Solar Power To Help Convert Carbon Dioxide Into Fuel : Renewable Energy News

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Solar Power To Help Convert Carbon Dioxide Into Fuel

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Microbiologist Derek Lovley and colleagues at the University of Massachusetts Amherst are developing a new technology for converting carbon dioxide into transportation fuels, with the help of special micro-organisms and solar power.
The team was last month awarded an initial USD $1 million research grant by the Department of Energy to refine the process, which is expected to butanol and other useful chemicals.
Known as microbial electrosynthesis (ME), the technology is based on specialized micro-organisms feeding on electrons delivered with electrodes. According to Mr. Lovley, ME is basically a new form of photosynthesis, where carbon dioxide and water are combined to produce organic compounds and oxygen is released as a by-product.
While any source of electricity will do, the technology is primarily designed to be used with solar panels. While being a clean, renewable source of energy, the solar panels, can also harvest energy 100 times more effectively than plants.
Other applications for the technology could include scrubbing carbon dioxide from the smokestacks of coal-fired power plants.
Whereas plant-based approaches such as fermentation to ethanol require huge amounts of energy for processing and also generate a great deal of waste, ME technology produces organic products directly from carbon dioxide.
With sunlight being the most abundant source of renewable energy available, the ME technology could also solve one of the major challenges of solar power - energy storage for periods where conditions are unfavourable; such as night time. ME technology can convert the electrical energy directly into fuels and chemicals that are easily stored and distributed when needed, using existing infrastructure.
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