

Oral Program

Sunday June 7, 2015		
Room	Paradise Foyer	
16:00-18:00	Registration and Welcome Reception	
Monday June 8, 2015		
Room	Island/Palm	
08:00-08:05	Welcome and introduction	
08:05-08:20	Special guest – Matt Carr, Executive Director, Algae Biomass Organization, USA	
Session Chair	Richard Sayre, Los Alamos National Laboratory,United States	
08:20-09:10	[PLE01] Bioenergy technologies office overview, mission, and goals Jonathan Male, Energy Efficiency and Renewable Energy (EERE), USA	
09:10-10:00	[PLE02] Photosynthetic bio-manufacturing in green algae Stephen Mayfield, UC San Diego, USA	
Room	Royal/Pacific	
10:00-10:30	Coffee break	
Rooms	Island	Palm
10:30-12:25	Session 1A - Algal Biology – Biodiversity and Bioprospecting Session Chair: Juergen Polle ,Brooklyn College of CUNY, United States	Session 1B - Bioproducts Session Chair: Shanna Ivey, New Mexico State University, USA
10:30-11:00	[INV01] The NRC algal carbon conversion flagship: Research activities in support of commercial algae cultivation in Northern Regions Stephen O’Leary, NRC Algal Carbon Conversion Flagship Program, Canada	[INV02] Emilie Slaby, The Scoular Company, USA
11:00-11:17	[O1.01] Systems biology analysis of biosynthesis of unusual neutral lipids with biofuel potential by the marine haptophyte alga Emiliana huxleyi G.V. Wolfe, California State University Chico, USA	[O2.01] Efficient DEH production from Alginate and its conversion to KDG A. Inoue*, R. Nishiyama, T. Ojima, Hokkaido University, Japan
11:17-11:34	[O1.02] A rapid and integrated platform for full genomic and metabolic characterization of algae: A case study with a species of Chloroidium isolated from the UAE D.R. Nelson, A. Chaiboonchoe, B. Dohai, A. Jaiswal, M. Arnoux, N. Drou, K. Salehi-Ashtiani* ,New York University Abu Dhabi, United Arab Emirates	[O2.02] Biomass of Spirulina maxima enriched by biosorption process as a new feed supplement for laying hens A. Saeid* ¹ , K. Chojnacka ¹ , S. Opalinski ^{1,2} , M. Korczynski ^{1,2} , ¹ Wroclaw University of Technology, Poland, ² Wroclaw University of Environmental and Life Sciences, Poland
11:34-11:51	[O1.03] Rapid identification and determination of polyunsaturated fatty acid composition in Nannochloropsis oculata by atr-ftir spectroscopy S. Guruprasad* ¹ , B. Tamburic ¹ , S. Forbes ¹ , M. Schliep ¹ , S.I. Blackburn ² , P.J. Ralph ¹ , ¹ University of Technology Sydney, Australia, ² Commonwealth Scientific and Industrial REsearch Organization, Australia	[O2.03] Fatty acids and cholesterol composition of egg yolk as an effect of marine algae (Spirulina platensis) addition to feed for laying hens S. Opalinski* ¹ , L. Bobak ¹ , M. Swiniarska ¹ , M. Korczynski ¹ , K. Chojnacka ² , ¹ Wroclaw University of Environmental and Life Sciences, Poland, ² Wroclaw University of Technology, Poland
11:51-12:08	[O1.04] Sequencing and comparative analysis of three biofuel-relevant strains of Chlorella sorokiniana S.R. Starkenburg* ¹ , P.E. Li ¹ , C. Lo ¹ , O. Chertkov ¹ , A. Barry ¹ , H.D. Cerutti ³ , K. Davenport ¹ , Y. Kunde ¹ , J.	[O2.04] Multi-product microalgae biorefineries: A new sustainable era in resource generation W.J. Barr*, A.E. Landis, Arizona State University, USA

	Polle ² , R. Sayre ^{1,1} , <i>Los Alamos National Laboratory, USA, ²Brooklyn College of CUNY, USA, ³University of Nebraska-Lincoln, USA</i>	
12:08-12:25	[O1.05] Size doesn't matter: The influence of cell diameter on lipid productivity of chlorococcum littorale I. Teles Cabanelas*, C. Fernandes, D.M.M. Kleinegris, M.J. Barbosa, R.H. Wijffels, <i>Wageningen University, The Netherlands</i>	[O2.05] Enhancement of biomass and ketocarotenoid production in sarcinoid alga Chlorosarcinopsis PY02 isolated from arid soil of western Thailand by nitrogen deprivation under mixotrophic culture P. Cherdchukeattisak ¹ , P.D. Fraser ² , T. Wannathong ^{*1} , ¹ <i>Silpakorn University, Thailand, ²Royal Holloway University of London, UK</i>
Room	Royal/Pacific	
12:25-13:30	Lunch	
Rooms	Island	Palm
