

#CHEMMONTHLY JULY 2019



LIGAND TREATMENT REMOVES URANIUM FROM BONES

A compound designed to be good at grabbing uranium in the body removed record amounts of uranium from the bones and kidneys of mice exposed to radiation. It's effective up to 48 hours after exposure, so could be used to treat patients exposed to radiation in the future.



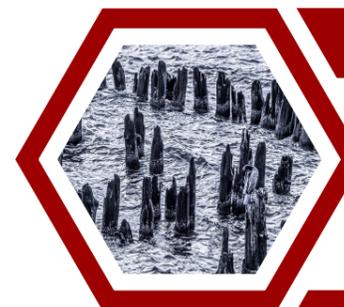
REMOVING EYE FLOATERS WITH LASER-HEATING NANOPARTICLES

'Floaters' in your eye are caused by protein clumps, and worsen with age. Tests with eye fluid samples have shown that heating gold nanoparticles with a laser reduces these clumps. It needed less laser energy than current methods, and was more effective.



METHANE-MINIMISING CATTLE FEED ADDITIVE SEEKS APPROVAL

A Dutch company has applied to sell a product containing the additive 3-nitroxypropanol as cattle feed in Europe. The additive can reduce emissions of methane from cattle by up to 30%. Currently cattle are responsible for 15% of all greenhouse gas emissions.



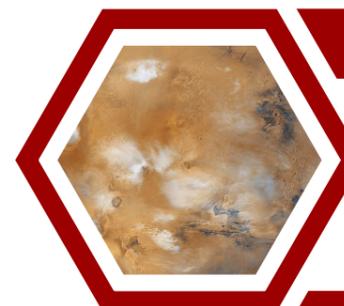
TINY, ELASTIC CARBON STRUCTURES AS STRONG AS DIAMOND

Microscopic carbon pillars which are stronger by weight than diamond, while also elastic, lightweight and heat-resistant, have been created by researchers. Their properties could give them applications in aeroplane parts, nuclear reactors, and engines.



ISOTOPES SHOW THE MOON IS OLDER THAN THOUGHT

Hafnium and tungsten isotope ratios in samples brought back by Apollo 17 suggest that the moon formed 50 million years after the solar system - much earlier than previously thought. The work used the ratio of hafnium-182 to tungsten-182 to determine the moon's age.



SILICA AEROGEL COULD HELP MARS SUSTAIN BASIC LIFE

A thin layer of silica aerogel on the surface of Mars could increase the temperature of its surface by 50°C, according to modelling. Raising the temperature this much would keep water directly under the surface liquid and allow basic life such as algae to be sustained.



FUNGUS COMPOUND NEUTRALISES SKUNK STENCH

A fungal compound found in soil samples converts the thiols that give skunk odour its stench into odourless compounds, making the skunky smell undetectable. It was more effective than products marketed as skunk deodourisers, though commercialisation isn't planned.



ARTIFICIAL FIBRES EXTRACT URANIUM FROM SEAWATER

4 billion metric tons of uranium are dissolved in the world's oceans, but its low concentration makes extraction hard. A fibre combining a uranium-absorbing protein with synthetic spider silk, absorbs uranium from seawater more effectively, but may still be prohibitively expensive.

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