

Algae Technologies for Water Quality

Algae are being explored as an option to remove pollutants from industrial and municipal wastewater. The algae biomass requires nitrogen and phosphorus for growth, which can be supplied by industrial and municipal wastewater. Iowa State University is conducting research using biofilm-based algal reactors to scale up new algal biomass production technologies for wastewater treatment. One technology developed is the rotating algal biofilm (RAB) system, a series of serpentine belts that alternate between the wastewater and the air. The algal biomass grown can be manufactured into fertilizer, bioplastics and other products depending on the wastewater source. The team also has developed a portable RAB system that can be transported to industrial and municipal sites to treat wastewater.

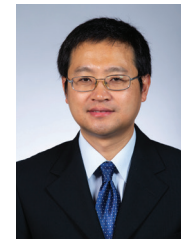
Accomplishments

- » Awarded two US Patents (US Patents #9,932,549 and #10,125,341) for the novel algal reactor design and operation. Developed the RAB system for wastewater treatment that is being commercialized by a student-led startup company.
- » Received over more than \$4,000,000 of grant funding and private investment to commercialize the technology.
- » Received a USDA Small Business Innovation Research grant to assist with commercialization of the technology.
- » Formed a partnership with the City of Chicago that implementing the RAB system for the wastewater at one of their facilities.

Future Work

- » Implement commercial RAB systems to treatment rural community municipal lagoon system throughout the U.S.

Team Members



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