

THIS WEEK IN CHEMISTRY

19TH NOVEMBER 2017 – 25TH NOVEMBER 2017

Links to articles & studies for the featured stories are provided at: <https://goo.gl/Jx6JW5>



LIGHTNING TRIGGERS ATMOSPHERIC PHOTONUCLEAR REACTIONS

Using a nuclear power station's radiation detectors, Japanese scientists found that lightning strikes trigger photonuclear reactions in the atmosphere. These reactions are a previously unrecognised natural source of carbon, nitrogen, and oxygen isotopes.



CAUSE OF INITIAL CHERNOBYL EXPLOSION DETERMINED

New evidence suggests the Chernobyl disaster's initial explosion was due to a runaway nuclear reaction, and not high pressure steam (which caused the second explosion). The conclusion is based on evidence from short-lived xenon isotopes and weather data.



PHTHALATE EXPOSURE CONCERNS FOR PERFUME SALES STAFF

A study in Taiwan found higher levels of phthalates in perfume sales staff, and suggests that they could pose health risks, particularly for pregnant women. Phthalates are used as carriers in fragrances; there's concern that some could disrupt the body's hormone system.



POSSIBLE NEW TARGET FOR FAST-ACTING ANTIDEPRESSANTS

One hallmark of depression is reduced activity in the brain of mTORC1, a protein complex present in many cells in the body. A new compound, tested on rats, activated mTORC1 in the brain within an hour, and also relieved some symptoms of depression. Human trials are planned.



PLANS TO ELIMINATE EPA CHEMICAL RISK ASSESSMENT PROGRAMME

If the Senate's spending bill for 2018 is enacted, it will eliminate the EPA's Integrated Risk Information System, which identifies and details health hazards of chemicals in the environment. The budget of the chemical safety and sustainability programme would also reduce.