13:30-15:08	Session 2A - New Conversion Technologies Session Chair: Johnathan Holladay , <i>Pacific Northwest National Laboratory, USA</i>	Session 2B - Algal Cultivation – Heterotrophic Systems Session Chair: Qiang Hu , <i>Institute of Hydrobiology, CAS, China</i>
13:30-14:00	[INV03] Combined algal processing: A novel process for biofuel and bioproducts from algal biomass Phil Pienkos*, T. Dong, E. Knoshaug, L. Laurens, R. Davis, N. Nagle, <i>National Renewable Energy Laboratory, USA</i>	[INV04] Matt Posewitz, <i>Colorado School of Mines, USA</i>
14:00-14:17	[O1.06] Process developments for a continuous HTL-based algae biorefinery D. López Barreiro ^{*1} , U. Hornung ² , A. Kruse ^{2,3} , F. Ronsse ¹ , W. Prins ¹ , ¹ <i>Ghent University, Belgium, ²Karlsruhe Institute of Technology, Germany, ³University of Hohenheim, Germany</i>	[O2.06] Towards the production of biofuels and non-food bioproducts from microalgae grown in wastewater I. Ferrer, R. Gutiérrez*, M. Solé, D. Arias, E. Uggetti, M. Garfí, J. García, <i>Universitat Politècnica de Catalunya, Spain</i>
14:17-14:34	[O1.07] Photoelectrochemical biofuel cell with the carbon dioxide conversion function coupled Thylakoid membrane from microalgae Spirulina Platensis and biocatalyst immobilized electrodes Y. Amao ^{*1,2} , M. Fujimura ^{1,2} , N. Shuto ^{2,3} , A. Tadokoro ^{2,3} , M. Nakamura ^{2,3} , ¹ <i>Osaka City University, Japan, ²Japan Science and Technology Agency, Japan, ³Oita University, Japan</i>	[O2.07] Microalgae growth of on undiluted and untreated anaerobic digestate of piggery effluent J. Ayre, N. Moheimani*, M. Borowitzka, <i>Murdoch University, Australia</i>
14:34-14:51	[O1.08] Impact of heavy metal contamination on biofuel production through acid catalysed conversion D. Hess*, K. Napan, B. McNeil, J.C. Quinn, <i>Utah State University, USA</i>	[O2.08] Species richness increases productivity of algae cultivated in dairy wastewater P.K. Thomas ^{*1} , K.P. Feris ¹ , A.R. Sanfilippo ¹ , E.R. Coats ² , ¹ <i>Boise State University, USA, ²University of Idaho, USA</i>
14:51-15:08	[O1.09] Highly energy efficient algae-based power generation: Integration of supercritical water gasification and combined cycle M. Aziz*, T. Oda, T. Kashiwagi, <i>Tokyo Institute of Technology, Japan</i>	[O2.09] Maximizing nutrient and energy recovery from urban wastewaters using algal based systems T. Selvaratnam*, N. Nagamany, F.O. Holguin, P.J. Lammers, <i>New Mexico State University, USA</i>
Room	Royal/Pacific	
15:08-15:40	Coffee break	
Rooms	Island	Palm
15:40-17:35	Session 3A - New Conversion Technologies Session Chair: Phil Pienkos , <i>National Renewable Energy Laboratory, USA</i>	Session 3B - Algal Biology – Molecular Traits Session Chair: Matt Posewitz , <i>Colorado School of Mines, USA</i>

15:40-16:10	[INV05] Combustion of biodiesel derived from Nannochloropsis salina and Cryptococcus curvatus: Compression ignition engine particulate and gaseous emissions Jason Quinn ^{*1} , M. Morgan ¹ , T. Vaughn ² , A. McCurdy ¹ , L. Seefeldt ¹ , B. Bugbee ¹ , A. Marchese ² ¹ Utah State University, USA, ² Colorado State University, USA	[INV06] Alternative carbon substrate utilization in four microalgal production strains Amanda Barry ^{*1} , G.T. Smith ² , S. Starkenburg ¹ , R.T. Sayre ¹ , ¹ Los Alamos National Lab, USA, ² University of New Mexico, USA
16:10-16:27	[O1.10] Supercritical water gasification of microalgae: Process modeling and analysis O. Yakaboylu ^{*1} , J. Harinck ^{1,2} , K.G. Smit ² , W. De Jong ¹ ¹ Delft University of Technology, The Netherlands, ² Gensos B.V., The Netherlands	[O2.10] Molecular insights into oil accumulation in the oleaginous diatom <i>Fistulifera solaris</i> as revealed by the multi-omics approach Y. Maeda ^{*1} , M. Muto ^{1,2} , Y. Liang ¹ , T. Yoshino ¹ , T. Tanaka ^{1,2} , ¹ Tokyo University of Agriculture & Technology, Japan, ² JST, Japan
16:27-16:44	[O1.11] Investigation of extraction and transesterification of algae by immobilized lipase as biofuel H.C. Ong [*] , N. Mohd Yusof, B. Mohamed Jan, W.T. Chong, <i>University of Malaya, Malaysia</i>	[O2.11] Algal polyculture enhances production and gene expression of lipids for biofuels M.A. Alexandrou ^{*1} , M.S. Pankey ^{1,4} , A. Narwani ^{2,5} , B. Bentlage ³ , B. Cardinale ² , C. Delwiche ³ , T. Oakley ¹ , ¹ UCSB, USA, ² University of Michigan, USA, ³ University of Maryland, USA, ⁴ University of New Hampshire, USA, ⁵ EAWAG, Switzerland
