

Algae Alight

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Project Information (EN)

Bioluminescence is the biological process that involves the emission of light by living organisms. In most cases, bioluminescence is used as a means to scare off predators or acting as a form of camouflage. Bioluminescent organisms are found mainly in the marine environment, where it is estimated that more than 75 of the organisms have the ability to produce light. This six-month M.Sc. graduation research project investigates and harnesses the potential of using bioluminescent algae as a living medium. The species used in this project are called dinoflagellates, a type of microalgae. Specifically, the research focuses on a species called *Pyrocystis fusiformis*. Which are known for its relatively high light emission and naturally occurs in the tropical and subtropical areas of the ocean. The creation of the project involved extensive research into the natural habitat of the organism and how to seamlessly integrate it into an artificial environment without compromising its well-being, this research method is called Organism Driven Design. The research culminates in the development of a Living Light Interface. This interface encompasses an algae imaging system in which digital input is translated into the biological realm. In this harmless setup, their natural abilities to produce light are combined and enhanced with programmed vibrational patterns to produce a captivating light show. One example of the Organism Driven Design method is that the algorithms used to create the lighting patterns are specifically designed to give the algae time to rest and recharge, thus preventing overstimulation. Ultimately, this research provides insights into the behaviour of bioluminescent organisms and the integration of living entities into design, blurring the boundaries between nature, technology, and design.

Image List

Filename	Caption	Credit
fotozoeweb_1696335133.jpg		

The images above are included in the ZIP under /images.