

## SCIENCE

## Natural preservative could keep foods fresh longer than ever



Ben Coxworth | 7 hours ago



The preservative has been successfully tested on fruit juice and meat samples (Credit: Nanyang Technological University)

There may be new hope for people who don't want potentially-harmful preservatives in their food, yet who still want it to have a decent shelf life. Scientists in Singapore have developed a *plant-based* food preservative, which they claim is actually more effective than its artificial counterparts.

Developed at Nanyang Technological University by a team led by Prof. William Chen, the preservative incorporates phytonutrients known as flavonoids. These occur naturally in almost all fruit and vegetable plants, helping defend them against threats such as pests, pathogens, and environmental stresses including the ultraviolet rays in sunlight.

While previous research indicated that flavonoids additionally showed promise as an antimicrobial agent, they would need to be processed via an expensive and non-sustainable prenylation procedure in order to bring out that quality. The scientists in Chen's team, however, claim to have developed a method of producing flavonoids that kill bacteria right from the start.

Utilizing a process similar to that used for the production of vaccines, they implanted the flavonoid-producing mechanism from plants into a species of baker's yeast called *Saccharomyces cerevisiae*. The yeast responded by producing ready-to-use flavonoids with high antimicrobial and antioxidant properties, both of which are essential to food preservation.

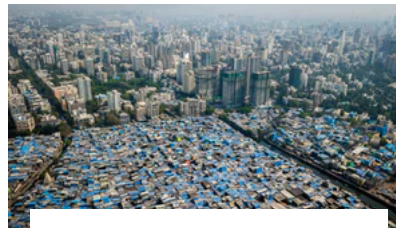
## TOP STORIES



Scientists may have uncovered exactly how eating certain vegetables can prevent colon cancer



EarthCruiser makes ultra-capable off-grid motorhomes out of Mercedes' most rugged



Striking drone photo series places class divide under the spotlight



Hanging Bivymok tree tent holds half a ton

## SPONSORED CONTENT

Sponsored Links by Taboola

## RECOMMENDED FOR YOU

"Flavonoids extracted directly from plants need to be further processed to be antimicrobial whereas our flavonoids produced from yeast do not require this," says Chen. "Secondly, there have been no reports on antioxidant properties in flavonoids, while our yeast-based flavonoids naturally come with it."

In lab tests, a preservative incorporating the flavonoids was added to samples of fruit juice and meat, which proceeded to last for two days at room temperature before spoiling. By contrast, samples treated with conventional artificial preservatives succumbed to bacterial contamination within just six hours.

The university is now in talks with industrial partners, in order to commercialize the technology. A paper on the research was recently published in the journal *Food Chemistry*.

Source: [Nanyang Technological University](#)

We recommend

Highly effective natural plant-based food preservative discovered [↗](#)  
Nanyang Technological University, ScienceDaily

The onion, a natural alternative to artificial preservatives [↗](#)  
FECYT - Spanish Foundation for Science and Technology, ScienceDaily

The onion, a natural alternative to artificial preservatives [↗](#)  
Phys.org

Researchers turn potato byproducts into eco-friendly plastic films [↗](#)  
Phys.org

Fresh hopes for anti-microbial potential from Aussie native plants [↗](#)  
Phys.org

Apple-powered research [↗](#)  
MedicalXpress

Powered by **TREND MD**



TAGS   [#FOOD](#)   [#NANYANG TECHNOLOGICAL UNIVERSITY](#)   [#PLANTS](#)

SHARE THIS ARTICLE



Mushrooms may be stuffed with anti-aging potential

POST A COMMENT

SPONSORED CONTENT

LATEST IN [SCIENCE](#)