16:44-17:01	[O1.12] Physical and biological pre-treatments on algal biomass for improved energy production F. Ometto ² , R. Whitton ¹ , B. Jefferson ¹ , R. Villa ^{*1} ¹ Cranfield University, UK, ² Scandinavian Biogas and Biofuels AB, Sweden	[O2.12] Phototropin mediated regulation of gene expression in <i>Chlamydomonas reinhardtii</i> S. Negi ^{*1} , S. Starkenberg ³ , P. Hegemann ² , N. Friedland ¹ , A. Barry ³ , T. Sanchez ³ , S. Iyer ³ , R. Sayre ^{1,3} , ¹ New Mexico Consortium, USA, ² Humboldt University, Germany, ³ Los Alamos National Laboratory, USA
17:01-17:18	[O1.13] Assessment of integrated technology for biofuel production with phytoremediation using Algal Turf Scrubber P. Bohutskyi [*] , S. Chow, B. Ketter, C.F. Shek, D. Yacar, M.J. Betenbaugh, E.J. Bouwer, <i>Johns Hopkins University, USA</i>	[O2.13] Enhanced lipid production in green microalga by introduction of rapeseed DGAT2 S. Kumar ^{*1} , I. Ahmad ¹ , H. Daniell ² , ¹ ICGEB, India, ² University of Pennsylvania, USA
17:18-17:35	[O1.14] Feasibility of selective fermentation of the non-lipid fractions of <i>Scenedesmus</i> biomass coupled with biohydrogenation to produce saturated fatty acids Y.J.S. Lai, A. Auguinaga, P. Parameswaran [*] , B.E. Rittmann, <i>Arizona State University, USA</i>	[O2.14] Biocontainment of Genetically Modified (GM) algae using modular expression of key target genes S. Rajamani ^{*1} , R. Sayre ¹ , ¹ New Mexico Consortium, USA, ² Los Alamos National Laboratory, USA
Room	Royal/Pacific	
17:35-18:45	Poster session 1	
Tuesday June 9, 2015		
Room	Island/Palm	
08:00-08:05	Welcome and Introduction	
Session Chair	Eric Dunlop, <i>Pan Pacific Technologies Pty Ltd, Australia</i>	
08:05-08:35	[PLE03] Johnathan Holladay, <i>Pacific Northwest National Laboratory, USA</i>	
08:35-09:05	[PLE04] Advances in Astaxanthin production in <i>Haematococcus Pluvialis</i> S.B. Boussiba [*] , S.L. Leu, <i>Ben Gurion University, Israel</i>	
09:05-09:35	[PLE05] Qiang Hu, <i>Institute of Hydrobiology, CAS, China</i>	
Room	Royal/Pacific	

09:35-10:00	Coffee break	
<i>Rooms</i>	<i>Island</i>	<i>Palm</i>
10:00-12:29	Session 4A - Algal Biology – Metabolic Regulation Session Chair: S.B. Boussiba , <i>Ben Gurion University, Israel</i>	Session 4B – Bioproducts Session Chair: Emilie Slaby , <i>The Scoular Company, USA</i>
10:00-10:30	[INV07] Heriberto Cerutti, <i>University of Nebraska – Lincoln, USA</i>	[INV08] The utility of lipid extracted algae as a feed for animals Shanna Ivey, <i>New Mexico State University, USA</i>
10:30-10:47	[O1.15] Continuous and stable carbon capture and production of isoprene-terpene bioproducts in fast-growing <i>Synechococcus</i> sp. PCC 7002 cyanobacteria T. Kallas ^{*1,3} , M.E. Nelson ^{1,3} , O. Aremu ¹ , E.L. Singsaas ^{2,3} , ¹ <i>University of Wisconsin Oshkosh, USA</i> , ² <i>University of Wisconsin Stevens Point, USA</i> , ³ <i>Algoma Algal Biotechnology LLC, Oshkosh, USA</i>	[O2.15] Dynamic composition of <i>Nannochloropsis</i> sp. biomass at 5 testbed sites during unified physiological field studies, with an emphasis on high-value omega-3 fatty acids L.M. Laurens ^{*1} , V. Harmon ^{3,1} , E. Knoshaug ¹ , T. Dempster ² , P. Pienkos ¹ , J. McGowen ¹ , ¹ <i>National Renewable Energy Laboratory, USA</i> , ² <i>Arizona State University, USA</i> , ³ <i>Cellana, LLC, USA</i>
10:47-11:04	[O1.16] Towards biofuel production in <i>Synechocystis</i> sp. PCC 6803: Expanding the molecular biology toolbox for pathway engineering Y.E. Cheah, S.C. Albers, C.A.M. Peebles [*] , <i>Colorado State University, USA</i>	[O2.16] Induction of canthaxanthin production in a <i>Dactylococcus</i> microalga isolated from the Algerian Sahara B.S. Grama ^{*1,2} , S. Chader ⁴ , D. Khelifi ¹ , S.N. Agathos ² , C. Jeffries ^{2,5} , ¹ <i>Université Constantine 1, Algeria</i> , ² <i>Université Catholique de Louvain, Belgium</i> , ³ <i>Université d'Oum El Bouaghi, Algeria</i> , ⁴ <i>Unité de Développement des Equipements Solaires, UDES/Centre de Développement des Energies renouvelables CDER, Tipaza, Algeria</i> , ⁵ <i>Fonds de la Recherche – FNRS, Louvain-la-Neuve, Belgium</i>
