

BEST FROM SCIENCE JOURNALS: MYSTERIES OF A GOAT'S GUT

Relevant for: Science & Technology | Topic: Science and Technology- developments and their applications and effects in everyday life

Novel microbes play important roles in cellulose degradation in goat gut | Photo Credit: [S. SUBRAMANIAM](#)

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[Published in Nature Microbiology](#)

How does a goat manage to eat the fibrous parts of a plant and extract the nutrients locked behind thick cell walls? To understand this process, researchers from the University of California collected their fecal samples and carried out about 400 experiments. The team found over 700 novel microbial genomes which included rare fungi playing important roles in this cellulose degradation. Also, if you blame goats and cows for methane emissions, it is time to stop and start blaming these microbes, as the study found them to be behind methane production.

[Published in Advanced Materials](#)

Inspired by origami, MIT engineers have developed a medical patch that can be used to treat internal injuries. The patch can be folded around surgical tools and delivered through airways or intestines. The patch is foldable and paper-like when dry and becomes a stretchy gel when it reaches wet tissues. The team is now working with surgeons to optimise the design.

[Published in Nature](#)

An international team of scientists has discovered the remains of a fungi-like microfossil from Guizhou Province in South China. The team notes that it lived about 635 million years ago and is the oldest terrestrial fossil ever found. More studies on the fossil will help understand the paleoclimate change, the early life and plant evolution.

[Published in Nature Electronics](#)

Do you love 'The One Ring' from 'The Lord of the Rings' which rules them all, bring them all? Then meet this single cryogenic chip that can control thousands of qubits or the building blocks of quantum computers. It was designed using a custom silicon chip and was coupled to a quantum system. The device also helps get away with unwanted cables. "With just two wires carrying information as input, it can generate control signals for thousands of qubits," Microsoft Senior Hardware Engineer, Kushal Das, a joint inventor of the chip, explains in a release.

[Published in PNAS](#)

Microscopic marine life forms help in generating oxygen and taking up carbon dioxide just like rainforests on land. But how do they know when it is day or night? Can they see? By analysing RNA from seawater samples, researchers have now identified four main groups of photoreceptors (cells that are triggered by light). The team notes that the discovery could help in the field of optogenetics, where light is used to control a cell's functions.

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As the climate continues to warm and the mixed layer continues to thin, scientists might lose the ability to predict annual ocean surface temperatures.

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