# Citizen Scientists Have Developed Microbes That Are Eating All Of The Oil Out of Chevron's Oil Fields And Can Erase Gasoline From The Planet!

# **By Allen Comstock**

# In a bizarre reversal of a Dr. Evil plan...

...groups of university science students and technologists around the world are racing to eliminate all oil drilling on Earth by eliminating all of the oil on Earth. They are doing this by creating hunter-seeker microbes that seek out all of the crude oil in the ground and eat it up!

In fact, this has already been done.

The only remaining challenge is the distribution mechanism.

The microbes exist. The scientist-activists are only optimizing the viral growth speed increase of the little bugs. They are running free in-the-wild. Each new generation gets better and better and oil ingestion.

The hope is that, in the not too distant future, every oil derrick will suddenly start to make a straw-at-the-bottom-of-the-milk-shake sucking sound as empty oil fields are eaten into oblivion by these hungry little bugs.

The scientists are seeding the bugs into regions around Venezuela, the Middle East, Alaska and other high-density oil field areas.

This recent TV segment describes how it works:

"SKIMMING, CONTROLLED BURNS AND DISPERSANTS ARE SOME OF THE MAIN TOOLS USED TO CONTROL BIG OFFSHORE OIL SPILLS LIKE THE APRIL 2010 SPILL IN THE GULF OF MEXICO. BUT ONCE THE OIL GETS ON SHORE OR INTO MARSHLAND, IT POSES A MUCH DIFFERENT SET OF PROBLEMS.

Wetlands soiled by oil can be damaged further when cleaned... SO DEALING WITH OIL ON SHORE IS A KEY AREA OF RESEARCH FOR SCIENTISTS. TULANE UNIVERSITY PROFESSOR KYRIAKOS PAPADOPOULOS AND HIS STUDENTS ARE STUDYING HOW OIL, DISPERSANTS AND BACTERIA MOVE THROUGH POROUS MATERIAL LIKE the SAND and MUD THAT MAKES UP COASTLINES.

"Once the oil reaches sediments and beaches and bayous, how does it transport itself through the porous medium that those beaches and bayous constitute. But the other very important question that we can answer through this is how we can intervene in order for the oil to be removed."

PART OF THAT QUESTION IS WHich PRODUCTS WORK BEST TO REMOVE OIL WHILE DOING THE LEAST HARM TO THE ENVIRONMENT. A COLUMBIA UNIVERSITY TEAM WORKING WITH THE TULANE GROUP IS TESTING AND DEVELOPING something known as REAGENTS. A reagent, in this instance, would be a microorganism able to digest the oil. Ideally, the product created by the microorganism after consuming the oil would be harmless to the environment.

"The oil that is spilled on marshland you cannot use the techniques that are used on the surface of the ocean. You cannot burn it, you cannot use the booms there because you don't want to disturb the marshland. And so different techniques are required."

SYNTHETIC BIOLOGY – OR ENLISTING MICROBES TO WORK AS TINY CHEMICAL PLANTS – MAY SOON DELIVER DISPERSANTS AND OTHER PRODUCTS TO HELP CLEAN UP OIL SPILLS. BUT IT'S COMPLICATED – SINCE OIL CAN BE SPILLED under WIDELY DIFFERENT CONDITIONS.

"We are looking at all these factors to optimize the window of reagents available for taking care of oil spills. Why window? Because depending on where the spill is – in the Gulf, or in Alaska, the temperature is different, the salinity is different..."

THESE TWO TEAMS, WORKING SOME 13-HUNDRED MILES APART HOPE THEIR RESEARCH WILL YIELD A GREENER CLEANER TECHNIQUE. AND PAPADOPOULOS SAYS SOME OF THE BACTERIA BEHAVIOR HE'S SEEN IN THE LAB COULD MEAN THE NEW MICROBES MAY EVEN move on their own to seek out and CLEAN UP OIL BURIED IN SAND OR SOIL.

"There is a phenomenon we have not published yet, but I hope to publish soon that we call styri-taxis (sp?), meaning bacteria moving to distances they would not have moved otherwise, Just because once they enter the very small, confining spaces of porous medium, they cannot turn back."

A LOT MORE STUDY IS NEEDED, BUT THE SCIENCE COMING OUT OF THESE LABS COULD ONE DAY YIELD A BACTERIUM TO BE SPRINKLED IN THE MARSHES, TO WORK ITS WAY DOWN TO CLEAN UP BURIED OIL..."

That was the "first generation" of bugs. We are now at the third generation of the oil eater bugs. Now we have machines who can create these kinds of oil killers in factory mode.

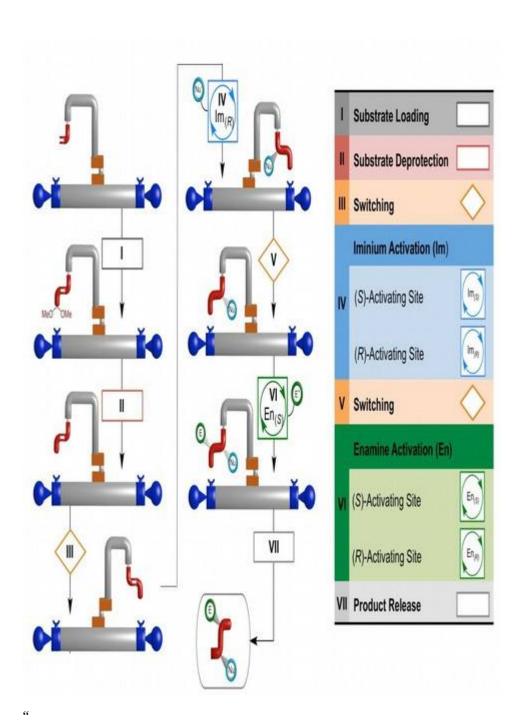
Scientists at The University of Manchester have created the world's first 'molecular robot' that is capable of performing basic tasks including building other molecules. The tiny robots, which are a millionth of a millimetre in size, can be programmed to move and build molecular cargo, using a tiny robotic arm.