11:04-11:21	[O1.17] Examination of post-translational regulation of lipid accumulation in <i>Chlorella vulgaris</i> M.T. Guarneri [*] , E.P. Knoshaug, C.A. Henard, P.T. Pienkos, <i>National Renewable Energy Laboratory, USA</i>	[O2.17] Scale-up <i>Haematococcus pluvialis</i> biomass for the production of phytase enzyme to be used in animal feed N. Delgado [*] , V. Henríquez, <i>Pontificia Universidad Católica de Valparaíso, Chile</i>
11:21-11:38	[O1.18] Overcoming diurnal carbon limitation during algal cultivation B. Tamburic [*] , C.R. Evenhuis, J.R. Crosswell, P.J. Ralph, <i>University of Technology Sydney, Australia</i>	[O2.18] Anti-inflammatory activity of polar lipids isolated from microalgae A.H. Banskota [*] , R. Stefanova, S. Sperker, J.A. Osborne, R. Melanson, P. Gallant, P.J. McGinn, S.J.B. O'Leary, <i>National Research Council Canada, Canada</i>
11:38-11:55	[O1.19] Manipulating metabolism within diatom gene regulatory networks S.R. Smith ^{*1,2} , A.E. Allen ¹ , ¹ <i>Scripps Institution of Oceanography, USA</i> , ² <i>J. Craig Venter Institute, USA</i>	[O2.19] Marine diatom platform for production of energy and functional substances with widespread relevance G. d'Ippolito, L. Dipasquale, A. Fontana [*] , <i>CNR - Istituto di Chimica Biomolecolare, Italy</i>
11:55-12:12	[O1.20] Time series view of <i>Isochrysis zhangjiangensis</i> under nitrogen depletion from "omics" X.P. Cao [*] , H.T. Wang, Y.Y. Meng, P.L. Shen, K.Y. Wang, P. Gao, Y.S. Zhang, H.F. Zou, S. Xue, <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China</i>	[O2.20] Exploring the refinery concept on <i>Spirulina Platensis</i> D. Pozo, A. Marcati, C. Laroche, P. Michaud, G. Djelveh [*] , <i>Clermont Université, France</i>
12:12-12:29	[O1.21] Effective interpretation of omic datasets for the	[O2.21] Cyanobacteria: A supplementary feed for

	enhancement of algal biofuel production J. Traller, <i>Scripps Institution of Oceanography, USA</i>	shrimp and cholesterol degradation K. Sakthivel*, K. Kathiresan, <i>Annamalai University, India</i>
Room	Royal/Pacific	
12:29-13:30	Lunch	
Rooms	Island	Palm
13:30-15:42	Session 5A - Algal Harvesting and Extraction Session Chair: Babs Marrone , <i>Los Alamos National Laboratory, USA</i>	Session 5B -Technoeconomic and Sustainability Modeling Session Chair: Jason Quinn , <i>Utah State University, USA</i>
13:30-14:00	[INV09] The influence of physical cell properties on the dewatering of microalgae using ultrasonic and centrifuge harvesters Jim Coons*, D.M. Kalb, T. Dale, B.L. Marrone, <i>Los Alamos National Laboratory, USA</i>	[INV10] Integrated models for algal process technology development Eric Dunlop, <i>Pan Pacific Technologies Pty Ltd, Australia</i>
14:00-14:17	[O1.22] Novel adaptation of the dissolved air flotation process for algae harvesting in waste stabilisation ponds R.K. Yap ¹ , M. Whittaker ² , R.M. Stuetz ¹ , W. Peirson ¹ , G. Newcombe ³ , B. Jefferson ⁴ , R.K. Henderson* ¹ , ¹ The University of New South Wales, Australia, ² Monash University, Australia, ³ Australian Water Quality Centre, Australia, ⁴ Cranfield University, UK	[O2.22] Energy use and greenhouse gas emissions from an algae fractionation process for producing renewable diesel A.K. Pegallapati* ¹ , E.D. Frank ¹ , R.E. Davis ¹ , C.M. Kinchin ¹ , ¹ Argonne National Laboratory, USA, ² National Renewable Energy Laboratory, USA
14:17-14:34	[O1.23] The interplay between algal biology and flocculation D. Vandamme* ¹ , I. Foubert ² , L. Laurens ³ , K. Muylaert ¹ , ¹ Laboratory of Aquatic Biology, KU Leuven Kulak Campus Kortrijk –University of Leuven, Belgium, ² KU Leuven Kulak, Research Unit Food & Lipids, Department of Molecular and Microbial Systems Kulak and Leuven Food Science and Nutrition Research Centre (LForCe), Belgium, ³ National Bioenergy Center, National Renewable Energy Laboratory, USA	[O2.23] Techno-economic analysis and life cycle assessment of algae-based wastewater treatment and biofuel production compared to conventional activated sludge process I.C. Woertz* ¹ , T.L. Lundquist ² , J.R. Benemann ¹ , ¹ MicroBio Engineering, Inc., USA, ² Cal Poly State University, USA
