AI-engineered materials could absorb CO2 faster than trees — and speed up carbon cleanup initiatives

Scientists have hailed the “exciting” discovery of a type of porous material that can store carbon dioxide.

The research, published in the journal Nature Synthesis, saw a team led by scientists at Heriot-Watt University in Edinburgh create hollow, cage-like molecules with high storage capacities for greenhouse gases like carbon dioxide and sulphur hexafluoride.

Sulphur hexafluoride is a more potent greenhouse gas than carbon dioxide and can last thousands of years in the atmosphere.

“Planting trees is a very effective way to absorb carbon, but it’s very slow. So we need a human intervention – like human-made molecules – to capture greenhouse gases efficiently from the environment more quickly,” [researcher Dr. Marc Little said]

The researchers used computer simulations to accurately predict how molecules would assemble themselves into the new porous material, a method which Dr Little said could be further enhanced in future through the use of artificial intelligence (AI).

He said: “Combining computational studies like ours with new AI technologies could create an unprecedented supply of new materials to solve the most pressing societal challenges, and this study is an important step in this direction.

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