

# Carbon dioxide can be continuously broken down into solid carbon - Xpecunia's subsidiary has succeeded in proving a proprietary reactor technology results in a process that is deemed patentable

**A patentable reactor for the continuous break down of carbon dioxide into solid carbon and oxygen gas has been developed. This may open up a large market for the company. The development has been carried out entirely in-house and the company owns the rights to the reactor.**

Cretuner, which operates in the field of environmental technology, has carried out a number of repeated experiments in its research and development activities to break down the gas carbon dioxide efficiently into its constituent elements of solid carbon and oxygen gas. The company considers this to be a revolutionary energy-efficient process with the potential to contribute to positive change on a very large scale on an environmental perspective.

The end result is that the gas carbon dioxide is broken down into the elements carbon and oxygen. This process is driven by heating to moderate temperatures an alloy mixture that acts as a catalyst consisting of two non-toxic metals. Carbon dioxide passes through the catalyst and separates. With this as the core principle, a reactor is created which is connected to a carbon dioxide source; the reactor can be easily powered by waste heat. Cretuner has developed a design for such a reactor which it intends to patent. The reactor can be easily produced by 3D printing and scaled to the appropriate size.

The implication is that a traditional efficient incinerator can in principle only emit oxygen gas through this process. An ordinary gas layer under normal atmospheric pressure is used as an intermediate layer while the reactor works to decompose the carbon dioxide. This is a major step forward in combating greenhouse gas emissions.

The further implication is that carbon dioxide from CCS processes in industry, for example from today's district heating plants, does not have to be transported away and stored underground at great cost as is done today. Cretuner will thus be able to receive carbon dioxide and decompose it into harmless carbon at a cost that is far lower than today's system solution. Cretuner's solution is a permanent harmless decomposition of carbon dioxide. The environmental and economic benefits of avoiding carbon storage altogether are significant.

Cretuner intends to patent the reactor design and develop it at a scale suitable for various industrial purposes. The closest approach is to use the technology for Cretuner's own environmental technology and primarily to seek cooperation with CCS activities.

The process is highly efficient and up to 97% of carbon dioxide is decomposed into solid form, according to previous basic scientific research in the field. The company has thus validated previous research results and developed its own reactor solution for the continuous decomposition of carbon dioxide. What's new is that the energy supply comes from waste heat and a unique reactor design. The waste heat is recycled from Creturmer's mechanical equipment for its regular environmental technology. The aim has been to eliminate carbon dioxide emissions, which has led to the development of the reactor.

The company's management is aware that this is a significant assertion to make and will actively seek collaboration with scientific academia and industrial partners during further development.

Creturmer's CEO Joakim Erlandson comments "This is a major breakthrough that closes the circle for our business and creates entirely new opportunities. It opens up revolutionary opportunities for the company commercially in the long term."

Xpecunia Group CEO Daniel Moström comments "The significance of this new solution should certainly not be underestimated. With great respect for science, we will actively seek commercialization of this new capability."

Attached to the press release are images showing solid carbon created from carbon dioxide during repeated reactions.

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Xpecunia is a group with two business units.

The technical part is a technical computing company active exclusively in HPC, the market for technical computing capabilities.

The environmental part, Creturmer, is active in modern fast climate compensation with digital tracking solutions.

The company has its own facilities in Sweden with its own energy production, among the largest in Sweden, to reduce raw material costs and environmental impact.

The company is listed on NGM Nordic SME in Stockholm, Sweden and on the Stuttgart Stock Exchange in Germany.

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## Attachments

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