TURNING SUGAR CANE INTO HIGH-PERFORMING JET FUEL
A new method for synthesising aviation fuels uses condensed alkyl methyl ketones derived from sugar cane. The method deoxygenates these compounds to yield jet fuel compounds of a higher energy density than current jet fuels, along with other superior properties.

DETAILED MECHANISM OF CHILLI SPICINESS REVEALED
We've long known capsaicin, the spicy compound in chillies, binds to TRPV1 receptors to produce its effect. Its interaction with these receptors has now been modelled, helping explain why capsaicin doesn't affect birds: their receptors lack two key interaction sites.

NANOSCALE INKLESS PRINTING USING NANOMATERIALS
A printing method developed by US researchers uses a template of nanoscale holes instead of ink to 'print' designs. Light is passed through these holes to create a design, only viewable with an electron microscope. The method could be used for security marking.

PROMOTING TISSUE GROWTH & HEALING IN MICE
A small molecule increases the rate of tissue regeneration in mice, inhibiting an enzyme that breaks down a particular prostaglandin. In another study this week, a different small molecule was shown to help regrowth of healthy tissue by boosting levels of a key protein.

EXOPLANET’S TITANIUM OXIDE STRATOSPHERE REVEALED
Astronomers have discovered that the exoplanet WASP-33b has a stratosphere. They suspect the stratosphere to be composed of titanium oxide, which can absorb UV and exist as a gas without decomposing at the high temperatures of over 3600°C.