World Academy of Science, Engineering and Technology
International Journal of Energy and Environmental Engineering
Vol:17, No:10, 2023

Extracting the Atmospheric Carbon Dioxide and Convert It into Useful Minerals at the Room Conditions

Authors : Muthana A. M. Jamel Al-Gburi

Abstract : Elimination of carbon dioxide (CO2) gas from our atmosphere is very important but complicated, and since there is always an increase in the gas amounts of the other greenhouse ones in our atmosphere, causes by both some of the human activities and the burning of the fossil fuels, which leads to the Global Warming phenomena i.e., increasing the earth temperature to a higher level, creates desertification, tornadoes and storms. In our present research project, we constructed our own system to extract carbon dioxide directly from the atmospheric air at the room conditions and investigated how to convert the gas into a useful mineral or Nano scale fibers made of carbon by using several chemical processes and chemical reactions leading to a valuable building material and also to mitigate the environmental negative change. In the present water pool system (Carbone Dioxide Domestic Extractor), the ocean-sea water was used to dissolve the CO2 gas from the room and converted into carbonate minerals by using a number of additives like shampoo, clay and MgO. Note that the atmospheric air includes CO2 gas has circulated within the sea water by air pump connected to a perforated tubes fixed deep on the pool base. Those chemical agents were mixed with the ocean-sea water to convert the formed acid from the water-CO2 reaction into a useful mineral. After we successfully constructed the system, we did intense experiments and investigations on the CO2 gas reduction level and found which is the optimum active chemical agent to work in the atmospheric conditions.

Keywords : global warming, CO_2 gas, ocean-sea water, additives, solubility level
Conference Title : ICEIPPCWM 2023 : International Conference on Effects of Industrial Pollution, Pollution Control and Waste Management
Conference Location : Tbilisi, Georgia
Conference Dates : October 02-03, 2023