**Natural preservative could keep foods fresh longer than ever**



**Scientists may have uncovered exactly how eating certain vegetables can prevent colon cancer**



**Prehistoric mummy shows embalming took place 1,500 years before the Pharaohs**

---



**White stuff from tomb is world's oldest cheese**

---



**The neuroscience of pessimism: Why some people always focus on the negative**

---



**Double denim: How old jeans might gain a new life as artificial bone cartilage**

---



Researchers reveal how blue light exposure is damaging our eyes



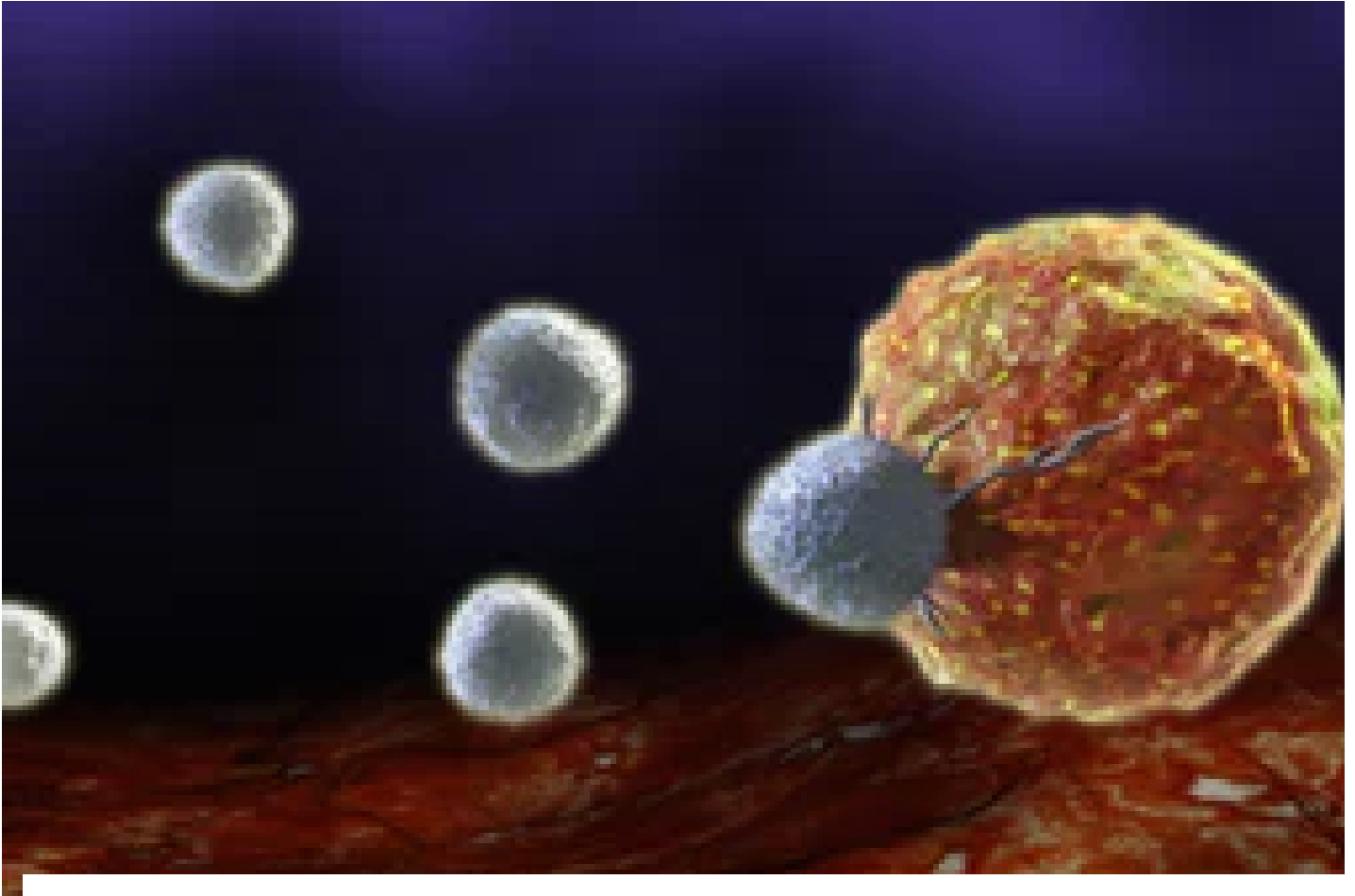
"Dinosaur superhighway" tracked to fossil footprints in Alaska



