STUDENT SUSTAINABILITY COMMITTEE

Scope Change

From time to time unforeseen challenges or opportunities can affect the planned budget, timeline, or overall goals of a project funded by the Student Sustainability Committee. Past examples of these situations include projects coming in under budget but having additional opportunities available, or inclement weather delaying the planting of agriculture projects.

Below please include a brief project summary and your requested changes. Attach additional documents as needed. If you have any questions, please contact the Student Sustainability Committee at sustainability-committee@illinois.edu.

General Information

Project Name: Membrane-Based Removal of Water from Oil

Total Amount Requested from SSC: $9,870.40

Contact Information

Applicant Name: BK Sharma
Unit/Department: Illinois Sustainable Technology Center
Email Address: bksharma@illinois.edu

Project Information

Please provide a brief background of the project, the goals, and the desired outcomes:

Background:

Biodiesel often has emulsified water as a result of water washing. Our project involves vacuum filtration through a hydrophilic membrane to demulsify water-in-oil emulsions. In this process, tiny water droplets coalesce near the pore surface, while the aqueous phase penetrates through the membrane with oil. This leads to the spontaneous formation of two separate phases, oil, and water. Through this process, the water content in kerosene sharply decreases, increasing the electric resistance by almost 40 times. The purpose is to do the same with biodiesel.

Goals/desired outcomes:

Create a fully functioning water washing system to be integrated into the existing IBRL setup

Please provide a brief summary of how students will be involved in the project's changes:

The project is continuing to be led by students, who will perform the data collection through oil and water testing. Additionally, the students will compile data from their experiments and analyze it as well as preparing semesterly reports for the committee.

Please provide a brief summary of your requested scope change. How is your request different from your original plan?

The request is for a no-cost extension for the SSC project, "Membrane-Based Removal of Water from Oil" through Dec. 31, 2021. The project started in January 2020 and was supposed to end on December 31, 2020, but due to the COVID shut down in March 2020, the students were not allowed in the building, and the project didn't progress as planned. The revised project end date is 12/31/2021. As the project was anticipated to be completed within a three-semester time frame, all dates were revised according to that estimate. However, these are tentative dates, as the pandemic greatly affects the rate at which work can be completed. Additionally, if the student workers are not available during the summer, the project milestones will be completed by the alternate dates listed below.

Task	Timeframe (# of weeks to completion)	Estimated Completion Date	Revised Completion Date
Oil Testing-Olive Oil	6-9	End of March - Mid April 2020	End of April - Mid May 2021
Various Oil Tests	9	Late June - Mid July 2020	Early August 2021 (If students available for summer, if not, then early October)
Biodiesel Tests	9	Late September - Early October 2020	End of December/ Early February (If summer not worked, then early

			March)

Additional comments (Optional)

N/A