

# #CHEMMONTHLY SEPTEMBER 2018



## SUNLIGHT-DRIVEN PROCESS CONVERTS PLASTIC TO HYDROGEN

A new method uses calcium sulfide quantum dots as photocatalysts to break down plastic waste. The plastic and catalyst are immersed in an alkaline solution, with the water from the solution converted to hydrogen and the plastics broken down to small organic molecules.



## COMBINED PILLS LINKED WITH REDUCED OVARIAN CANCER RISK

Researchers analysing data from over 1.8 million women found that women who used hormonal contraception at some point had a 34% lower risk of developing ovarian cancer than those who had not. The study only shows a link and does not establish cause and effect.



## IG NOBEL PRIZE FOR STUDY ON CLEANING POTENTIAL OF SALIVA

This year's Ig Nobel prize in chemistry went to a study which showed that human saliva is an effective cleaning agent for historical artefacts and paintings. Its use as a cleaning agent is partly due to the presence of the amylase enzyme, which breaks down starch into sugars.



## POLYMER COATING COOLS BUILDING SURFACES IN DIRECT SUN

A porous polymer coating can cool building surfaces in direct sunlight by reflecting 96-99% of sunlight and emitting heat. Tests showed the coating can cool surfaces to 2-6 °C below ambient temperature. The coating is cheaper than previous similar approaches.



## CHEMICAL CLUE SUGGESTS PIGMENT WAS MADE FROM COW URINE

Analysis of unrefined balls of Indian yellow pigment found hippuric acid, a component of cow urine. It supports the previously discredited claim that the pigment, used by artists in the 19<sup>th</sup> Century, was produced from the urine of cows fed only mango leaves and water.



## GLYPHOSATE DISRUPTS HONEYBEE GUT BACTERIA

A new study suggests that glyphosate, the main component of the weed killer, Roundup, disrupts gut bacteria of honeybees. Worker bees exposed to glyphosate died at higher rates. The findings suggest that glyphosate may play a role in honeybee decline.



## BLOOD MARKERS LINK FIREFIGHTER LUNG DISEASE TO WTC ATTACKS

Chemical metabolites in blood samples taken from firefighters exposed to dust and smoke during the World Trade Centre attacks can accurately predict which will develop lung disease. The findings may help to develop tests which will detect early lung damage.



## NEW PHOTOCATALYST DEGRADES FLUORINATED WATER POLLUTANT

A new photocatalyst removes the industrial pollutant perfluorooctanoic acid (PFOA) from water. PFOA has been found in drinking water across the U.S. and may threaten human health. The catalyst degrades PFOA 15 times faster than other catalysts.

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