

# Ceramic materials for the capture of carbon dioxide



## Description

This development consists of a method for synthesizing several ceramic materials able to capture greenhouse gases such as carbon dioxide (CO<sub>2</sub>), offering a viable option to the environmental problems caused by high energy consumption from fossil fuels. This invention takes advantage from the high affinity between ceramic materials and greenhouse gases. In industry, it is easier to work with solids and liquids such as ceramic than with solutions based on amine type organic compounds. Unlike polymers and amines with which the gas must first be cooled to trap, ceramics take advantage of the combustion gas' temperature. The synthesized materials include silicates, aluminates, cuprates and zirconates from alkaline and alkali earth dense or porous elements.

## Application

These ceramics can be used in industries such as cement and power industry, in which the high consumption of fossil fuels results in the production of important amounts of greenhouse gases such as CO<sub>2</sub>.

## Stage of Development

Laboratory prototypes.  
Additionally the inventors are conducting a project for transforming CO<sub>2</sub> into added-value products.

## IP Status

Patent applications Nos. MX/a/2009/006191 and MX/a/2012/003936

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Carbon  
Capture

## Market potential

In spite of not reaching an international agreement on greenhouse gases reduction, certain governments are implementing initiatives for fighting climate change. Their main focus is power production, the source of 40% of CO<sub>2</sub> emissions, which may constitute an attractive opportunity for the users of this technology.

## Transferring conditions

- ✓ Technological development agreement (optional)
- ✓ Licensing (will include upfront payment and royalties)

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