Engineering strategies for continuous biomass collection of *Anabaena 33047*

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Cyanobacteria provide an accessible system for studying sustainable biotechnology because of their roles in nitrogen fixation, CO -capture, and nutrient cycling. A persistent challenge in experimental work, however, is biomass collection, which is often performed in labor-intensive batch processes that interrupt growth and increase the risk of contamination. This project explores a small-scale rotating biofilm reactor designed to continuously collect *Anabaena 33047* biomass under laboratory conditions. The reactor uses a simple vertical filter paper substrate mounted on a rotating frame, allowing cells to attach, grow, and be harvested with minimal handling. Trials were conducted to assess substrate stability, growth consistency, and ease of biomass removal in a controlled bench-top environment. Results show that this setup can reliably maintain cultures while simplifying collection, making it a useful tool for laboratory teaching, training, or preliminary research studies. By reducing complexity and cost, this small-scale system provides a practical entry point for learning about attached growth systems and continuous biomass collection in cyanobacteria.

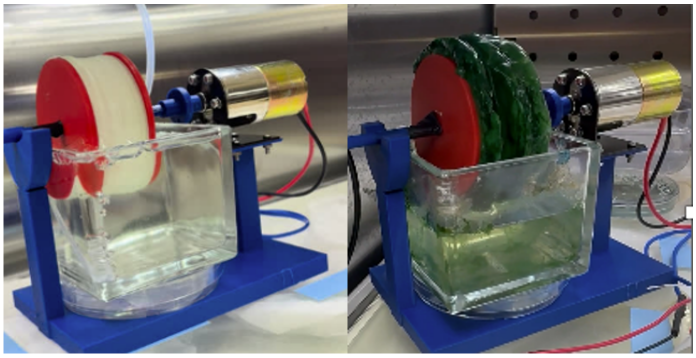

Figure 1. A small-scale biofilm reacter for continuously biomass collection of *Anabaena 33047*.