E³UDRES²

Engaged and Entrepreneurial European University as Driver for European Smart and Sustainable Regions

How robotics can help the microalgae cultivation in bio-waste recycling.

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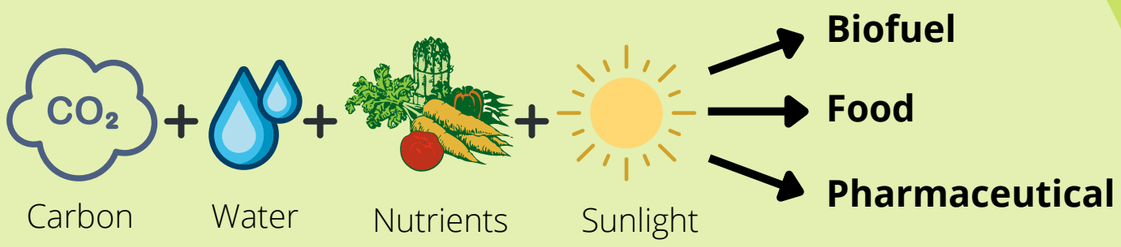
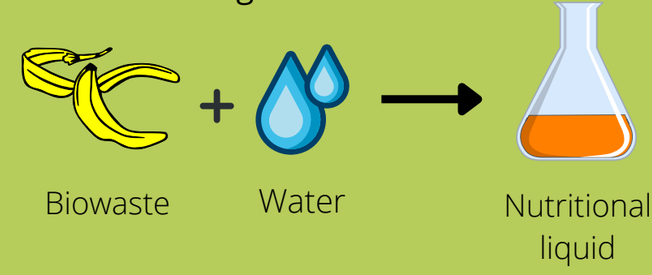
WHY MICROALGAE?



Microalgae can be used to produce carbon-neutral biofuels (diesel, gasoline, jet fuel, butanol, ethanol, methane, hydrogen), used for nutrition (human and animal) and pharmaceuticals (proteins, drugs) without competing with food resources for arable farmland.

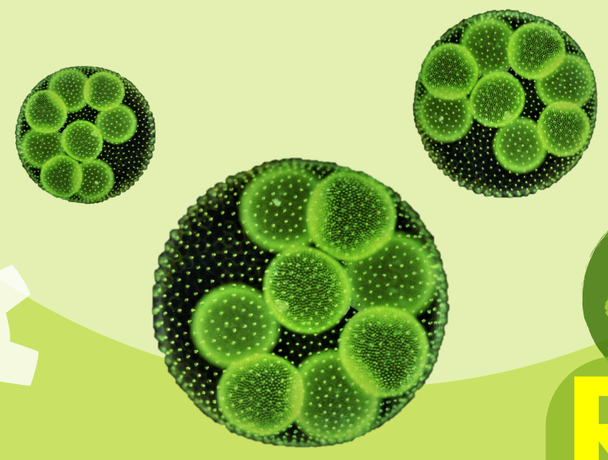
BIO-WASTE RECYCLING

Agricultural bio-waste was used as a source of biomass to produce the nutritional liquid that feeds the microalgae.



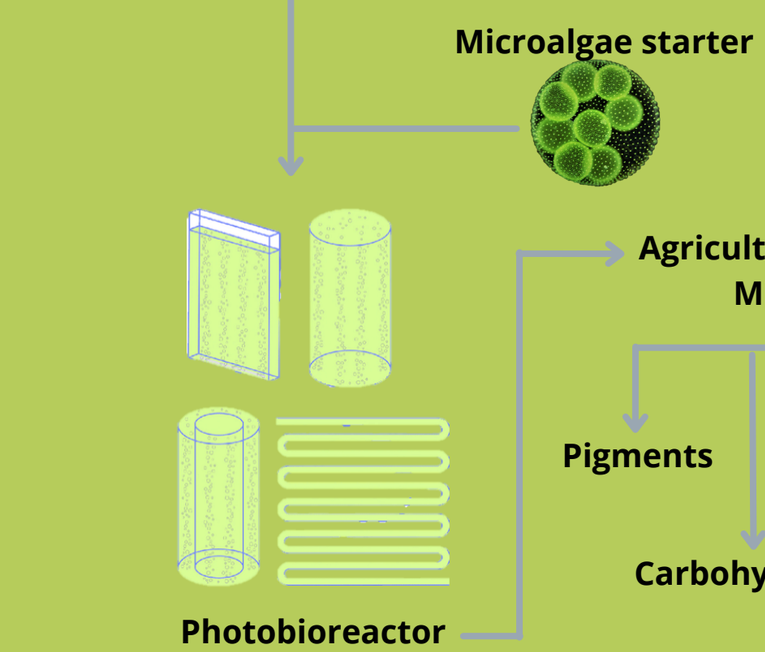
Algal technology is effective recycling and valorization of nutrients.

- ✓ Lower the waste treatment cost.
- ✓ Reducing environmental impact.
- ✓ Reduction of greenhouse gas emissions.