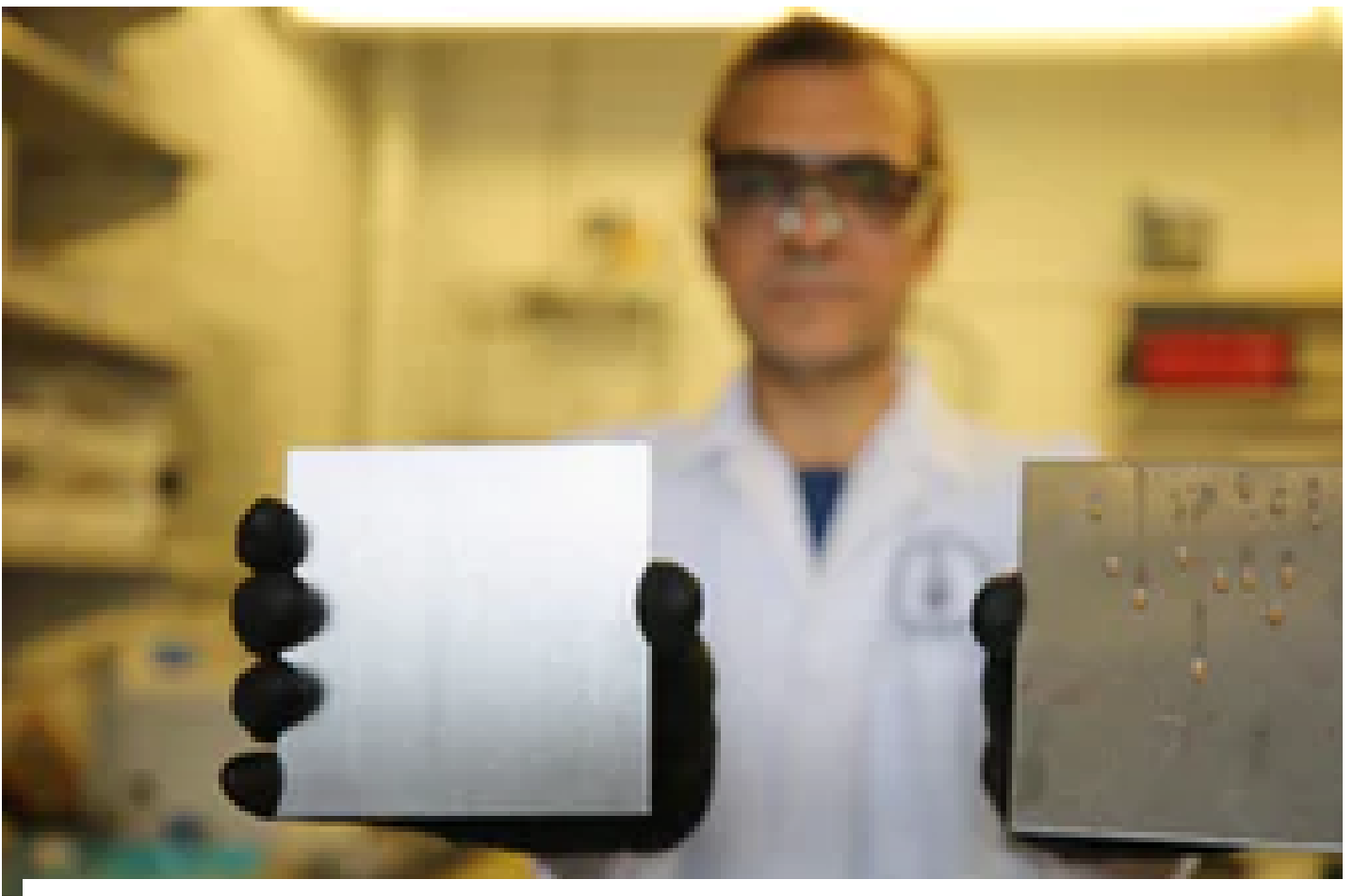
**Tomato DNA could be used to thwart breast implant counterfeiters**



**Oldest evidence of bone found in 400 million-year-old fish fossils**



A gene that causes hair loss may be recruited to help kill cancers



Cooking oil used to turn steel antibacterial

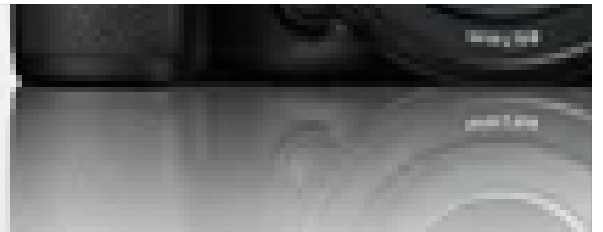
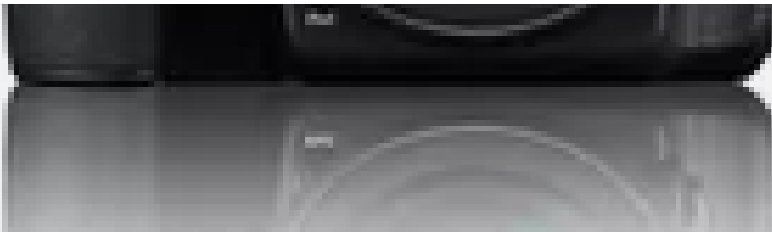


