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**Title of M.Sc. thesis: AQUIFER CHARACTERIZATION WITH TRACER TEST TECHNIQUE;  
Permanent CO<sub>2</sub> Sequestration into Basalt, SW-ICELAND**

**Description:**

Part of Main project. Permanent CO<sub>2</sub> Sequestration into Basalt –Iceland.

Mineral sequestration is among several promising methods of CO<sub>2</sub> reduction. It involves incorporation of CO<sub>2</sub> into a solid phase via precipitation of carbonate minerals. A prerequisite to carbonate precipitation is the availability of aqueous metal cations and a network of porous media for fluid flow and water rock interactions. The Hellisheidi-Threngsli lava field in SW Iceland comprises ideal conditions for studying the feasibility of permanent CO<sub>2</sub> storage as minerals in basaltic rocks. In this project I will analyze a tracer test which conducted between two wells at the Hellisheidi-Threngsli site to characterize the physical properties of the main aquifers (within the target zone). The results suggest that most of the water flows between the wells is through a homogenous thick layer with high tortuosity along flow paths consequently a high reactive surface area for water rock interactions.

**Supervisors:**

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**Papers and abstracts:**

- **M. RezvaniKhalilabad**, 2008. Abstracts, Natural Science Symposium 2008, University of Iceland
- **M. RezvaniKhalilabad**, G. Axelsson, 2008. *ASSESSMENT OF THE HOFSTADIR GEOTHERMAL SYSTEM IN W-ICELAND*, proceedings, Thirty-Third Workshop on Geothermal Reservoir Engineering, Stanford University, January, 2008
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- **M. RezvaniKhalilabad**, 2004. *Strategic plan in geothermal development, Update September, 2004*, Renewable Energy Organization of IRAN (SUNA), Tehran, Internal Report. (In Persian) 20p
- **M. RezvaniKhalilabad**, 2004. *An Economic Evaluation of Power Generation of Meshkinshar Geothermal Field*, (Sabalan, NW-Iran), 2004, Renewable Energy Organization of IRAN (SUNA), Tehran, Internal Report. (In Persian) 70p.
- **M. RezvaniKhalilabad**, 2001. *Possible scenarios of geothermal direct-use utilization in IRAN*, Renewable Energy Organization of IRAN (SUNA), Tehran, Internal Report. (In Persian)140p.
- **M. RezvaniKhalilabad**, 2003 *Reservoir Parameters for Well HE-05, Hellisheidi Geothermal Field, SW-Iceland*, Proceeding in yearbook 2003, UNU,GTP.
- **M. RezvaniKhalilabad**, **B. Talebi**, An Analysis of Well Measurements from the NWS-1 in Sabalan Geothermal Area, NW-Iran, World geothermal congress, 2005, Antalya, Turkey.
- **M. RezvaniKhalilabad**, Reservoir assessment of Damavand low temperature geothermal field. N – Iran. Renewable Energy Organization of IRAN (SUNA), Tehran, Internal Report.5 booklet, Persian, group project. (2004-2005)

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