OPEN ACCESS Freely available online

ISSN: 2473-3350
Journal of Coastal Zone Management

Commentary

Reduction of CO_2 from Air to Combat Global Warming

Nicola Cavalli*

Department of Atmospheric Science, University of Waterloo, Waterloo, Canada

ABOUT THE STUDY

The CO_2 concentration in the atmosphere is a major problem in global warming, and there is one of the most important effects on the increase in CO_2 concentration. CO_2 recovery from the atmosphere represents one of the most innovative methods to address the problem. This study proposes that the removal of high CO_2 concentrations in the earth atmosphere is due to photocatalytic conversion to formic acid of CO_2. The use of available materials such as water and light allows the process to easily adapt. This study conducts experiments on photocatalytic conversion of CO_2 to formic acid using an RK-X reactor. Experiments performed revealed 2.6 g/L formic acid achieved by photocatalytic CO_2 conversion. It can be easily reopened and adopted on a large scale with the right investment. This study proves that the conversion of CO_2 to formic acid is fully possible and shows the actual application of the process through the benefits associated with formic acid. The formic acid produced can function as a hydrogen carrier. This allows the solar energy to be converted and stored in chemical bonds. This is because its properties are one of the best hydrogen energy carriers.

One possible approach to addressing the global warming crisis is to remove CO_2 from the atmosphere and convert it to formic acid. This study focuses on this new idea with the aim of documenting each stage of this process, the chemists behind it, the experiments performed, and the possible practical applications of this formic acid. Analyze how the process can be reproduced, from laboratory experiments to large-scale implementations. In this study, only water, light, and the listed catalyst (RRR) are used to convert CO_2 to formic acid. It also analyzes how formic acid fits into the broader goals of cleaner energy goals and aligns them with current sustainable development goals.

Hydrogen is recognized as a good fuel and is in high demand, especially due to growing concerns about finite fossil fuels. Hydrocarbons provide the most abundant source of hydrogen, especially in the carboxylic acid family. Formic acid falls into this category and is increasingly used as one of the raw materials for hydrogen production, mainly for hydrogen-bonded polymers. Mass production of formic acid to support the subsequent production of hydrogen energy is at the heart of extensive research with promising potential for melting finite fossil fuels.

Hydrogen energy is touted as the future of energy, and regions like Europe aim to fully switch to hydrogen energy by 2030. It is still a relatively new source of renewable energy and is therefore in the early stages of research and development, but its potential makes it very attractive to solve renewable energy problems around the world. The high energy efficiency, economic competitiveness, and overwhelming social and environmental benefits associated with hydrogen energy make hydrogen energy the ideal energy for the future.

Correspondence to: Nicola Cavalli, Department of Atmospheric Science, University of Waterloo, Waterloo, Canada, E-mail: nicola.cavalli@unibo.it

Received: 01-Mar-2022, Manuscript No. JCZM-22-16186; **Editor assigned:** 04-Mar-2022, PreQC No. JCZM-22-16186(PQ); **Reviewed:** 18-Mar-2022, QC No JCZM-22-16186; **Revised:** 25-Mar-2022, Manuscript No. JCZM-22-16186(R); **Published:** 31-Mar-2022. DOI: 10.35248/2473-3350.22.25.490

Citation: Cavalli N (2022) Reduction of CO_2 from Air to Combat Global Warming. J Coast Zone Manag. 25:490.