

#CHEMMONTHLY MAY 2018



SMALL MOLECULE STOPS GOLD VIRUS REPLICATION

Scientists have discovered a small molecule which stops strains of the cold virus reproducing in the laboratory. It does this by inhibiting a human enzyme the virus uses to produce proteins. It has to be given within hours of infection and has not yet been tested on humans.



NEW PROCESS CONVERTS OLD NEWSPAPERS INTO HYDROGEN

A new catalytic process turns waste biomass materials, including newspapers, straw, and cardboard, into hydrogen for fuel cells. Celluloses in the biomass are converted into formic acid; hydrogen gas is then generated from the formic acid using an iridium catalyst.



ILLEGAL CFC PRODUCTION COULD SLOW OZONE LAYER RECOVERY

Despite an international ban on trichlorofluoromethane (CFC-11) production being in place since 2010, emissions are still increasing. This could slow the recovery of the ozone layer. Investigation into the production suggests that the emission source is in east Asia.



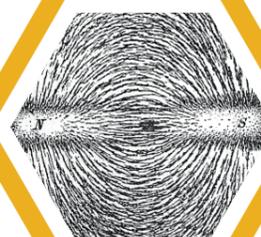
LEAD IN ICE CORES TRACKS ROME'S PROSPERITY AND DECLINE

Scientists have used an ice core from Greenland to measure amounts of lead deposited between 1100 BCE and 800 CE. Higher lead levels corresponded with more smelting at the height of the Roman Empire, while levels drop significantly in the Empire's declining years.



NEW PROCESS TO MAKE ALUMINIUM AVOIDS CO₂ PRODUCTION

Apple and two aluminium-making companies are aiming to commercialise an electrolytic process for making aluminium which makes oxygen as a by-product instead of carbon dioxide. The production of other greenhouse gases is also avoided.



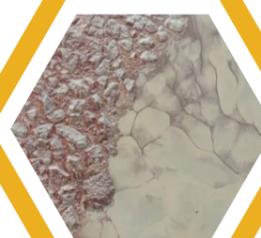
METHOD SEPARATES ENANTIOMERS WITH MAGNETS

A study shows enantiomers (molecules that are mirror images of one another) can be separated with a magnetic field. It works as electrons behave differently in the two enantiomers. It may be useful for drug separation as enantiomers often have differing medical effects.



A NEW TYPE OF ISOMERISM DISCOVERED: AKAMPTISOMERISM

Researchers have discovered the first new category of stereoisomers for 50 years. 'Akamptisomers' occur in porphyrin molecules with a boron-oxygen-boron bridge. The isomerism arises from flexing of the central atom; the surrounding molecule prevents bond rotation.



PLUTO'S SURFACE HAS DUNES OF METHANE ICE

Ridges on the surface of Pluto, seen in photos taken by the New Horizons probe's fly-by in 2015, are dunes which are likely to have been formed from sand-sized grains of solid methane ice. The dunes are thought to be shaped by the light breeze on Pluto's surface.

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