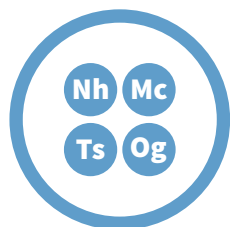


THIS YEAR IN CHEMISTRY

2016'S BIGGEST CHEMISTRY STORIES

Links to the articles and studies featured in this graphic can be found here: <https://goo.gl/f5msqc>

FOUR NEW ELEMENTS CONFIRMED AND NAMED



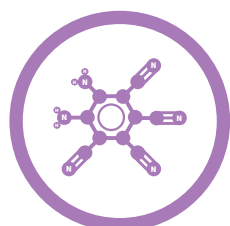
Four new elements had their discoveries and names confirmed, and were added to the periodic table, completing its seventh row. The elements are nihonium (Nh, 113), moscovium (Mc, 115), tennessine (Ts, 117) and oganesson (Og, 118).

ONE OF WORLD'S LARGEST HELIUM DEPOSITS UNEARTHED



A new helium source found in Tanzania is equal to seven times the amount used worldwide every year. Scientists discovered it using seismic images and calculations. The discovery could ease helium shortages to a degree.

NEW RECORD FOR MOST POLAR NEUTRAL MOLECULE



A hexasubstituted benzene has the largest dipole moment (due to unequal sharing of electrons) recorded in a neutral molecule. 5,6-diaminobenzene-1,2,3,4-tetracarbonitrile has a dipole moment greater than some ionic compounds.

AMINO ACID AND PHOSPHORUS FOUND ON COMET



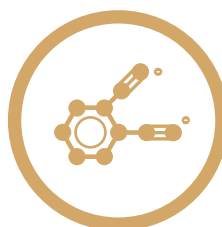
The ESA's Rosetta probe detected substances thought to be key to the origin of life on comet 67P. They include the amino acid glycine, a component of proteins, and phosphorus, which is found in DNA and cell membranes.

OLYMPICS PLAGUED BY POOL CHEMISTRY PROBLEMS



During the Olympics, the diving and swimming pools turned a murky green. Suggested reasons included algal growth or the presence of copper salts. The definite cause of the green pool problem was never officially divulged.

CHEMISTS MAKE STRONGEST BASE EVER



Australian scientists created the ortho-diethynylbenzene anion, a compound with the highest known basicity – so strong that it can pluck hydrogens from benzene. Superbases are important tools in organic chemistry synthesis.

MOLECULAR MOTORS WIN CHEMISTRY NOBEL PRIZE



This year's Nobel Prize in Chemistry was awarded to Jean-Pierre Sauvage, Sir Fraser Stoddart, and Bernard Feringa for work on the design and production of molecular machines consisting of movable interlocking molecules.

SAFETY OF WEED KILLER GLYPHOSATE SCRUTINISED



A World Health Organisation report concluded that the glyphosate herbicide is unlikely to cause cancer in humans. This agreed with a EU safety evaluation. In June its licence for use in the EU was extended until December 2017.

GREEN SOLVENT TAMES ORGANOLITHIUM CHEMISTRY



Using a solvent made from choline chloride and glycerol chemists have been able to carry out organolithium chemistry in air. This usually isn't possible; organolithium compounds are pyrophoric (spontaneously catch fire in air).

INSIGHTS INTO PLUTO'S SURFACE & ATMOSPHERE



Data from NASA's New Horizons mission revealed Pluto's surface is composed of water and nitrogen ices, with red patches caused by tholin polymers. Its atmosphere is mostly nitrogen, with organic compounds giving a haze.

ATMOSPHERIC CARBON DIOXIDE THRESHOLD PASSED



Atmospheric carbon dioxide failed to drop below 400 parts per million at its yearly minimum. Carbon dioxide helps trap heat in the atmosphere, contributing to climate change. 2016 is on track to be the hottest year since records began.

ADVANCES IN LITHIUM BATTERY SAFETY & LIFESPAN



Research early in the year detailed how an expanding polymer film could be incorporated into existing lithium batteries to stop them catching fire. Other research continued to look at improving battery capacity and lifespan.

