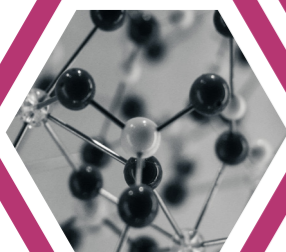


# #CHEMMONTHLY OCTOBER 2018



## MICROSCOPY QUICKLY REVEALS SMALL MOLECULE STRUCTURES

A new study shows that cryo-electron microscopy can determine the structures of small molecules in minutes. The technique allows the structures of small samples of powders or amorphous solids to be determined, which is not possible using x-ray crystallography.



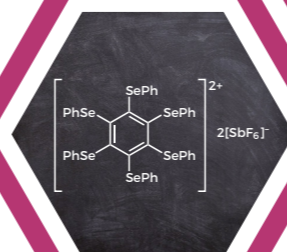
## FLUORINATED COATING REPELS OVER 100 DIFFERENT LIQUIDS

Researchers have produced a repellent coating based on a fluorinated polymer. Polymer nanoparticles form a highly textured surface which repels over 100 liquids, including water and concentrated acids. The coating is durable and sticks to a wide range of substances.



## USING CINEMA CHEMISTRY TO ASSESS FILM AGE RATINGS

Expanding on a 2016 study which found that isoprene emitted by cinema-goers increases during stressful scenes, researchers measured the rate and size of isoprene increases. They suggest the data could be used to assess film age ratings, particularly if the rating is disputed.



## CHEMISTS MAKE FIRST STABLE DOUBLE AROMATIC MOLECULE

'Aromatic' is used to describe flat, ring-shaped molecules where electron density is spread across the ring. Now chemists have created the a double aromatic molecule (left). The size of selenium (Se) atoms allows their electron orbitals to overlap, giving additional aromaticity.



## CHEMICAL EXPLANATION FOR HAZE ON SATURN'S MOON, TITAN

Evidence has suggested that polycyclic aromatic hydrocarbons (PAHs) are the cause of Titan's haze. Researchers have used lab experiments and calculations to determine how they can form at the icy temperatures of as low as  $-200\text{ }^\circ\text{C}$  found on Titan.



## MILK PROTEIN COMBATS CHEMOTHERAPY'S METALLIC TASTE

Cancer patients receiving chemotherapy can experience changes in taste and smell as side effects. A milk protein called lactoferrin, already available as a supplement, reduced metallic tastes in patients studied, possibly due to it decreasing salivary iron content.



## POLYMER NANOPARTICLES PREVENT SNAKE VENOM'S EFFECTS

A new alternative treatment for snake bites uses synthetic polymer nanoparticles. The nanoparticles bind to a toxin in the venom, stopping it from spreading and from causing tissue damage. The treatment could be used against many species of snakes.



## GEL AIMS TO PROTECT FARMERS FROM PESTICIDE EXPOSURE

A gel that can be applied to the skin prevents nerve damage caused by organophosphate pesticides by removing the phosphate or thiophosphate group from pesticide molecules. Tests in rats have been successful, and human trials are now scheduled for 2019.

For links to articles and studies, visit: [bit.ly/chemmonthlyoct18](http://bit.ly/chemmonthlyoct18). Follow @Chemunicate or #ChemMonthly on Twitter to keep up with the latest chemistry news!



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