

the PETAL Concept

USING NATURE'S PROCESS TO ACHIEVE USEABLE POWER

Purpose: Provide solar power using plant biotech, nanotech.

Overview: Biosolar system used to power multiple platforms & multiple configurations.

Type: Biosolar concept to integrate photosynthetic proteins with nanotechnology to produce power. Unlike batteries, photovoltaics or fossil fuel powered generator. The 'fuel' is water, not oil.

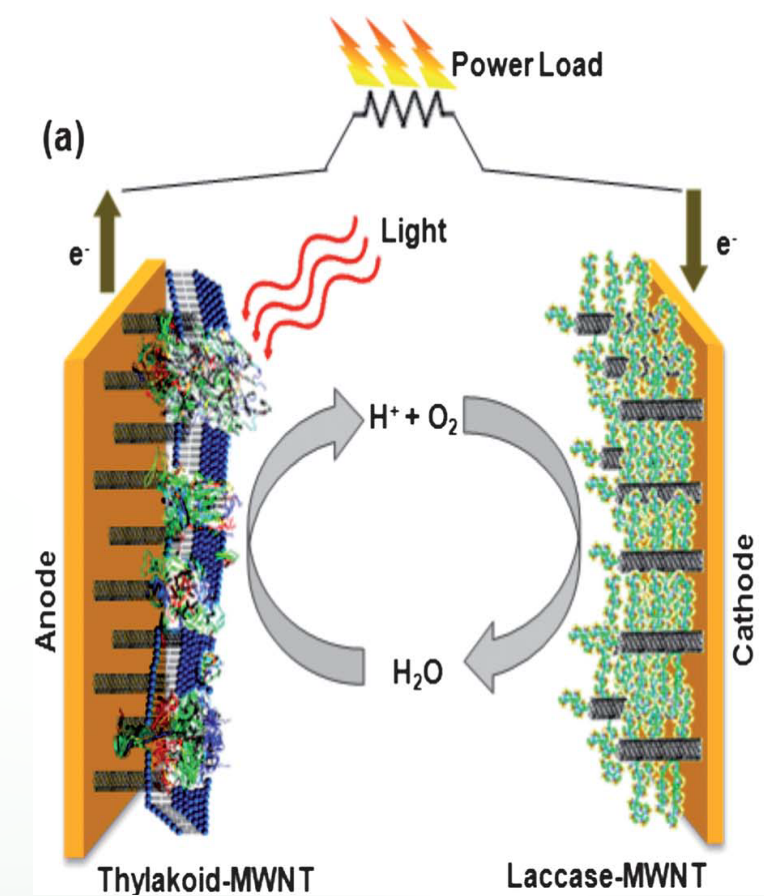
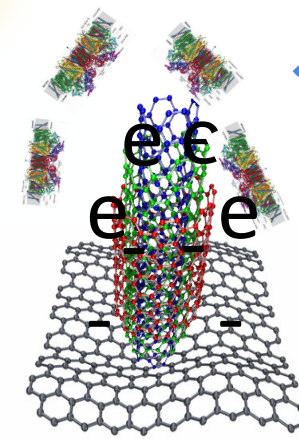
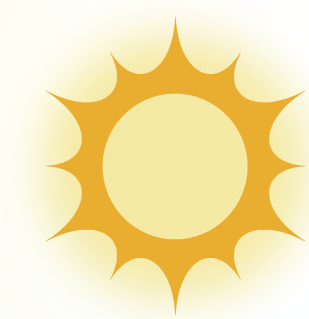
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METRICS:

Decisive Advantage: Significant. Early works shows potential for significant efficiency increase over photovoltaics. Optimal photovoltaics are 25% efficient. PETAL potential is in the 50% range

Applications: Flexible skin that is conformable to any shape to provide power. Scalable from nano scale to micro to macro levels.

Provide Power to nanobots, portable radios, wearable sensors, shelters, UAV in level flight, solar farms.



FEASIBILITY:

Technical Risk: High. New technology in early research. Brass box testing shows promise at bench level ($20.44 \pm 1.58 \mu\text{A}/\text{cm}^2$). Patent number US20120279552A1. Would require advancement in several disciplines to create new technology. Individual components are understood, combination would create sea change.

Affordability/ Cost: Moderate. Raw materials are inexpensive & plentiful.