



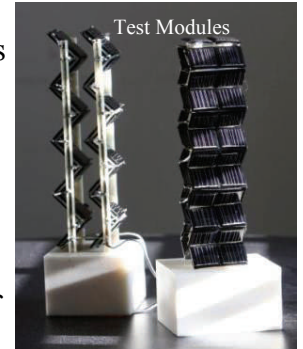
# Penzance B.S.A.C.

## Conservation Officer's report

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Intensive research around the world has focused on improving the performance of photovoltaic cells and bringing down their cost. But very little attention has been paid to the best ways of arranging those cells, which are typically placed flat on a rooftop or other surface, or sometimes attached to motorized structures that keep the cells pointed toward the sun as it crosses the sky. Now a team of MIT researchers have come up with a very different approach; building cubes or towers that extend the solar cells upwards in three-dimensional configurations. Amazingly, the results from the structures they've tested show power output ranging from double to 20 times that of fixed flat panels with the same base area. The biggest boosts in power were seen in the situations where improvements were most needed: in locations far from the equator, in winter months and on cloudier days. The new findings were based on both computer modelling and outdoor testing of real modules.

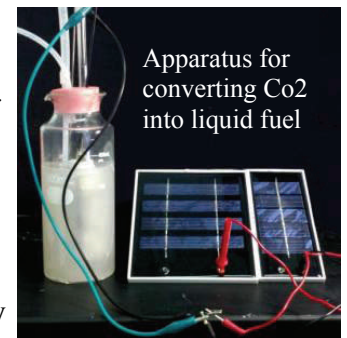


A widely used insecticide can threaten the health of bumblebee colonies and interfere with homing abilities of honey bees, according to two studies, one by a UK team and one by a French Team.



Bumblebees and Honeybees are important pollinators of flowering plant, including many fruit and vegetable crops. Each year, for example, honeybee hives are transported from field to field to help pollinate almond, apple, and blueberry crops among others. In recent years honeybee populations have rapidly declined, in part due to a phenomenon known as Colony Collapse Disorder. Bumblebee populations have been suffering as well. Some Bumblebee species have declined hugely. For example, in North America, several Bumblebee species which used to be common have more or less disappeared from the entire continent. In the UK three species have gone extinct. Researchers have proposed multiple causes for these declines, including pesticides, but it's been unclear exactly how pesticides are inflicting their damage.

Imagine being able to use electricity to power your car, even if it's not an electric vehicle. Researcher for the first time have demonstrated a method for converting carbon dioxide into a liquid fuel called **isobutanol** using electricity. Today electrical energy generated by various methods is still difficult to store efficiently. Chemical batteries suffer from low energy-density storage or incompatibility with current transportation infrastructure. The research teams new method for storing electrical energy as chemical energy in higher alcohols can be used as liquid transportation fuel. The current way to store electricity is with lithium ion batteries, in which the density is low, but when you store it in liquid fuel the density could actually be very high, and have the potential to use electricity as transportation fuel without needing to change current infrastructure. This method uses carbon dioxide as the sole carbon source and electricity as the sole energy input.



There were 4 reports of Bottlenose Dolphins during April, a pod of 12 was seen off Towan Head, and a pod of 5 off The Gazells Newquay later in the day on the 12th, probably some of the same pod. There were also reports of pods of 5 animals off Newquay on the 28th and 30th, one of which included a juvenile. A pod of 8 to 10 Common Dolphins was seen near The Runnelstone on the 16th. Most reports were of Harbour Porpoises, with 6 reports, all of which were in the Gwennap Head and Porthgwarra area. A Killer Whale was seen to breach well clear of the water near the Runnelstone on April 20th. An unidentified Whale was seen off Hot Point near The Lizard on the 8th of the month and from descriptions given by one observer on the cliff top suggested a Northern Right Whale but from another observer on a boat suggested a Grey Whale. A 15 ft long Thresher Shark was caught in a gill net 3 miles off Newquay Head on the 8th. It was released unharmed and swam off vigorously. A 3 to 4ft Porbeagle Shark followed an anglers line with empty trace to the surface as it was being reeled in and nearly struck the boat which was off Newquay, on the 16th of the month. It stayed for a few seconds and then swam off.