14:34-14:51	[O1.24] Low energy disruption of microalgae using ionic liquids V. Orr* ¹ , N.V. Plechkova ² , K.R. Seddon ² , L. Rehmann ¹ , ¹ University of Western Ontario, Canada, ² Queen's University Belfast, UK	[O2.24] Combined algae-based biofuels and wastewater facilities systems modeled by computational fluid dynamics (CFD) approaches C.E. Quiroz Arita*, L.P. Dasi, T.H. Bradley, <i>Colorado State University, USA</i>
14:51-15:08	[O1.25] Efficient electrochemical process for the harvesting of small size microalgae by using non-sacrificial carbon electrodes A. Guldhe*, R. Misra, P. Singh, I. Rawat, F. Bux, <i>Durban University of Technology, South Africa</i>	[O2.25] Outlook on microalgae production chains D.M.M. Kleinegris* ¹ , M.J. Barbosa ¹ , J.R. González ¹ , R. Bosma ² , J. De Vree ² , H. Reith ² , G. Olivieri ² , M. Eppink ² , R.H. Wijffels ² , ¹ Wageningen UR - Food & Biobased Research, AlgaePARC, The Netherlands, ² Wageningen UR - Bioprocess Engineering, AlgaePARC, The Netherlands
15:08-15:25	[O1.26] Inducing accelerated cell death in highly-concentrated microalgal paste as a novel mean for downstream processing R. Halim*, G. Martin, P. Webley, <i>The University of Melbourne, Australia</i>	[O2.26] Flue gas handling and transportation to algae cultivation system for CO₂ capture: Techno-economic assessment G. Iaquaniello ¹ , B. Masciocchi* ² , S. Di Pompeo ² , ¹ KT Kinetics technology SpA, Italy, ² Processi Innovativi Srl, Italy

15:25-15:42	[O1.27] A low-cost, high-throughput, miniaturized inertial-migration-based cyanobacteria concentrator L.W. Wang*, D.S.D. Dandy, <i>Colorado State University, USA</i>	[O2.27] Nutrient requirements for algal biofuels: Accessing the sustainability of scaling-up P. Bohutskyi*, M.J. Betenbaugh, E.J. Bouwer, <i>Johns Hopkins University, USA</i>
Room	Royal/Pacific	
15:42-16:10	Coffee break	
Rooms	Island	Palm
16:10-17:18	Session 6A - Algal Harvesting and Extraction Session Chair: Kenneth Reardon , <i>Colorado State University, USA</i>	Session 6B – Macroalgae Session Chair: Hankwon Lim , <i>Pukyong National University, Republic of Korea</i>
16:10-16:27	[O1.28] Large-scale cultivation of Nannochloropsis sp. on recycled growth media and harvesting using combined centrifugation and membrane filtration P. Wensel*, J. McGowen, T. Dempster, <i>Arizona State University, USA</i>	[O2.28] High density mass production of seaweed biomass in Korea N.G. Kim ¹ , K.J. Choi ² , H.C. Woo ⁴ , H. Chung* ³ ¹ Gyeongsang National University, Republic of Korea, ² Korea Polytechnic College, Republic of Korea, ³ Korea Advanced Institute of Science and Technology, Republic of Korea, ⁴ Pukyong National University, Republic of Korea
16:27-16:44	[O1.29] Investigation of different flocculation methods for Dunaliella sp. K. Pirwitz* ¹ , L. Rihko-Struckmann ¹ , K. Sundmacher ^{1,2} ¹ Max Planck Institute for Dynamics of Complex Technical Systems, Germany, ² Otto von Guericke University Magdeburg, Germany	[O2.29] Volatile fatty acids and hydrogen production from macroalgae by anaerobic fermentation T.T. Pham* ¹ , M.K. Song ² , H.C. Woo ² , H.H. Yoon ¹ ¹ Gachon University, Republic of Korea, ² Pukyong National University, Republic of Korea
16:44-17:01	[O1.30] Biosorption of heavy metals by the self-flocculating microalgae <i>Chlorella vulgaris</i> JSC-7 X.Y. Zhang ¹ , A. Alam ¹ , C. Wan ¹ , F.W. Bai ^{1,2} , X.Q. Zhao* ^{1,2} , ¹ Dalian University of Technology, China, ² Shanghai Jiaotong University, China	[O2.30] Pyrolysis and catalytic upgrading of Brown Algae for Liquid Biofuel Production J.H. Choi* ¹ , D.J. Suh ² , S-S. Kim ³ , H.C. Woo ¹ ¹ Pukyong National University, Republic of Korea, ² Korea Institute of Science and Technology, Republic of Korea, ³ Kangwon National University, Republic of Korea
