PARTNER SEARCH FORM

DATE: 12.01.2011

PROJECT INFORMATION

TITLE: Developing molecular sieves - based CO_2 Capture and Storage Technologies in Gaseous Fuel Power Generation and Other Industries

ACRONYM: ROZECST

SUMMARY: Capture of CO_2 from gaseous fuel power generation and other industries is gaining widespread interest as a potential method of reducing greenhouse gas emissions and in other industries. Pathways for CO_2 sequestration include indirect sequestration through the enhancement of the Sea's CO_2 uptake from the atmosphere. Seasonal variability increased in the modern industrialization era with the inclusion of eutrophication, making the Black Sea both a sink and source of CO_2 to the atmosphere. The molecular sieves can provide the following benefits: longer adsorption times with better operational stability, less frequent regenerations, lower energy costs and longer adsorbent life. A Minitab® statistical software will be used to analyze the data. Based on the experimental results, this software has the ability to analyze and estimate the main effects, as well as the interactions between parameters affecting the CO_2 recovery. The main objectives are the following:

- Trends in CO_2 capture and desorption
- Comparative study of physico-chemical and mechanical properties of natural zeolites Barsana (Maramures County, Romania) and X zeolites
- Investigation the sorption dynamics of CO_2 in the framework natural zeolites and zeolites X using computer simulations at both high temperature and low temperature
- Adoption Technology flow and desorption of CO_2 sequestration
- Advanced simulation models
- The assessment of costs and risks.

The purpose of this research is to develop a simple, inexpensive technology to remove CO_2 as an essentially pure stream from flue gas using a natural zeolites-based sorbent (Zeolitic Tuff of Barsana, Maramures County, Romania)and zeolites X. Remarkable high ion exchange capacity to remove CO_2 and abundance of natural zeolites Maramures Depression (zeolitic tuff of Barsana, Romania).

KEYWORDS*: CO_2 recovery from flue gas, CO_2 sequestration, natural zeolites, storage

CALL: BS-ERA.NET 2010

NAME(S) of the PARTNER(S) INVOLVED:
NORTH UNIVEERSITY OF BAIA MARE, ROMANIA
ENERGY INSTITUTE OF THE ACADEMY OF SCIENCES MOLDOVA

SCIENTIFIC AND TECHNOLOGICAL EXPERTISE OFFERED*:

This partnership will bring together national laboratories and regional university alliances to accelerate the development of carbon capture and storage technologies from inception to full-scale deployment. Information gained through the partnership will further effort to develop lower cost, efficient industrial-scale processes. The collaboration builds upon the Administration's goal to overcome the barriers to widespread. Through the use of advanced modeling and simulation, researchers will develop science-based methods to lower the cost of carbon capture while reducing technical and financial risks associated with its

desorption.

Major Equipment: Perkin Elmer Atomic Absorption spectrometer - AAnalyst 8, Site Retsch by sieve, Oven Binder, Furnace NABERTHERM, Termobalance KERN MLS 50-3, Analytical Balance KERN, System Based on Microwave Decomposition MWS-2, Spectrophotometer T60U: UV – VIS, Flamfotometer SHERWOOD, Magnetic Stirrer with Heating HEIDOLPH, Cromatograph KNAUER HPLC, Quaternary Pump Type Series 200 LC, Equipment for Determination of Inorganic and Organic Carbon TOC, Fourier Transform Infrared Spectrometer (FT-IR), Scanning Electron Microscope The Philips XL- 30- ESEM TMP, X-ray Diffractometer.

PARTNER SOUGHT

SCIENTIFIC AND TECHNOLOGICAL EXPERTISE REQUESTED:
Partners with expertise in control, treatment, costs and risk assessment of capture and storage adopted technology

EXPECTE D CONTRIBUTION TO THE PROJECT:
Partners are mainly expected to provide all available documentation concerning scientific, technological, environmental and economical research activities / publications by made their institution as well as made by joint research project / activities in which they attended in the field of CO_2 capture.

ORGANISATION TYPE*:

☒ Higher Education ☒ Research Institute

☒ R&D Company ☐ SME ☐ Other

HOW MANY PARTNERS ARE REQUIRED?
Need three parteners

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*** mandatory fields**