

Breathing on Mars: AI-powered 'robot chemist' could analyze materials on other planets and figure out how to create oxygen

A robot chemist powered by [artificial intelligence](#) could solve the puzzle of providing oxygen to humans on Mars, according to the results of a new study.

The study, published in Nature Synthesis, found that an AI robot could quickly figure out how to cook up vital oxygen for survival compared to humans, who would take a lifetime to complete such a task.

The reason, according to the paper, is there are more than a million potential oxygen evolution reaction (OER) [catalysts on Mars](#), which would give humans too many possibilities to work with when trying to create oxygen. Adding to the problem would be communication with Earth to solve the problems, with transmissions taking as long as 20 minutes to travel between the home planet and Mars.

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The study envisions that instead of the lifetime a human would consume with a trial-and-error method, AI robots could solve the puzzle within six weeks.

"Within six weeks, the AI chemist built a predictive model by learning from nearly 30,000 theoretical datasets and 243 experimental datasets," the study reads.

According to a report in Universe Today, robot chemistry has made continued advances in recent years.

[This is an excerpt. Read the full article here](#)