17:01-17.18	[O1.31] Processing high solids algal biomass: Understanding the rheology, the needs and the challenges B.H.J. Yap* ¹ , G.J. Dumsday ² , P.J. Scales ¹ , G.J.O. Martin ¹ , ¹ The University of Melbourne, Australia, ² CSIRO, Australia	[O2.31] Recovery of bioactive compounds from brown seaweed using eco-friendly extraction process P.S. Saravana, H-C. Woo, B-S. Chun*, <i>Pukyong National University, Republic of Korea</i>
Room	Royal/Pacific	
17:18-19:00	Poster session 2	
19:00-22:00	Conference Dinner (optional)	
Wednesday June 10, 2015		
Room	Island/Palm	
08:00-08:10	Welcome and Introduction	
Session Chair	Pete Lammers, <i>New Mexico State University, USA</i>	
08:10-08:40	[PLE06] Carbon core metabolism in Green Algae Juergen Polle ^{1,2} , ¹ Brooklyn College of the City University of New York, USA, ² The Graduate Center of the City University of New York, USA	
08:40-09:10	[PLE07] 0224 Pond crashes: Evaluation of ATP³ unified field study results to identify the primary factors affecting pond reliability V. Harmon ¹ , John McGowen* ² , P. Pienkos ³ , T. Lane ⁴ , E. Knoshaug ³ , T. Dempster ² , B. Crowe ⁵ , T. Igou ⁶ , C. Withstandley ⁷ , ¹ Cellana LLC, USA, ² Arizona State University, USA, ³ National Renewable Energy Laboratory, USA, ⁴ Sandia National Laboratory, USA, ⁵ California Polytechnic State University, USA, ⁶ Georgia Institute of Technology, USA, ⁷ Florida Algae LLC, USA	

09:10-09:40	[PLE08] Addressing the challenges of large-scale phototrophic cultivations Kenneth F. Reardon*, S.P. Fulbright, L. Wang, S. Park, G. Peers, D.S. Dandy, <i>Colorado State University, USA</i>	
Room	Royal/Pacific	
09:40-10:00	Coffee break	
Rooms	Island	Palm
10:00-12:12	Session 7A - Algal Cultivation – Phototrophic Systems in PBRs Session Chair: Christoph Benning , <i>Michigan State University, USA</i>	Session 7B - Algal Cultivation – Phototrophic Systems in Open Ponds Session Chair: Jun Minagawa , <i>National Institute for Basic Biology, Japan</i>
10:00-10:30	[INV11] David Kramer, <i>Michigan State University, USA</i>	[INV12] Pete Lammers, <i>New Mexico State University, USA</i>
10:30-10:47	[O1.32] Impact and modeling of specific lighting conditions on <i>Chlorella vulgaris</i> growth in intensified photobioreactors J. Pruvost*, A. Soulies, C. Castelain, T. Burghel, J. Legrand, <i>University of Nantes, France</i>	[O2.32] Conceptual design and preliminary engineering for capture and reuse of CO₂ and NO_x for algae production from stationary engine flue-gas in California D. Mendola*, I. Woertz ¹ , J. Benemann ¹ , R. Kent ¹ , W.M. Rickman ¹ , B.G. Mitchell ¹ , ¹ UCSD, <i>Scripps Institution of Oceanography, USA</i> , ² MicroBio Engineering, <i>USA</i> , ³ Southern California Gas Company, <i>USA</i> , ⁴ W.M. Rickman Engineering, <i>USA</i>
10:47-11:04	[O1.33] Validation of a simple mechanistic model to predict microalgae growth and photobioreactor productivity M. Janssen*, W. Blanken, R.H. Wijffels, <i>Wageningen University, The Netherlands</i>	[O2.33] Challenges and innovations in large-scale open pond algae production for commodities D.A. Hazlebeck, <i>Global Algae Innovations Inc., USA</i>
11:04-11:21	[O1.34] Microalgae biomass production in a biofilm photobioreactor - From lab to pilot-scale W. Blanken*, M. Janssen, R.H. Wijffels, <i>Wageningen University, The Netherlands</i>	[O2.34] Major nutrient recycling for sustainable AlgalMass culture T.W. Lane*, R.W. Davis ¹ , J. Hewson ¹ , A. Siccadi ³ , P. Kipp ² , N. Wyatt ¹ , P.D. Lane ¹ ¹ Sandia National Laboratories, <i>USA</i> , ² OpenAlgae LLC, <i>USA</i> , ³ Texas AgriLife, <i>USA</i>
11:21-11:38	[O1.35] Multi-scale characterization of improved algae strains T. Dale*, S.N. Twary ¹ , A. Barry ¹ , M. Huesemann ² , A. Chavis ² , P. Chen ² , J. McGowen ³ , ¹ Los Alamos National Laboratory, <i>USA</i> , ² Pacific Northwest National Laboratory, <i>USA</i> , ³ Arizona State University, <i>USA</i>	[O2.35] Comparison of wastewater, defined medium, and ponds in series algae production in outdoor raceways B.C. Crowe*, E.N. Nicolai, W.S. Spence, T.L. Lundquist, <i>Cal Poly State University, USA</i>