Each individual robot is capable of manipulating a single molecule and is made up of just 150 carbon, hydrogen, oxygen and nitrogen atoms. To put that size into context, a billion billion of these robots piled on top of each other would still only be the same size as a single grain of salt.

The robots operate by carrying out chemical reactions in special solutions which can then be controlled and programmed by scientists to perform the basic tasks.

In the future such robots could be used for medical purposes, advanced manufacturing processes and even building molecular factories and assembly lines. The research will be published in Nature today (21st September).

<u>Professor David Leigh</u>, who led the research at University's <u>School of Chemistry</u>, explains: 'All matter is made up of atoms and these are the basic building blocks that form molecules. Our robot is literally a molecular robot constructed of atoms just like you can build a very simple robot out of Lego bricks. The robot then responds to a series of simple commands that are programmed with chemical inputs by a scientist.





Molecular robotics represents the ultimate in the miniaturisation of machinery. Our aim is to design and make the smallest machines possible. This is just the start but we anticipate that within 10 to 20 years molecular robots will begin to be used to build molecules and materials on assembly lines in molecular factories.

Professor David Leigh, Sir Samuel Hall Professor of Chemistry: 'It is similar to the way robots are used on a car assembly line. Those robots pick up a panel and position it so that it can be riveted in the correct way to build the bodywork of a car. So, just like the robot in the factory, our molecular version can be programmed to position and rivet components in different ways to build different products, just on a much smaller scale at a molecular level.'

The benefit of having machinery that is so small is it massively reduces demand for materials, can accelerate and improve drug discovery, dramatically reduce power requirements and rapidly increase the miniaturisation of other products. Therefore, the potential applications for molecular robots are extremely varied and exciting.

Prof Leigh says: 'Molecular robotics represents the ultimate in the miniaturisation of machinery. Our aim is to design and make the smallest machines possible. This is just the start but we anticipate that within 10 to 20 years molecular robots will begin to be used to build molecules and materials on assembly lines in molecular factories.'

Whilst building and operating such tiny machine is extremely complex, the techniques used by the team are based on simple chemical processes.

Prof Leigh added: 'The robots are assembled and operated using chemistry. This is the science of how atoms and molecules react with each other and how larger molecules are constructed from smaller ones.

'It is the same sort of process scientists use to make medicines and plastics from simple chemical building blocks. Then, once the nano-robots have been constructed, they are operated by scientists by adding chemical inputs which tell the robots what to do and when, just like a computer program.'

There are many families of tiny oil-killer tiny things. One was recently discovered as a petrochemical degrading fungus found in Pakistan rubbish dump.

Polyurethane is used to manufacture a huge variety of everyday objects that end up as plastic waste



Getty

Scientists believe they may have discovered one solution to the planet's growing level of plastic waste in the form of a plastic-eating fungus.

Researchers who set out to find a naturally occurring means of degrading waste plastic safely, extracted samples from a rubbish dump outside Islamabad in Pakistan and found a soil fungus that was feeding on plastic.

The study's lead author, Dr Sehroon Khan of the World Agroforestry Centre and Kunming Institute of Biology said: "We decided to take samples from a rubbish dump in Islamabad, Pakistan, to see if anything was feeding on the plastic in the same way that other organisms feed on dead plant or animal matter".

Plastic rubbish found polluting Scotland's most beautiful beaches across its coastline

The subsequent study, published in science journal *Environmental Pollution*, isolated the fungus, identified as Aspergillus tubingensis found in the dump to assess its ability to degrade polyester polyurethane.

Polyurethane is used to manufacture a huge variety of everyday objects and components, including tyres, condoms, hoses, supermarket trolleys, car suspension bushings, and some glues.

The research team tested the fungus's ability to degrade polyurethane in three different ways – on an agar plate, in liquid, and after burial in soil.

The results showed the level of degradation of the plastic in the agar medium was the highest.



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The study abstract said: "Notably, after two months in liquid medium, the PU film was totally degraded into smaller pieces."

Dr Khan said: "Our team's next goal is to determine the ideal conditions for fungal growth and plastic degradation, looking at factors such as pH levels, temperature and culture mediums."

"This could pave the way for using the fungus in waste treatment plants, or even in soils which are already contaminated by plastic waste."

Last year <u>a study</u> published in the journal *Science* by researchers from Kyoto Institute of Technology and Keio University, revealed a new species of bacteria that appeared to break down polyethylene terephthalate (PET) which is widely used in the manufacture of plastic drinks bottles.

However you look at it. Oil is dead.

Billionaires like Peter Thiel or George Soros are said to have already funneled billions into secret New Zealand labs to accelerate these global oil exterminating bugs!