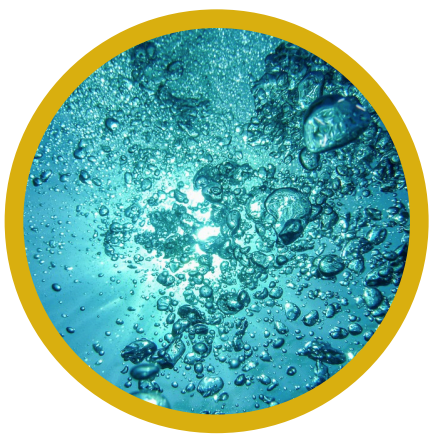
THIS WEEK IN CHEMISTRY

9TH APRIL 2017 – 15TH APRIL 2017

Links to articles & studies for the featured stories are provided at: https://goo.gl/Wns0l1

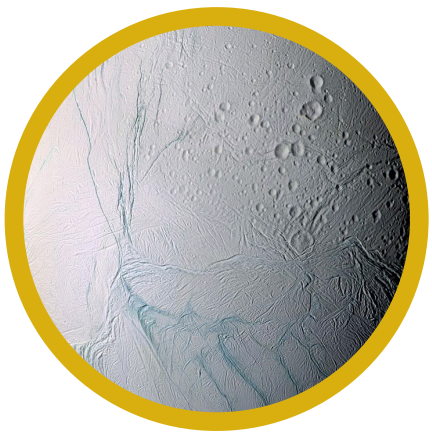
DISSOLVABLE SILK BATTERIES COULD POWER MEDICAL IMPLANTS

Researchers at the University of Wollongong have made batteries by making ultra-thin films of fibroin, a protein in silk. It is postage stamp-sized, can power an implantable medical sensor, and decomposes after 45 days – ideal for temporary implants.



METAL-ORGANIC FRAMEWORK CAPTURES WATER FROM AIR

US researchers have developed a metal-organic framework (MOF) which can capture 250 millilitres of water per kilogram of MOF when left in the dark at 25˚C and 20% relative humidity. Heating the MOF expels almost all of the water that it collects.



FURTHER EVIDENCE FOR HYDROTHERMAL VENTS ON ENCELADUS

NASA have more evidence for hydrothermal vents in the ocean of Enceladus, a moon of Saturn. The Cassini spacecraft flew through Enceladus's water plumes and found molecular hydrogen, suggesting water in the ocean is reacting with rocks.

BENZENE-LINKED AMINES IMPROVE CARBON CAPTURE PROCESS

Carbon dioxide can be captured using amines, but this traps the CO_2 in water-based solutions, so lots of energy is needed to regenerate the amines. Japanese researchers found that by adding phenyl groups onto amines water absorption can be drastically reduced.

SIMPLE METHOD MAKES BORONATE ESTERS AND BORONIC ACIDS

Boronate esters and boronic acids are useful in organic synthesis, but problematic to make. A new simple method converts carboxylic acids into boronate esters, then to boronic acids. It works on a range of carboxylic acids and without affecting other functional groups.