EDITORS CHOICE



Striking drone photo series places class divide under the spotlight

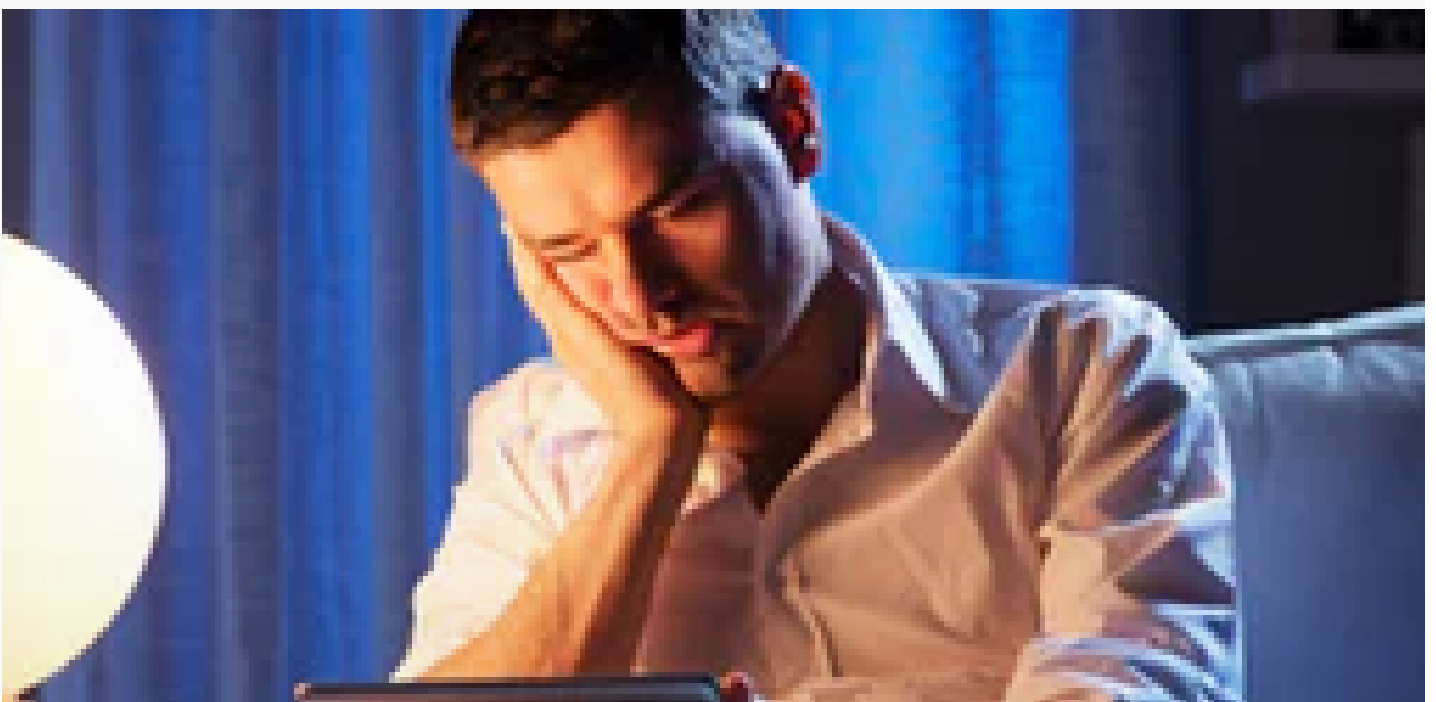


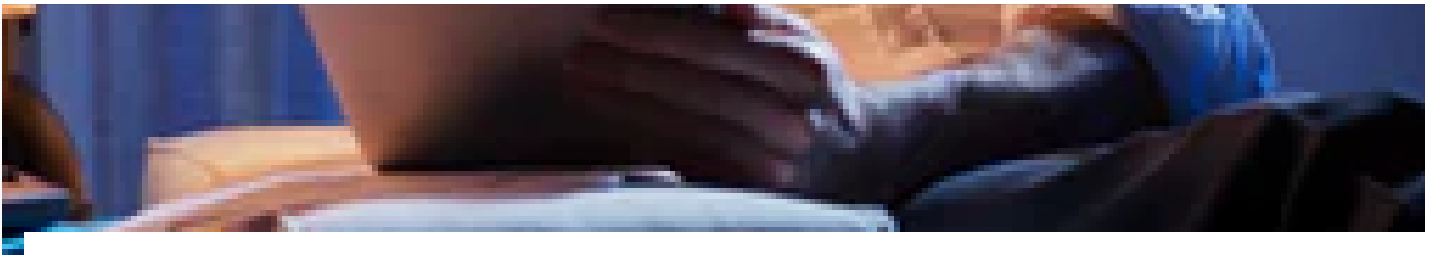


**Compare the latest tech gear**

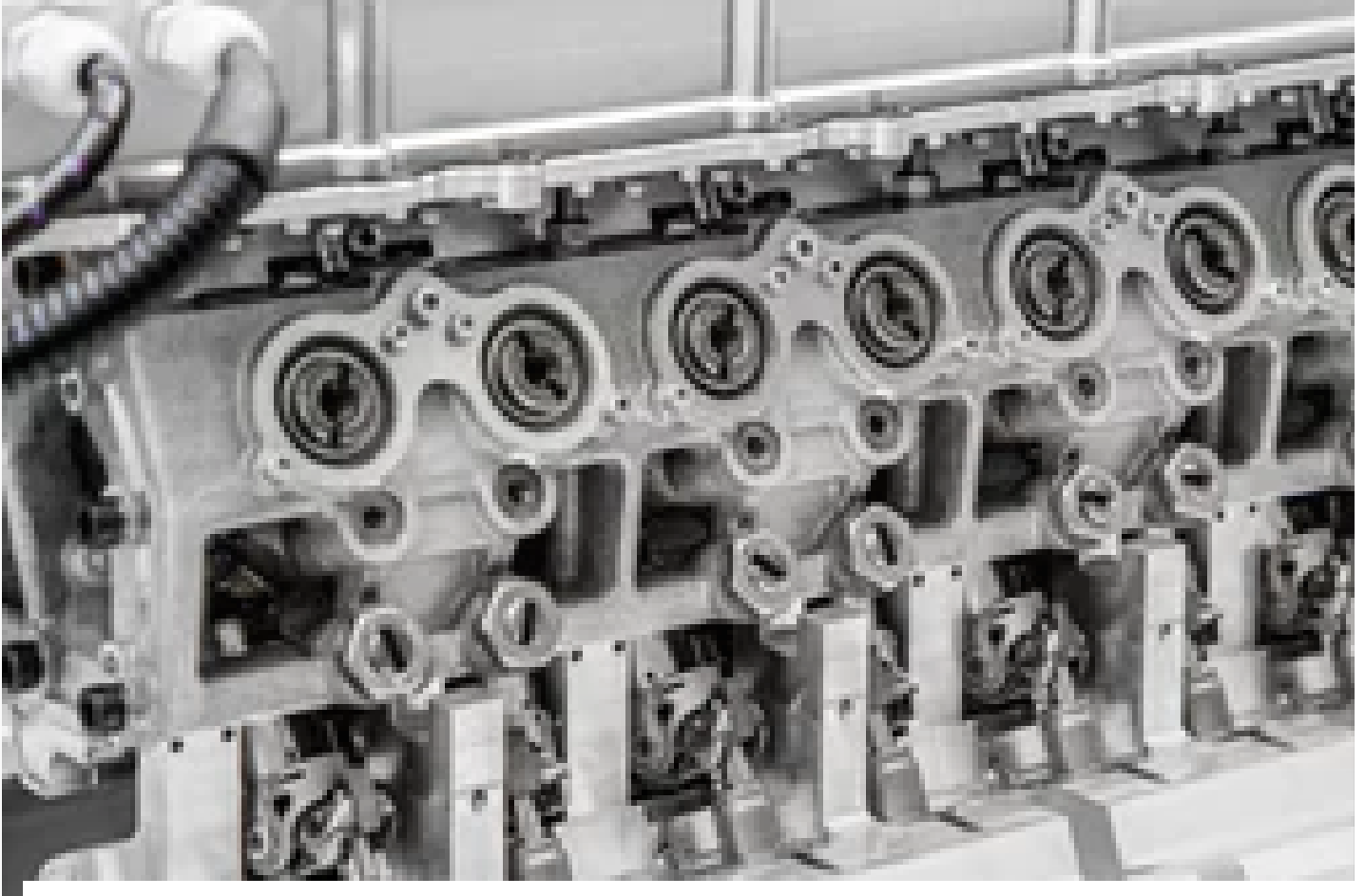


**Review: 2019 Ram 1500 Rebel is big, beefy, off-road goodness**

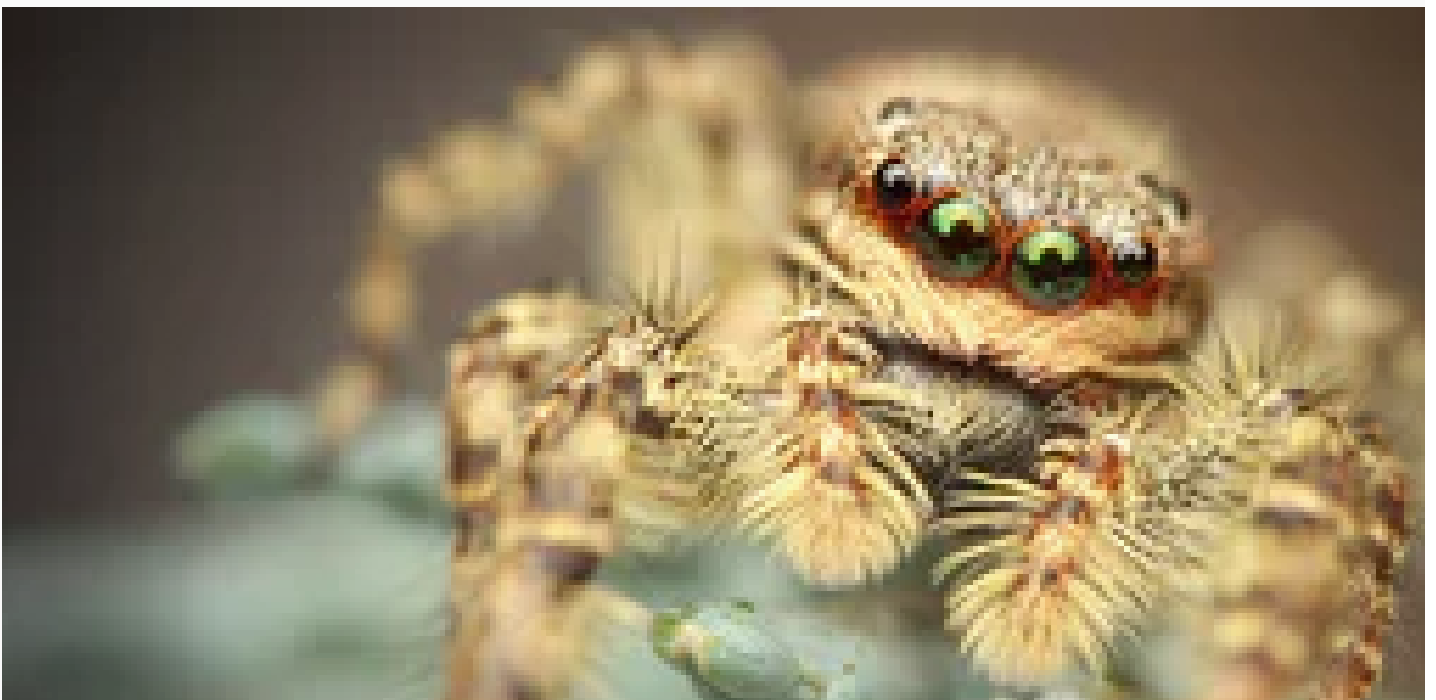


