Optical Device for In-Line and Real-Time Monitoring of Microalgae

Invention:

Current methods of measuring biological variables such as cell mass concentration, cell size, cell morphology, population composition, pigments, and liquid content are currently either prohibitively expensive, too laborious, or destructive to be employed for real-time monitoring and control. Existing sensors for each individual application are mostly designed for environmental concentrations and as such are not suited for microalgae growth. This invention attempts to facilitate the process of measurement by introducing an enclosed all-in-one solution using various optical emitters to harmonise the measurement process for real-time, microalgae growth.

Applications:

This invention may be used in many applications requiring biological sensors.

Advantages:

The present invention has an improvement on the state-of-the-art in several ways:

- Harmonised sensor suite for variety of applications
- Ability to carry out real-time measurement of high concentration solutions
- Ability to carry out non-destructive measurements.
- Non-prohibitive pricing

Lead Inventor:

Kacira, Murat

Inventors:

Murat Kacira

Associate Professor, Ag & Biosystems Engineering
Fei Jia
Graduate Associate, Agric & Biosystems Engr

Kimberly Ogden
Professor, Chemical and Environmental Engineering

Gregory Ogden
Research Associate Professor, Chemical and Environmental Engineering