11:38-11:55	[O1.36] Effect of heat removal and electricity co-generation on <i>Nannochloropsis</i> biomass productivity in a novel plate photobioreactor A. Vadiveloo*, R. Alghamedi ² , J. Cosgrove ¹ , D. Parlevliet ¹ , K. Alameh ² , N. Moheimani ¹ , ¹ Murdoch University, <i>Australia</i> , ² Edith Cowan University, <i>Australia</i>	[O2.36] Harmonized algal cultivation experiments in the Unified Field Studies: The first year of yield and productivity data from the ATP³ testbed consortium E. Knoshaug*, L. Laurens ¹ , V. Harmon ³ , T. Dempster ² , P. Pienkos ¹ , J. McGowen ² ¹ NREL, <i>USA</i> , ² ASU, <i>USA</i> , ³ Cellana, <i>USA</i>
11:55-12:12	[O1.37] AUFWIND - piloting microalgae to advanced biofuels C. Schreiber, L. Nedbal, D. Behrendt*, <i>Forschungszentrum Jülich, Germany</i>	[O2.37] From lab to pond: Algal cultivation scale-up M.J. Griffiths, M. Mogale, S.T.L. Harrison*, <i>University of Cape Town, South Africa</i>

Room	Royal/Pacific	
12:12-14:15	Lunch and Poster session 3	
Rooms	Island	Palm
14:15-16:14	Session 8A - Algal Cultivation – Phototrophic Systems in PBRs Session Chair: David Kramer , <i>Michigan State University, USA</i>	Session 8B - Algal Cultivation – Heterotrophic Systems Session Chair: Stephen O'Learey , <i>National Research Council Canada, Canada</i>
14:15-14:32	[O1.38] An energy-integrated and modular biorefinery based on microalgae production in South of Italy C.G. Lopresto ^{*1} , R. Bruno ¹ , V. Calabrò ¹ , N. Arcuri ¹ ¹ <i>University of Calabria, Italy</i> , ² <i>CNR, Italy</i>	[O2.38] Nutrient recycling in a hydrothermal liquefaction (HTL) based algae biorefinery D. López Barreiro ^{*1} , M. Bauer ^{2,3} , U. Hornung ² , A. Kruse ^{2,3} , C. Posten ² , W. Prins ¹ , ¹ <i>Ghent University, Belgium</i> , ² <i>Karlsruhe Institute of Technology, Germany</i> , ³ <i>University of Hohenheim, Germany</i>
14:32-14:49	[O1.39] Balancing simplicity and accuracy in photobioreactor models involving CO2 mass transfer T.M. Louw [*] , S.T.L. Harrison, <i>University of Cape Town, South Africa</i>	[O2.39] The short-term lipid boost effect of xylose on cultures of Chlorellaceae and Scenedesmaceae wild strains G.B. Leite [*] , K. Paranjape, P.C. Hallenbeck, <i>Université de Montréal, Canada</i>
14:49-15:06	[O1.40] Exploring the tension between energy consumption, light provision and CO2 mass transfer through varying air flowrate in the airlift bioreactor S.T.L. Harrison [*] , M. Brighton, S. Jones, <i>University of Cape Town, South Africa</i>	[O2.40] Algal biomass production in a high rate algal pond treating wastewater from a rural South Australia community N. Buchanan, N.J. Cromar, H.J. Fallowfield [*] , <i>Flinders University, Australia</i>
15:06-15:23	[O1.41] Interactive effects of extremely high CO₂ levels and nitrogen starvation on growth, photosynthesis and lipid metabolism of a symbiotic chlorophyte <i>Desmodesmus</i> sp. 3Dp86E-1 A.E. Solovchenko [*] , O.I. Baulina, I.O. Selyakh, O.I. Gorelova, L.R. Semenova, O.B. Chivkunova, P.N. Scherbakov, E.S. Lobakova, <i>Lomonosov Moscow State University, Russia</i>	[O2.41] From basin to biocrude: Full processing of grown-in-wastewaters biomasses using the RT-Algae process B. Boëns ^{*1} , M. Gélinas ¹ , N. Bourdeau ² , G. Pilon ¹ , K. Adjallé ¹ , S. Barnabé ¹ , ¹ <i>University of Quebec in Trois-Rivières, Canada</i> , ² <i>Innofibre, Canada</i>
15:23-15:40	[O1.42] Dependence of specific light absorption rate on TAG content and productivity in continuous photobioreactors R. Kandilian [*] , A. Taleb, C. El-Khoury, J. Legrand, J. Pruvost, <i>University of Nantes, France</i>	[O2.42] Nutrient and water recycling in wastewater-based algae biofuel production R.E. Spierling ^{*1} , M. Hutton ^{1,2} , T. Lundquist ^{1,2} , A. Hill ¹ , E. Fresco ¹ , B. Crowe ¹ , ¹ <i>Cal Poly San Luis Obispo, USA</i> , ² <i>MicroBio Engineering, USA</i>
15:40-15:57	[O1.43] An energy-integrated and modular biorefinery based on microalgae production in South of Italy	[O2.43] Effects dilution rate and water recycling on productivity and harvestability of microalgae grown on wastewaters T. Lundquist ^{*1,2} , J. Kraetsch ¹ , M. Chang ¹ , C. Reiff ¹ , A. Roberts ¹ , M. Hutton ^{1,2} , R. Spierling ¹ , J. Benemann ² , G. Murawsky ¹ , S. Blackwell ¹ ¹ <i>Cal Poly State University, USA</i> , ² <i>MicroBio Engineering, Inc., USA</i>
