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#### Intellectual Property Status:

Patent Pending

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# **Invention Description**

With the advent demand for fuel cell technologies, there exists a need for improved methods of mass production of the key ingredients in biofuel cells, such as biomass or photosynthetic bacteria.

Researchers at Arizona State University have developed a highly configurable, modular system for scale-up studies of photosynthetic microorganisms. This fully flexible reactor is designed to provide complete user configurability in terms of sensor and actuator capabilities for extensive physiological characterization of cultivated organisms. The flexible platform can facilitate large scale studies of continuous cultivation methods. This technology is superior to current commercially available reactors in that it accommodates full modularity of actuators and sensors, enabling a flexible configuration for more complete experimental control. Additionally, the expandable culture volume is suitable for investigating problems and challenges associated with large-scale cultivation of photosynthetic organisms.

## **Potential Applications**

- Large scale cultivation of algae, microalgae, cyanobacteria
- Byproduct harvesting for food supplements, biofuel, feedstocks, aquaculture, fertilizers and more

## **Benefits and Advantages**

- Complete user configurability
- Continuous, multiparameter, outdoor culture