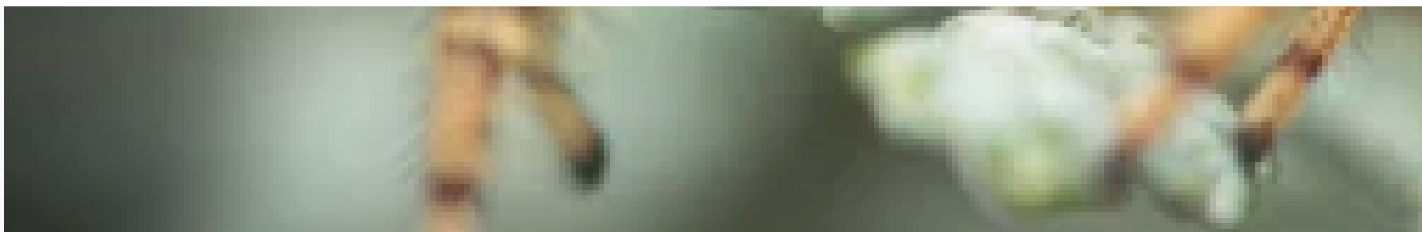


**The right to disconnect: The new laws banning after-hours work emails**



**World's first fully digital valves open up engine possibilities**

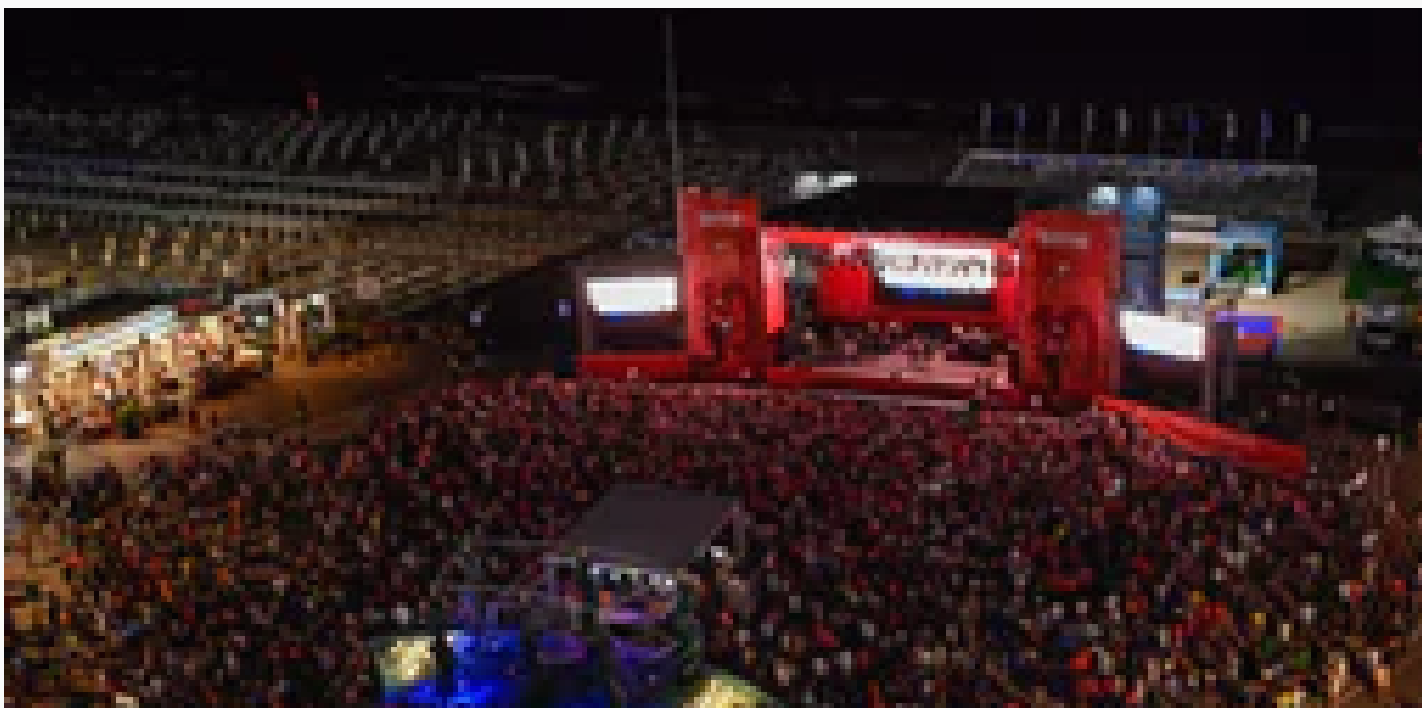


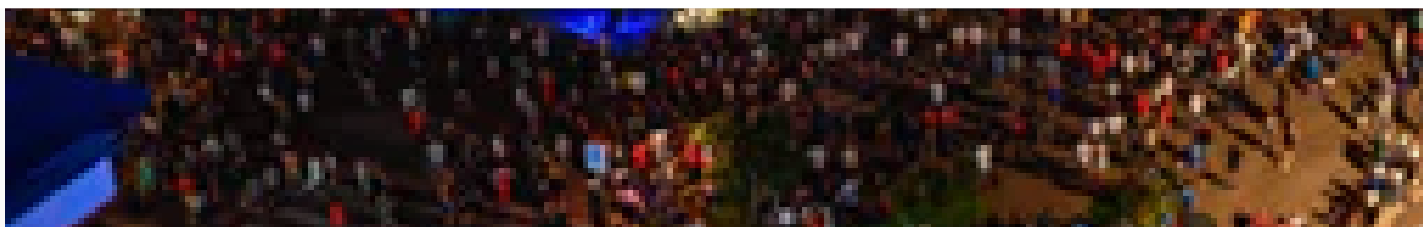


