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Wednesday 16 November 2016 (Continuous)

16:50 - 17:10	<p><b>Ms. Chayanee Laotrakul</b> "Using euglenoid pigments as photosensitizer for dye sensitized solar cell"</p> <p><b>Mr. Nattawarit Nunraksa</b> "Production of fermentable sugars, levulinic acid and HMF from Thai Agarophytes <i>Gracilaria tenuistipitata</i> and <i>G. fisheri</i> by sequential acid hydrolysis"</p>	<p><b>EO-17</b></p> <p><b>EO-18</b></p>	<p><b>Ms. Risa Swandari Wijihastuti</b> "Biomass productivity and photosynthesis of different <i>Botryococcus braunii</i> races grown in biofilm"</p> <p><b>Ms. Tasneema Ishika</b> "Effect of gradual salinity increase on the biomass productivity of saline microalgae with commercial interest"</p>	<p><b>BO-14</b></p> <p><b>BO-15</b></p>	<p><b>Ms. Prachi Varshney</b> "Selection and cultivation of a micro-algal species for optimal biological CO<sub>2</sub> capture and utilization"</p> <p><b>Mr. Robby Manrique</b> "Effects of salinity on the CO<sub>2</sub> permeation across lipid bilayer for microalgae biofixation: A molecular dynamics study"</p>	<p><b>CO-08</b></p> <p><b>CO-09</b></p>
17:30 - 17:50	<p><b>Ms. Indrayani Indrayani</b> "Long-term reliable culture of a halophilic diatom, <i>Amphora</i> sp MUR 258, in outdoor raceway ponds"</p>	<p><b>EO-19</b></p>	<p><b>Mr. Panjaphol Chaisutyakorn</b> "Effect of temperature on growth, lipid, fatty acid and biodiesel properties of marine microalgae"</p>	<p><b>BO-16</b></p>	<p><b>Ms. Gargi Biswas</b> "Uptake of fluoride by living cyanobacteria and assessment of lipid production under fluoride stress condition"</p>	<p><b>CO-10</b></p>
17:50 - 18:10	<p><b>Dr. Siok Koon Yeo</b> "Physical and functional properties of seaweed-based meat analogues"</p>	<p><b>EO-20</b></p>	<p><b>Prof. Ma'ruf Kasim</b> "Comparison of floating cage and raft line to cultivate <i>Kappaphycus alvarezii</i> in Indonesia"</p>	<p><b>BO-17</b></p>	<p><b>Asst. Prof. Rama Kant</b> "Allelopathic effect of <i>Microcystis</i> Kütz on growth of other planktonic blue-green algae"</p>	<p><b>CO-11</b></p>



## Long-term reliable culture of a halophilic diatom, *Amphora* sp MUR 258, in outdoor raceway ponds

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The microalgae industry as a source of high value products (i.e.  $\beta$ -carotene, astaxanthin) was established over fifty years ago. However, there is a need for new species and new products to expand the microalgae industry. The objective of this study was to establish the reliability and productivities of the long term growth of newly isolated halophilic diatom, *Amphora* sp MUR 258 (Bacillariophyceae), in outdoor paddle-wheel driven raceway ponds in Perth, Western Australia. This diatom could a potential future source of long-chain polyunsaturated fatty acids. The *Amphora* sp was grown in outdoor raceway ponds as a semi-continuous culture for about 13 months at a culture salinity between 8.6 and 14.9% NaCl. The highest cell density ( $167 \times 10^4$  cells.mL<sup>-1</sup>), specific growth rate ( $0.294$  d<sup>-1</sup>) and biomass and lipid productivities ( $24$  and  $6.8$  g.m<sup>-2</sup>.d<sup>-1</sup>, respectively) were achieved in summer. The annual average of biomass and lipid productivities were  $7$  and  $2.2$  g ash-free dry weight.m<sup>-2</sup>.d<sup>-1</sup>, respectively. Minor contamination by a *Navicula* sp. was seen during winter, but was not a significant problem. No major protozoan contamination was seen. These results indicate the potential of reliable large-scale *Amphora* sp. cultivation as a suitable source of diatom lipid.

**Keywords:** Long-term culture, *Amphora* sp MUR 258, Raceway pond