THIS WEEK IN CHEMISTRY

24TH JANUARY 2016 – 30TH JANUARY 2016

Links to articles & studies for the featured stories are provided at: http://goo.gl/qkj5mK

CONVERTED PROTEINS REMOVE METAL POLLUTANTS FROM WATER

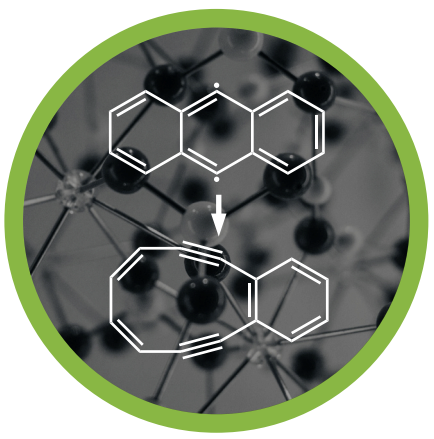
By converting milk proteins into fibres of amyloid protein, and pairing them with a carbon membrane, researchers were able to filter out 99% of toxic materials from solutions mimicking polluted water. They were particularly effective at removing lead & mercury particles.

BED BUGS DEVELOP RESISTANCE TO NEONICOTINOID INSECTICIDES

A study suggests that bed bugs in the US have developed resistance to neonicotinoid insecticides, requiring doses 1000 times larger than usually needed to kill them. The research suggests than non-chemical control methods may be needed in the future to control their numbers.

GLOVE-BASED SENSOR HELPS DETECT COCAINE

A new glove-based sensor allows cocaine to be detected quickly and easily. It combines an index finger sensor with a gel on the thumb; rubbing powder on the finger into the gel produces an electrochemical signal if cocaine is present, and has a low limit of detection.



TRIGGERING & VISUALISING BOND MAKING & BREAKING

Using scanning tunnel microscopy, chemists could push a molecule's reaction back and forth. Atomic force microscopy helped visualise the molecules as bonds were broken and made. The technique advances knowledge of manipulating reactions at the molecular level.

WEARABLE DEVICE ANALYSES WEARER'S SWEAT CHEMISTRY

New wearable devices help monitor skin temperature and chemicals in sweat. The sensors can detect glucose, lactate, sodium ions, and potassium ions. A patent has been filed for the sensor, which could have applications in health care diagnostics and for diabetics.