World's First Text Message Using Vodka

Scientists have created a molecular communications system for the transmission of messages and data in challenging environments such as tunnels, pipelines, underwater and within the body.

The technique has a wide range of applications in environments where electromagnetic waves cannot be used, for example in underground structures such as tunnels, pipelines or in underwater environments.

Molecular signalling is a common feature of the plant and animal kingdom -- insects for example use pheromones for long-range signalling -- but to date continuous data have not been transmitted.

Researchers at the University of Warwick in the UK and the York University in Canada have developed the capability to transform any generic message into binary signals, which in turn is 'programmed' into evaporated alcohol molecules to demonstrate the potential of molecular communications. Their results are published in the open access journal *PLOS ONE*.

The first demonstration signal was performed in Canada and was 'O Canada,' from the Canadian national anthem. It was sent several metres across open space before it was decoded by a receiver. The hardware is made from off-the-shelf electronics and costs around $100.

The scientists believe the simple system could have a wide variety of applications, ranging from communication in hostile underground environments to nanotechnology.

The team will now set up a company which aims to bring a range of academic and industrial products to the market.



The new technology will make it possible to transmit messages and data in tunnels, pipelines, underwater and within the body.

Mating Is Kiss of Death for Certain Female Worms

The presence of male sperm and seminal fluid causes female worms to shrivel and die after giving birth, Princeton University researchers reported this week in the journal *Science*. The demise of the female appears to benefit the male worm by removing her from the mating pool for other males.

The researchers found that male sperm and seminal fluid trigger pathways that cause females to dehydrate, prematurely age and die.

The death of the female after she gives birth fits into a general framework of sperm competition that has been observed often in nature, writes Coleen Murphy, an associate professor of molecular biology. "Males compete to have their genomes propagated, and this often occurs at the expense of the female."



Shortened female lifespan following mating have been observed before for roundworms, but the study is the first to document the body shrinkage and identify the underlying biological pathways, Murphy wrote.

The team found that the pathways by which the male kills the female are ones that researchers think exist for the purpose of slowing down aging during times of low nutrients.