THIS WEEK IN CHEMISTRY

31ST JULY 2016 – 6TH AUGUST 2016

Links to articles & studies for the featured stories are provided at: http://goo.gl/vZr7Ft

PROBABLE CARCINOGENS IDENTIFIED IN E-CIGARETTE VAPOUR

New analysis shows that, as well as known carcinogens including formaldehyde, e-cigarette vapour also contains significant levels of 31 harmful compounds. They are generated by the thermal decomposition of common solvents, propylene glycol and glycerine.

NEW ASTHMA DIAGNOSIS BASED ON PATIENT SALIVA

Using liquid chromatography mass spectrometry (LC-MS) analysis on patient saliva, researchers could identify biomarkers – molecules present only in the saliva of asthma sufferers. The next step is verifying these biomarkers in a larger clinical study.

FRACKING AIR POLLUTION STUDY RETRACTED DUE TO ERRORS

Errors in a 2015 study on carcinogenic polyaromatic hydrocarbon (PAH) compounds led to their levels near fracking sites in Ohio being reported as around 250 times higher. The actual levels do not exceed the Environmental Protection Agency's acceptable risk levels.

MECHANISM OF CONCRETE DEFORMATION CLARIFIED

Concrete slowly deforms when placed under stress, a problem which can lead to cracking and crumbling in structures it is used to build. Researchers found that calcium-silicate-hydrates dissolve in high stress regions and precipite at lower stress regions, causing deformation.

METAL-ORGANIC FRAMEWORKS FOUND TO EXIST IN NATURE

Metal-organic frameworks (MOFs) were long thought to be 'designer' materials, first produced in the 1990s, and used as 'molecular sponges'. Now scientists have found that they can exist in nature, as rare minerals currently only confirmed to be found in Siberian coal mines.