**Small wonders: The winners of the Macro Art Photography awards**



**Camperliebe turns the Hyundai H350 into a sleek, smart camper van**

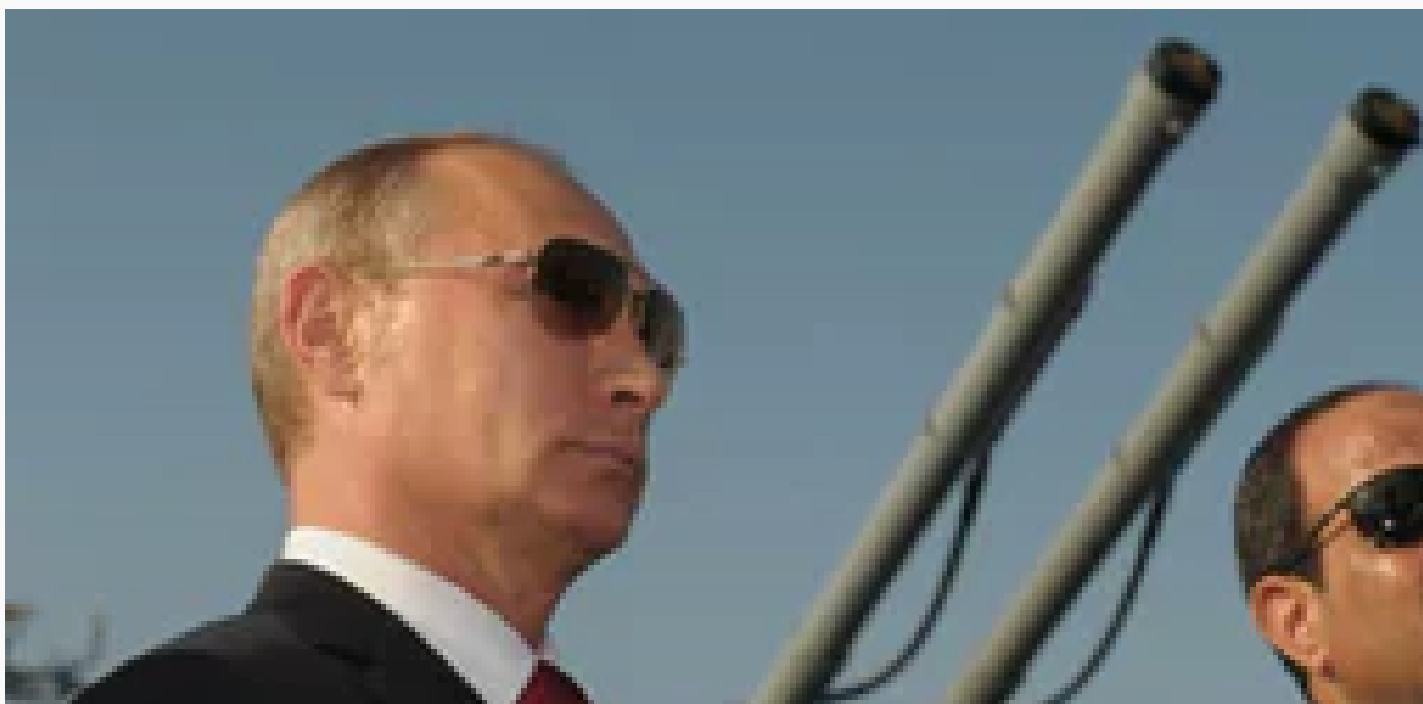


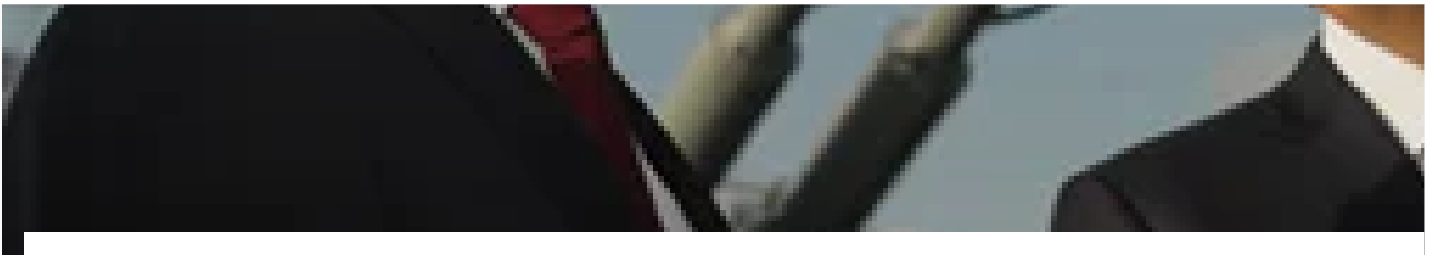


Pictorial: 2018 World Ducati Week - heaven for the Ducatisti



CityHawk eVTOL flying car entering "full-scale development"