ROBOTICS + MICROALGAE

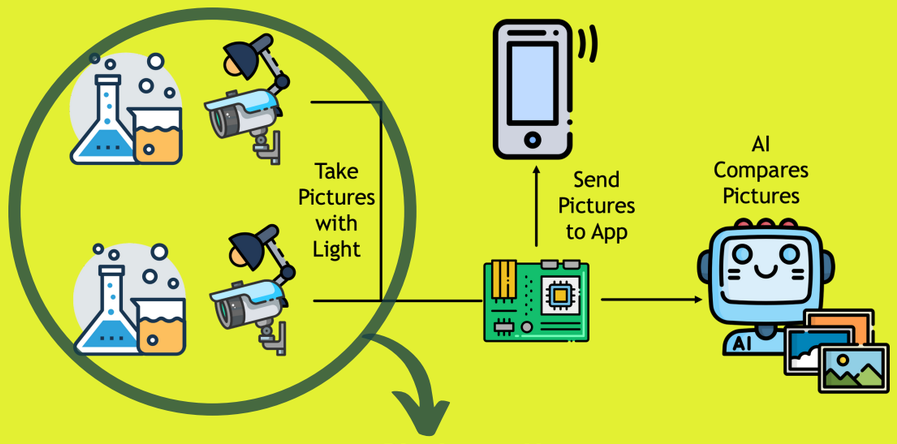
MICROALGAE CULTIVATION

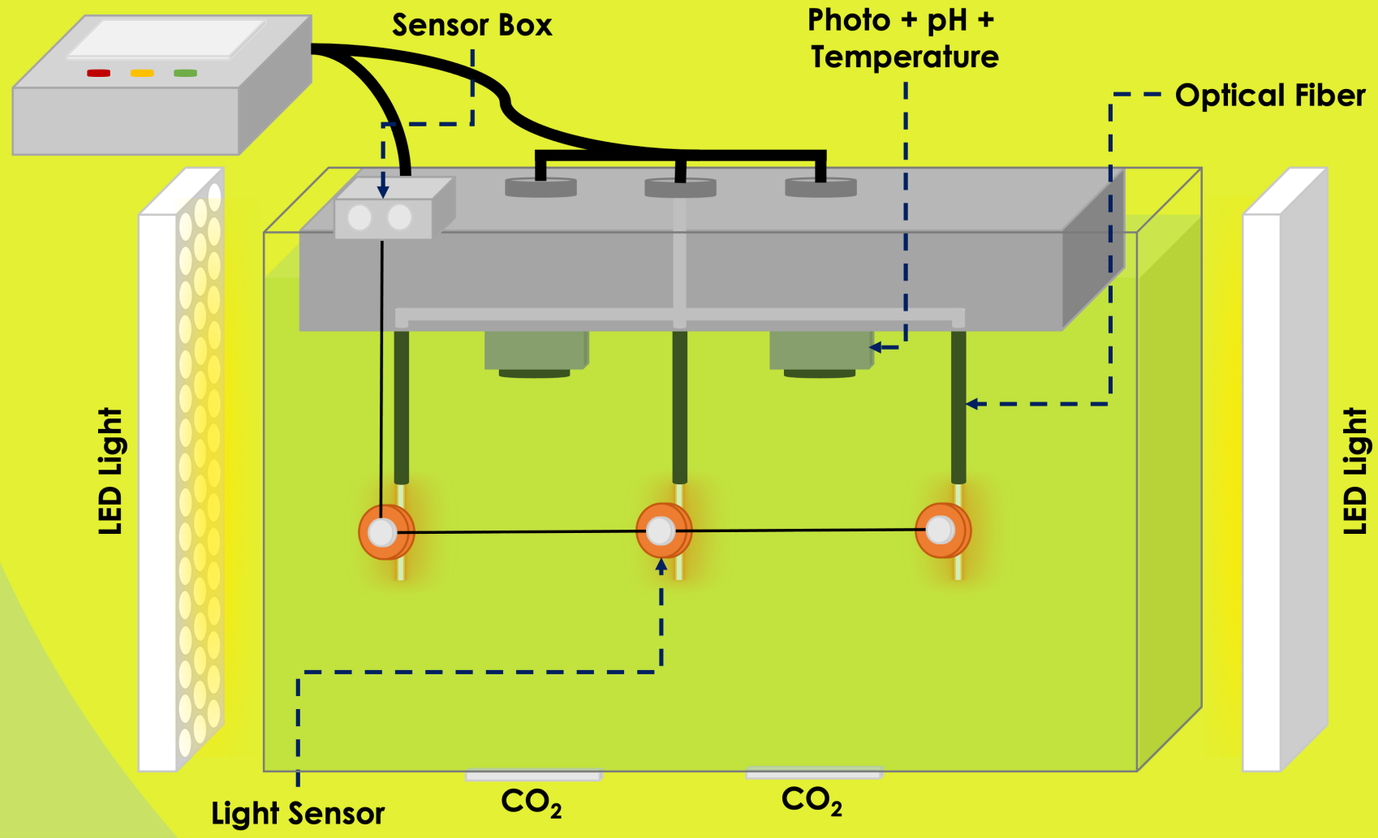


PROJECT PROTOTYPE

To control and measure how they grow, experimenting with using different types of biowaste as a nutritional source, and to control the overall trial in the lab, was necessary to come up with a more automatic and less expensive method to measure parameters such as microalgae contaminations, pH, temperature and microalgae growth.

A simple system prototype to control and measure the growth factor of microalgae by robotics had been made.





INFLUENCING FACTORS OF MICROALGAE GROWTH