

# 3RD ALGAE WORLD ASIA

19-20 Oct 2010  
Singapore

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## DAY 1 - 19 Oct 2010, Tuesday

- 08:00 Registration and Coffee  
09:00 Welcome and Speed Networking  
09:10 Chairman's Remarks  
*Dr. John R. Benemann, CEO, MicroBio Engineering, Inc.*

### Practical Experiences in Algae Production / Value Proposition in Carbon Capture

#### 09:15 Succeeding in the Algae Business – Moving Away from 'Or' to 'And'

- Moving from 'or' to 'and': No longer raceway 'or' photobioreactor, should be raceway 'AND' photobioreactor, also algae for fuel 'and' feed 'and'...
- What business model to adopt?
- What markets to serve?
- Project implementation challenges
- Infrastructures required
- Building partnership and alliances
- Outlook of the algae sector and end-use markets

*Vitor Verdelho Vieira, President, Necton Chief Development Officer, AlgaFuel*

#### 09:45 Growing Algae from Stack Gas Emissions at a Cement Plant

- Case study of Pond Biofuels and St Marys Cement

*Martin Vroegh, Environment Manager, St Marys Cement Inc.*

#### 10:15 Discussion followed by Networking Break

#### 10:55 Technological Development of Algal Carbon Capture and Storage

*Tony St Clair, Agribusiness Manager, MBD Energy Limited*

#### 11:25 Commercial Production of Microalgae in Korea and its Alternative Markets & Applications

*Dr. Mi-Kyung Kim, Chief Development Officer, EcoPhycoTech Ltd*

#### 11:55 Discussion

#### 12:10 Networking Lunch

#### 13:30 Chairman's Remarks

*Matt Caspari, Managing Director, Aurora Algae Pty. Ltd.*

### Value Proposition in Waste Water Treatment

#### 13:35 Wastewater Treatment with Biofuels Production in High Rate Algal Ponds (HRAPs)

- Benefits of wastewater treatment with HRAPs including efficient nutrient removal and natural disinfection
- Enhancing the performance of HRAP by flue gas CO2 addition
- Production of colonial algae simply harvested gravity settling

- Conversion of algal biomass for biofuels (biocrude, biodiesel, biogas) and use as local community niche distributed energy sources

*Dr. Rupert Craggs, Principal Scientist and Manager - Aquatic Pollution Group*

*National Institute of Water and Atmospheric Research (NIWA)*

#### 14:05 Large-scale Algae Biofuels Production with Municipal and Agricultural Wastewaters

- Algae Biofuels Production: limitations of water, carbon and nutrients
- Using wastewaters to supply algal biofuels production processes
- Economics of large-scale algal biofuels production using wastewaters
- Global potential for algal biofuels production using wastewaters

*Dr. John R. Benemann, CEO, MicroBio Engineering, Inc.*

### Algae Technology Development in Asia Pacific

#### 14:35 Algae Research in Singapore - Systems Biology of Lipid Metabolism in Algae

- Combined transcriptome and lipidome analysis of Chlamydomonas
- MicroRNA-mediated gene expression knockdowns as a probe of algal lipid metabolism
- De novo transcriptome sequencing of diverse algal species

*Dr. Neil Clarke, Deputy Director, Genome Institute of Singapore*

#### 15:05 Discussion followed by Networking Break

#### 15:45 China: Genetic Foundations of Robust Oil Production in Microalgae – New Generation Genomics Technologies for Algal Feedstock Development

- Current status and challenges of oilgae feedstock research and development
- Phylo-Genomics approach to investigate and engineer the genomic diversity, function and evolution of microalgal oil production using Nannochloropsis as a model

*Prof. Dr. Jian XU, Group Leader of Functional Genomics Group, Director of Bioenergy Genome Center, Qingdao Institute of Bioenergy and Bioprocess Technology (QIBEBT)*

#### 16:15 Will Ocean be the Blue Ocean for Future Fuels? – Development in Korea

- Why we should use ocean (not land) for our future biofuel production
- Possibilities and challenges in microalgal cultures in ocean
- Cost analysis between the cultures in the ocean and on the land
- Introduction of Korean National Project on Marine Bioenergy Program

*Prof. Dr. Choul-Gyun Lee, Professor, Department of Biological INHA University*

#### 16:45 Development of Algal Biofuel Production in Australia

- The need for biodiesel in Australia and the role that algae plays
- The myriad choices for the Australian algal fuel producer
- Algal species - GMO/wild/selectively bred: Growth in ponds or photo-bioreactors; salt-water, fresh-water or waste-water as the medium; Natural or artificial light;
- Energetics and greenhouse gas emissions of algal biofuel production

*Dr. Tom Beer, Leader, Transport Technologies & Sustainable Fuels, Energy Transformed Flagship, Commonwealth Science and Industrial Research Organisation (CSIRO)*

#### 17:15 Discussion followed by End of Day 1

#### 17:30 Cocktail Reception for Speakers and Delegates

## DAY 2 - 20 Oct 2010, Wednesday

#### 09:00 Chairman's Remarks

*Tony St Clair, Agribusiness Manager, MBD Energy Limited*

### Development of Algae-Based Bioenergy

#### 09:05 Commercial Viability of Large Scale Algal Biofuel Production & Technological Challenges

*Matt Caspari, Managing Director, Aurora Algae Pty. Ltd.*

#### 09:35 Carbon Finance Support for Bio-Diesel Production from Algae

*Rahul Kar, Director, Carbon and Sustainability Advisory KPMG Corporate Finance*

#### 10:05 Discussion followed by Networking Break

#### 10:40 The Big Algae Build-Out: Why should CO2 Generators Participate and How?

*Paul Reep, Senior Technical Advisor, OriginOil, Inc*

#### 11:10 Development of Bioethanol Production Technology from Red Macroalgae

*Dr. M. K. Shin, CEO/Vice-President, BiolSystems Co., Ltd.*

#### 11:40 Enhanced Biofuel Production from Microalgae by adding CO2 to Stimulate Lipid Biosynthesis (Biodiesel) and by Hydrothermal Processing (Syngas)

- Research aims to improve the efficiency and reduce the production costs of biodiesel and of bio-synthetic natural gas from microalgae biomass by:
- Demonstrating the technical and economical feasibility of an innovative process for syngas production by hydrothermal processing of microalgae
- Adding CO2 and optimizing the cultivation conditions to enhance oil production by selected microalgae

*Dr. Jean-Paul Schwitzguébel, Permanent Sr Scientist, Lab. for Environmental Biotechnology Swiss Federal Institute of Technology (EPFL) Lausanne*

#### 12:10 Final Discussion

#### 12:25 Networking Lunch

#### 13:45 End of Conference