

Successfully manufactured equipment to capture and separate CO₂ from emissions for high efficiency and low cost

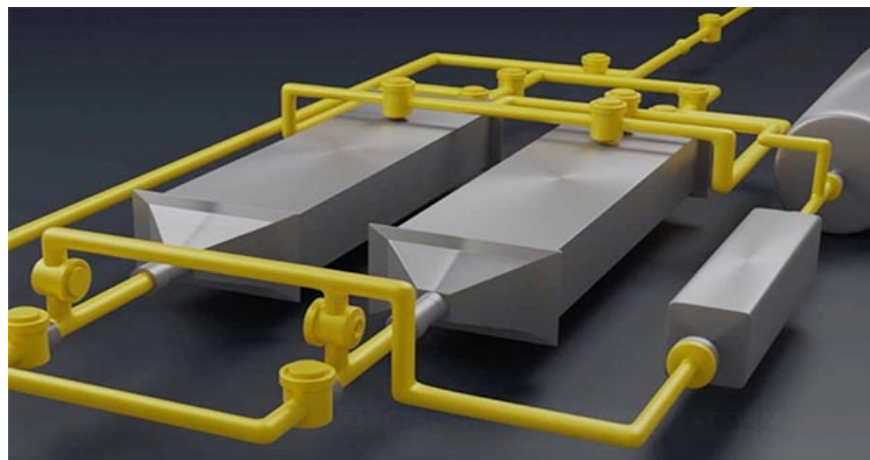
MIT engineers have built a device that can capture and separate carbon dioxide while using very little energy.

Capturing and separating carbon dioxide (CO₂) from smoke, and even removing it directly from the air, is, in theory, the best option to avoid the catastrophic effects of climate change. It is not a simple task to do this on a large scale, but the newly introduced invention of scientists from Massachusetts Institute of Technology (MIT) is likely to be the solution. effective.

Accordingly, MIT engineers have built a device that can capture and separate carbon dioxide while using very little energy and operating costs are much cheaper than current technologies.

Basically, this device has a very similar structure to a battery. It absorbs CO₂ from the air passing through its electrodes. With this mechanism, the device can be built to be small and flexible in size according to its use, allowing easy installation in different sources of CO₂ emissions, from vehicle exhaust pipes. through to chimneys of industrial plants.

Moreover, the device can be used to filter CO₂ from factories' emissions as well as burning fossil fuels and directly pulling it out of the atmosphere - where CO₂ is present. Much lower. Existing methods for absorbing carbon dioxide from flue gases usually use aqueous solutions of solid or amine absorbing material. This solution must be heated to release carbon dioxide and reuse amines. This process consumes a lot of energy.



MIT's new system only uses electricity, so it can fully operate using renewable energy. The device contains 2 thin, flexible electrode plates covered with two different chemical compounds. During charging, one of the

compounds, called polyanthraquinone, will react with the CO₂ molecule and store it in the electrode.

The idea of the scientists is to transmit a stream of exhaust gas or air through the device during charging to filter CO₂ from there. When the electrode is saturated, the device will be put into discharge mode and pure CO₂ released can be compressed for storage underground or for use as fuel and other chemicals. Or 2 separate devices can be operated in opposite modes to remove CO₂ continuously.

Tests show that MIT equipment consumes 10 times less energy than current techniques, and has high practical applicability due to its low cost and flexible usability.

You finished reading the article "**Successfully manufactured equipment to capture and separate CO₂ from emissions for high efficiency and low cost**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.