

# #CHEMMONTHLY JANUARY 2019



## CHEMICAL BREW SUCCESSFULLY MIMICS FUGU FLAVOUR

A team of Chinese researchers analysed a liquid extract of puffer fish muscle tissue. They identified that a combination of twelve chemical components came close to imitating the flavour of fugu when combined with two flavour peptides.



## SUNSCREEN INGREDIENT AFFECTS CORAL METABOLISM

Researchers have shown that an ingredient in some sunscreens, octocrylene, forms compounds that accumulate in coral at concentrations comparable to that found in reality. At higher levels, accumulation of the compounds affected coral metabolism.



## GRAPHENE 'WATER PIPES' LET SINGLE WATER MOLECULES PAST

A team of researchers made graphene capillaries so narrow that only single water molecules fit through. They mimic natural protein channels called aquaporins. Scaled up, they could be used for desalination, or as a semi-permeable membrane for hydrogen ions.



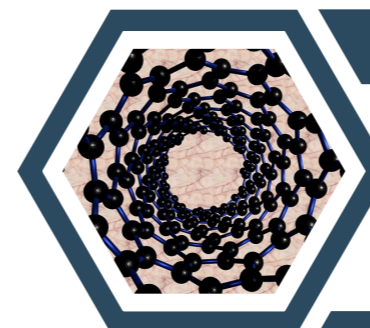
## 3D PRINTED DEVICE AIMS TO REDUCE CHEMO SIDE EFFECTS

Doxorubicin is used to treat various cancers, but repeated exposure can lead to heart failure. A new 3D printed device is positioned in the bloodstream after the organ being treated, absorbing doxorubicin - 64% of the administered dose in tests in pigs.



## 3D PRINTER PROJECTS IMAGES TO PRINT OBJECTS

A new type of 3D printer creates objects by projecting 2D images into a rotating vial of a light-sensitive polymer. Unlike conventional 3D printing, which slowly builds objects layer-by-layer, the new technique is much faster and produces smoother surfaces.



## LINKED BENZENE RINGS CREATE NEW CARBON NANOTUBE

A new form of carbon nanotube has been created by researchers by linking together cylinders composed of 40 connected benzene rings. The nanotubes formed contain regular holes which could be advantageous in terms of their electrical properties.



## THERMOCHROMIC PAPER CAN BE ERASED BY FREEZING

A new type of thermochromic paper can be written on with heat and then erased by freezing. One side is printed with a blue thermochromic dye mixture, which turns white when written on with a pen that uses heat as 'ink', then back to blue when cooled to  $-10^{\circ}\text{C}$ .



## LIGHTNING-INSPIRED AMMONIA SYNTHESIS WITHOUT CATALYST

Ammonia is vital for producing fertilisers to sustain the world's population, but methods to produce it need catalysts. A new method makes ammonia electrolytically from water and nitrogen plasma. It uses a lot more energy, but could still be useful at a small scale.

For links to articles and studies, visit: [bit.ly/chemmonthlyjan19](http://bit.ly/chemmonthlyjan19). Follow @Chemunicate or #ChemMonthly on Twitter to keep up with the latest chemistry news!



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