalgae production in Northwest Europe**
Professor Behnam Taidi, Hasdhéka KINSOU, Dr. Bélinda Perez-Bibbins, Elisabeth BERMEJO-PADILLA, Dr. Rayen Filali
University of Paris Saclay, France