THIS WEEK IN CHEMISTRY

29TH NOVEMBER - 5TH DECEMBER 2015

IMPROVED CRYOPRESERVATION EXTENDS ORGAN STORAGE

In cryopreservation, ice can damage cells, but higher levels of cryoprotectants such as dimethyl sulfoxide cause toxicity. Using a mathematical model, scientists have optimised the approach to minimise toxicity, which could allow longer organ storage.

SMALL MOLECULE COULD HELP TO BOOST LEARNING

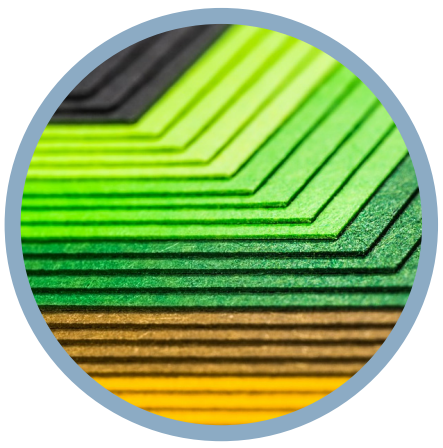
People given a dose of the compound d-cycloserine showed greater EEG activity in their visual cortex when re-viewing patterns on a screen. This suggests it helps bolster synapse connections, and could help patients with deficits in learning due to disease.

CHEWING GUM SENSOR TRACKS BREATHING & MOVEMENT

Chewing gum could find an unlikely application as a body sensor. Researchers added carbon nanotubes to chewed gum, and it could then be used as a high sensitivity sensor, able to detect movement and also humidity changes (which can help to track breathing).

'POWER PAPER' STORES ELECTRICITY USING POLYMER

A material consisting of nanocellulose and a conductive polymer can be formed into a 'power paper'. A thickness of tenths of a millimetre stores up to one Faraday of electricity. Charging the material takes only a few seconds, and it can be recharged hundreds of times.



ARTIFICIAL PHOTOSYNTHESIS PRODUCES ETHANOL

A newly-developed type of artificial photosynthesis can convert carbon dioxide into ethanol. The method uses an electrolyte supersaturated with caesium carbonate, and produces greater than 90% by weight liquid ethanol, which can be used as a fuel.