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Carbon Sequestration Using a Magnetic Treatment System

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BRIEF DESCRIPTION

The technology is a technique for the capture and removal of carbonates in natural water sources. It features the use of an alternating electromagnetic field (AMF) to induce the formation of calcium carbonate or other carbonate compounds in suspension in water source. Additionally, carbonate compounds are removed using filtration device.

FULL DESCRIPTION

The present invention is a method for the capture and removal of carbonates (i.e. carbon sequestration) in natural fluids, such as ocean or river water. A flow system equipped with a pump is used to treat a fluid containing dissolved waste carbon dioxide and naturally occurring carbonic acid and other ions such as calcium, using the Aqua-PhyD alternating magnetic field (AMF) treatment system, to form carbonate particles in the fluid. The carbonate particles are then removed from the fluid using a device such as a filter or trap. This method may be equally applicable in the developing and developed countries.

Production of carbonates in the ocean and rivers is a natural method for sequestering carbon dioxide from the atmosphere. However, the rates of natural carbon sequestration cannot balance human production of greenhouse gases. Other methods of enhancing carbonate production can be expensive and potentially detrimental to the environment. The present invention takes advantage of the discovery that an alternating magnetic field can dramatically induce the precipitation of carbonate compounds in suspension, as opposed to on a surface where precipitation would normally occur. Waste carbon dioxide pumped into a fluid treated with an alternating magnetic field would thus react at a much higher rate to form solid carbonate particles that can be easily trapped in the fluid and disposed.

SUGGESTED USES

- » Long term capture and storage of carbon dioxide (i.e. carbon sequestration)

ADVANTAGES

- » Carbon sequestration in natural fluids without the harmful addition of chemicals

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