



# GHGT10

19-23 September 2010, RAI Amsterdam, The Netherlands

Presented By : Sevtaç BÜLBÜL

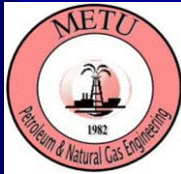
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# PhD STUDY THESIS TITLE:

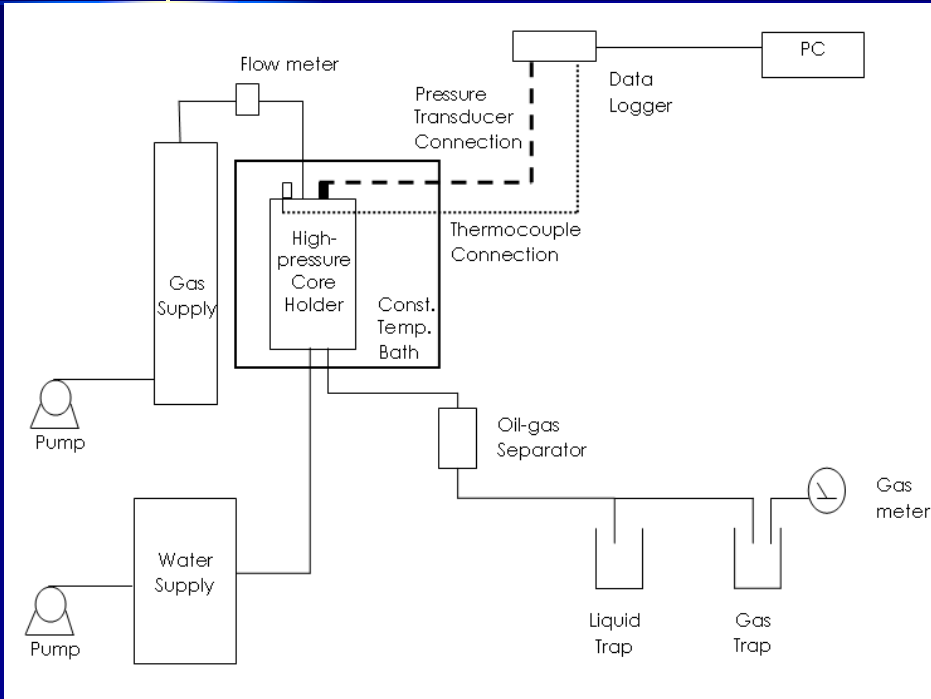
## MATRIX FRACTURE INTERACTION IN CARBONATE ROCKS DURING CO<sub>2</sub> AND CO<sub>2</sub>-STEAM INJECTION

An experimental study is carried out;

- to investigate matrix-fracture interaction in carbonate rocks during CO<sub>2</sub> and CO<sub>2</sub>-steam injection
- to understand the mechanisms of the gas oil gravity drainage (GOGD) concept due to the injection of two different gases (N<sub>2</sub> and CO<sub>2</sub>)
- to understand the influence of a fracture on the GOGD process

# EXPERIMENTAL SETUP

- a saturation system
- a fluid injection system
- a core holder system
- a fluid production system
- a data logger system will be used.



- Core sample will be saturated with synthetic brine. Synthetic oil will be pumped and later on CO<sub>2</sub> injection will be performed.
- Produced fluid volumes will be collected and oil recovery as a function of time will be recorded.

# PROJECT WORK

- A joint project is conducted by Petroleum Research Center at Middle East Technical University, Ministry of Energy and Natural Sources, Ministry of Environment and Forestry, Turkish Petroleum Cooperation (TPAO) and Electricity Production Company (EUAS), supported by Technological Research Council of Turkey (TUBITAK).
- project started in 2007 and recently ended, focused on:
  - the determination of the amount of CO<sub>2</sub> emissions from industrial facilities such as thermal power plants, steel industry, cement factories and refineries in Turkey
  - selection of potential storage sites
  - modeling of storage in a chosen oil field
  - economical feasibility of transportation of CO<sub>2</sub> to the storage site

# PROJECT WORK

- There will also be a poster presentation of the project by Dr. Okandan at GHGT-10, titled as:

"Assessment of CO<sub>2</sub> Storage Potential in Turkey, Modeling and a Prefeasibility Study for Injection into an Oil Field" (Poster Session B- Storage Capacities-198)

- As an institution, METU Petroleum Research Centre will take part in a FP7 Project titled as:

"Pan-European Coordination Action on CO<sub>2</sub> Geological Storage" starting on 01/11/2010.

The aim of the action on CO<sub>2</sub> geological storage is building a network of research body on CO<sub>2</sub> storage in all the relevant EU member states and Associated countries.