

THIS WEEK IN CHEMISTRY

5TH APRIL - 11TH APRIL 2015

NEW ALUMINIUM BATTERY CAN RECHARGE IN 60 SECONDS

A new aluminium-ion battery loses little of its storage capacity after 7000 cycles, and recharges in less than 60 seconds. Currently, its energy density is limited by the AlCl_4^- ions used. If this is overcome it could replace lithium-ion batteries in a range of applications.



'SMART' WINDOW COLOUR CHANGES POWERED BY WEATHER

A new 'smart' window can convert static energy from rain using a coating of polydimethylsiloxane. It can also harness energy from wind using plastic separated by nanoscopic springs. The current can be used to tint the window blue, but cannot yet be stored.



FRACKING ACTIVITIES COULD POLLUTE NEARBY AIR

Fracking to extract natural gas has been shown to release polycyclic aromatic hydrocarbons (PAHs). Air samplers installed in the homes of 23 volunteers within 3 miles of fracking activity measured levels of PAHs 10 times greater than in areas without fracking activity.



LAWRENCIUM'S PERIODIC TABLE POSITION DEBATED

Measurement of lawrencium's first ionisation energy found it to be unusually low. Some say this suggests it should belong with the actinides, in the f block; others argue it should be in the d block. IUPAC currently has no official recommendation on its position.



OCEAN ACIDIFICATION CAUSED A PAST MASS EXTINCTION

A study has shown a mass extinction of marine life 252 million years ago likely arose as a result of volcanoes producing large amounts of CO_2 , causing ocean pH to plummet. Ocean acidification as a consequence of CO_2 emissions is a current concern.



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