



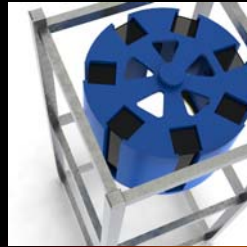
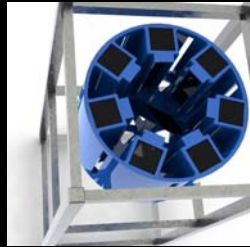
# UCI Satellite-II



**Mission Objective:** To advance the understanding of the use of solar radiation to purify contaminated water for extended space exploration

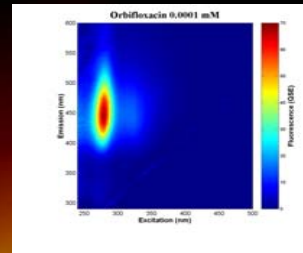
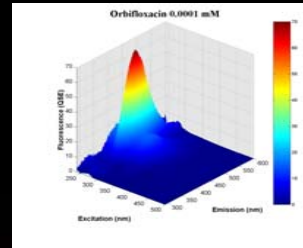
## Background

Scientific payload aimed to study water purification using high energy solar radiation. Compounds such as Orbifloxacin and Suwannee River DOM to be tested for their fluorescence properties.

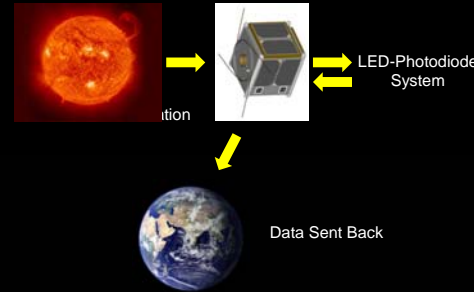


Model Compound Orbifloxacin Fluorescence Properties

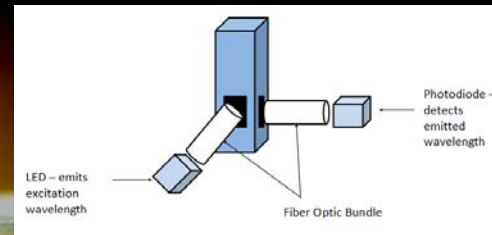
Proposed Payload Designs (Above)



## Payload Experimental Setup

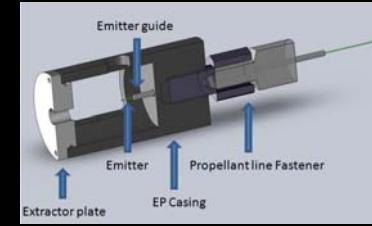


## LED-Photodiode System



## Electric Propulsion System

Electric propulsion system for attitude and orbit control. Orbital control of the satellite will be used for testing in the varying radiation environment of space.



Propulsion team working on power unit



## Innovation

The present device used to purify water on the International Space Station is about the size of a small car where the UCI Satellite-II Team hopes to prove water purification is possible inside a 2 unit cube satellite.



The satellite will also feature advanced active attitude and altitude control system with colloid thruster electric propulsion technology.

## Current Progress

Finished the preliminary design process and selected mission architecture and are currently designing the subsystems and interface

## Future Plans

Winter Quarter – Simulation/Performance Testing  
Spring Quarter – Manufacturing Process, systems integration and testing

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Electrospray system (left), from where ionic fluids are ejected and accelerated to provide thrust. Vacuum Chamber (right) used for testing propulsion unit.



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