THE YEAR IN CHEMISTRY

2017'S BIGGEST CHEMISTRY STORIES

HEAVY ELEMENTS MADE IN NEUTRON STAR COLLISION

LIGO scientists observed gravitational waves from a neutron star collision. Other electromagnetic signals detected gave evidence for processes that create heavy elements like gold, platinum and uranium.

2.7 MILLION-YEAR-OLD ICE CORE DRILLED

A new ice core drilled in Antarctica is 1.7 million years older than the previous oldest core recovered. Chemical analysis of the core will help us learn more about the past of Earth's atmosphere and climate.

SAMSUNG GALAXY NOTE 7 BATTERY FIRES

Damaged separators due to manufacturing defects in Samsung Galaxy Note 7 batteries led to short circuits that caused a number of battery fires. Ultimately Samsung ceased production of the phone and issued recalls.

MOLECULE-BUILDING & SYNTHESIS-PLANNING MACHINES

Chemists developed a machine capable of building sets of chiral molecules. A new neural network could accurately predict bond energies, and a new algorithm could map out a molecule's synthesis in seconds.

CHEMISTS BREAK RECORD FOR TIGHTEST EVER KNOT

A molecular knot unveiled at the University of Manchester has a Guinness world record as the tightest ever tied. It consists of three plaited molecular strands, making a loop with eight crossings.

OGANESSON LOSES ELECTRON SHELL STRUCTURE

Calculations for recently discovered element oganesson suggest that the size of the atom's nucleus causes it to lose its electrons to lose their shell structure entirely, forming a diffuse 'smear' of charge.

METALLIC HYDROGEN CLAIM SCRUTINISED

Scientists from Harvard claimed the creation of metallic hydrogen at very high pressure between two diamonds. Before conclusive evidence was obtained, the sample was lost as the diamonds cracked.

CHEMISTS MAKE 'MAGIC MUSHROOM' COMPOUND

The first enzymatic synthesis of psilocybin, the active compound in 'magic mushrooms', was accomplished, making commercial production possible. It could lead to medical uses for anxiety and depression.

U.S. GREENHOUSE GAS REGULATIONS EASED

A U.S. ruling removed limitations on using HFC refrigerants which contribute to global warming. Plans for U.S.-based oil and natural gas companies to report on their methane emissions were also shelved.

GRAPHENE OXIDE SIEVE REMOVES SALT FROM WATER

UK-based researchers made a graphene oxide sieve which can remove 97% of salt from seawater. The sieve could lead to affordable desalination technology, providing clean drinking water for millions.

CRYO-ELECTRON MICROSCOPY WINS NOBEL PRIZE

This year's Nobel Prize in Chemistry went to cryo-electron microscopy, a technique that allows the structures of biomolecules to be determined at atomic resolution where other techniques fail.

HOW POISON FROGS AVOID POISONING THEMSELVES

Colombian poison dart frogs contain the batrachotoxin poison which kills by disrupting nerve activity. A single amino acid mutation in their sodium channel protein protects them from the toxin.

For links to articles and studies, visit: **bit.ly/TYIC2017**. Follow **@Chemunicate** or **#ChemMonthly** on Twitter to keep up with the latest chemistry news!