15:57-16:14	[O1.44] Governing exponential growth rates of high-density microalgae cultures by automated adjustment of aeration in flat panel airlift photobioreactors P. Bergmann, C. Brauner [*] , S. Weickert, S. Welzmilller, W. Trösch, <i>Subitec GmbH, Germany</i>	[O2.44] Characterizing the fate and transport of Chemicals of Emerging Concerns (CECs) through novel integrated systems for bioenergy and manure management Y.H. Shin [*] , L. Schideman, <i>University of Illinois at Urbana - Champaign, USA</i>

Room	Royal/Pacific	
16:14-16:30	Coffee break	
Rooms	Island	Palm
16:30-17:55	Session 9A - New Technologies Session Chair: William McCaffrey , <i>University of Alberta, Canada</i>	Session 9B - Algal Cultivation – Heterotrophic Systems Session Chair: Heriberto Cerutti , <i>University of Nebraska – Lincoln, USA</i>
16:30-16:47	[O1.45] Microscale approaches offer new insights into microalgae research S.J. Sim ^{*1} , J.Y.H. Kim ¹ , H.S. Kwak ¹ , Y.K. Kim ² , B.K. Oh ³ , ¹ <i>Korea University, Republic of Korea</i> , ² <i>Hankyong National University, Republic of Korea</i> , ³ <i>Sogang University, Republic of Korea</i>	[O2.45] Nutrient recycling by secondary fermentation of lipid production wastewater derived from heterotrophic microalgae cultivation J. Lowrey ^{*1} , M.S. Brooks ¹ , R.E. Armenta ² , ¹ <i>Dalhousie University, Canada</i> , ² <i>Mara Renewables Corporation, Canada</i>
16:47-17:04	[O1.46] The chemical-physical properties of bio-crude derived from the hydrothermal liquefaction of algae F.M. Hossain ^{*1,2} , R.J. Brown ^{1,2} , E. Stephens ⁴ , T.J. Rainey ^{1,2} , J. Kosinkova ^{2,3} , Z. Ristovski ^{2,3} , B. Hankamer ⁴ , ¹ <i>Queensland University of Technology (QUT), Australia</i> , ² <i>School of Chemistry, Physics and Mechanical Engineering, Australia</i> , ³ <i>International Laboratories for Air Quality and Health, QUT, Australia</i> , ⁴ <i>University of Queensland, Australia</i>	[O2.46] Influence of hydraulic retention time on the organic matter and nutrients removal in a high rate pond using a microalgae-bacteria system G. Buitrón [*] , J.S. Arcila Henao, <i>Universidad Nacional Autonoma de Mexico - Instituto de Ingenieria, Mexico</i>
17:04-17:21	[O1.47] Valorization of microalga <i>Dunaliella tertiolecta</i> biorefinery residue for renewable fuels and soil amendment via pyrolysis M. Francavilla ^{*1,3} , P. Kamaterou ² , S. Intini ^{1,3} , M. Monteleone ¹ , A. Zabaniotou ^{1,2} , ¹ <i>University of Foggia, Italy</i> , ² <i>Aristotle University of Thessaloniki, Greece</i> , ³ <i>National Research Council, Institute of Marine Science, Italy</i>	[O2.47] Two-phase microalgae growth using various alternative carbon sources for enhancement of lipid production in an open system M. Gélinas, B. Boëns, A. Moreau [*] , K. Adjallé, S. Barnabé, <i>Université du Québec à Trois-Rivières, Canada</i>
17:21-17:38	[O1.48] Demonstration and logistics analysis of low cost stabilization of algae biomass through blending with terrestrial biomass D.T. Newby, B.D. Wahlen [*] , D.M. Stevens, J.A. Lacey, M.S. Roni, K.G. Cafferty, <i>Idaho National Laboratory, USA</i>	[O2.48] Swine wastewater treatment coupled with biomass production using macroalgae biofilters O. Nisiforou ^{*1,2} , S. Orfanidis ² , A.G. Charalambides ¹ , N. Kalogerakis ³ , ¹ <i>Cyprus University of Technology, Cyprus</i> , ² <i>National Agricultural Research Foundation, Fisheries Research Institute, Greece</i> , ³ <i>Technical University of Crete, Greece</i>
17:38-17:55	[O1.49] Thermo-kinetic modeling of supercritical CO₂ processes for biodiesel production C.S. Silva ^{*1} , A. Barberio ¹ , J. Zimmerman ² , L. Soh ³ , W.D. Seider ¹ , ¹ <i>University of Pennsylvania, USA</i> , ² <i>Yale University, USA</i> , ³ <i>Lafayette College, USA</i>	[O2.49] Cultivating microalgae on an outdoor algal turf scrubber® with dairy manure effluents in Portales, New Mexico J. Yan, <i>Eastern New Mexico University, USA</i>
Room	Island/Palm	
17:55-18:15	Conference Closing	