

Scientists Discover Methods of Harvesting Electricity from Plants

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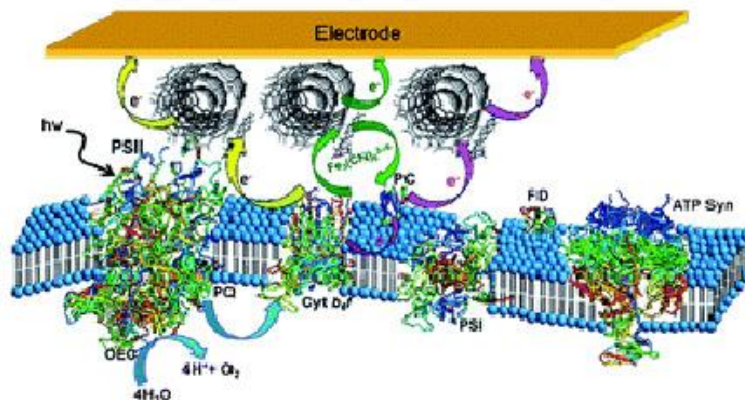


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by [Inhabitat Staff](#)

When it comes to capturing solar energy, plants are first in their class. Able to function at nearly 100 percent quantum efficiency, they can produce an equal number of electrons for each photon captured. Using these photons to split water into hydrogen and oxygen, the resulting electrons are able to create sugars that help the plant to live and reproduce. Researchers at the [University of Georgia](#) have developed a way to harness the power of the [photosynthetic process](#) to generate a clean form of electricity. Ramaraja Ramasamy, assistant professor in the UGA College of Engineering, explained how his team manipulated the biology for human advantage.





During photosynthesis, electrons freed from water molecules go towards producing sugars for the plant's survival. Structures within the plant cell called "thylakoids" store the energy from the sun. The scientists were able to alter proteins within the thylakoids to interrupt the pathway along which electrons flow, placing the thylakoids against a backing of carbon nanotubules 50,000 times finer than a human hair. Acting as an electrical conductor, the nanotubules were able to take the electrons from the plant and move them along a wire.

During experiments, the process resulted in current levels that were twice the power of current systems. While more work needs to be done to bring the technology to market level, the developments could potentially improve the function of solar panels, remote sensors, and other electronic equipment. "Clean energy is the need of the century," said Ramasamy. "This approach may one day transform our ability to generate cleaner power from sunlight using plant-based systems." Instead of noisy generators, turbines, or coal-fire stations, it is possible that we may one day have real "power plants" in our neighborhoods.

Via Phys.org

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