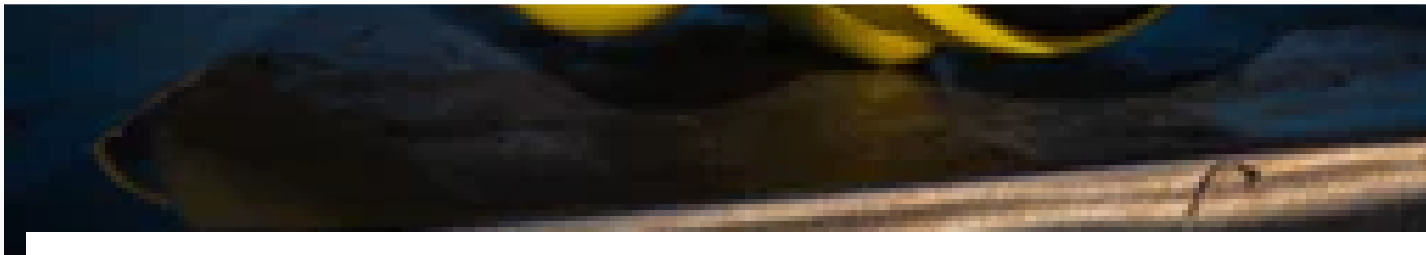


**Opinion: How fake news is being co-opted by governments around the world to suppress dissent**



**Xbox One vs. PS4 vs. Switch: Comparing the current gaming consoles**





**Review: Gladius Advanced Pro underwater drone turns the seabed into an adventure zone**

**OVER 280,000 PEOPLE RECEIVE OUR EMAIL NEWSLETTER**

See the stories that matter in your inbox every morning

Enter your email address...

**SUBSCRIBE**

[TOP](#) [HOME](#) [ABOUT](#) [CONTACT](#) [PRIVACY](#) [TERMS & CONDITIONS](#) [ADVERTISE](#)

COPYRIGHT © GIZMAG PTY LTD 2018

GIZMAG IS NOW NEW ATLAS