Dr. Bora Yalcin

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Summary

• A professional in subsurface studies and operations since 2012.
• A petrophysical reservoir modeling and simulation engineer with 11 years (5 years in the industry and 6 years during my Ph.D.) of experience (flow simulations in heterogeneous fractured reservoirs).
• Broad knowledge and skills to translate and integrate seismic data, well data (flow tests and petrophysics), core data, or qualitative reservoir characterization into quantitative reservoir models.
• Built reservoir models of World Class Assets (over 100 kbopd production in fractured carbonate reservoirs).
• Scientific code developer for geoscience data analysis and modeling in high-level languages (Matlab and Phyton).
• Multiple Point Statistics simulation modeling, Discrete Fracture Network (DFN) modeling in PETREL. CCUS simulations emphasizing thermal and reactive transport simulations in CMG (STARS and GEM) honoring the fluid viscosity, solubility, and mineral trapping mechanism.

Research Highlights

• Advancements in the DFN modeling method
• Advancement in the CO_2 fluid modeling (solubility and enthalpy coupling) for CO_2 Plume Geothermal simulations

Experience

Doctoral Studies
KAUST (King Abdullah University of Science and Technology - Aug 2017 –Nov-2023)
Energy Resources and Petroleum Engineering Program: PI: Martin Mai, Ph.D. dissertation entitled: "Modeling CO_2 Sequestration and Geothermal Energy Extraction from Fractured Porous Geo-Reservoirs in Saudi Arabia"

Summer Internship
Aramco (Jun 2022 – Aug 2022)
In Aramco Expec Arc (Advance Research Center) in RETD (Reservoir Engineering Technology Department) I work as a Reservoir Engineer. Evaluation of novel methods for impure CO_2 storage and utilization in deep saline aquifers. Simulation of reactive transport phenomena (CO_2 +H2S injection) in saline aquifers with CMG software. Lead two patent disclosures that are in the filing stage.

Geoscientist
Genel Energy PLC (Apr 2014 – Nov 2016)
Global Subsurface Team- Reservoir Model and Studies Group Leading a static model (in PETREL environment) project of a world-class asset in the North Iraq Region. The field is producing over 100 kbopd with 27 wells (Tawke, Jeribe & Bina Bawi fields)

Geoscientist
TPAO (Turkish Petroleum – Feb 2012 – Apr 2014)
Adıyaman Project (Sambayat Field): Daily well operation management/decisions from headquarters in Ankara. Decisions on wellbore trajectory, perforation interval, and open hole DST interval planning. Leading fracture characterization and reservoir modeling project in low porosity carbonate reservoir (in Adıyaman region) in one of the biggest producing field in Turkey (Sambayat field).

Visiting Scientist
Stanford University (Jan 2013 – Mar 2013)
Fractured Reservoir Modeling Project operated by TPAO.
Developed a workflow to characterize fractured reservoirs with Prof. Atilla Aydin.

Education

King Abdullah University of Science and Technology
The Doctor of Philosophy, Energy Resources and Petroleum Engineering, GPA: 3.50/4.00 (2017-2023)

University of Oklahoma
Master of Science, Petroleum Geoscience, GPA: 4.0/4.0 (2009 – 2012)
Awards: Turkish Petroleum Company (TPAO) full scholarship for Master of Science degree

Middle East Technical University
BSc, Engineering Faculty, Honor Graduate (2003 – 2008)

Licenses and certifications

Machine Learning – Coursera (Aug 2021) Credential ID 3HKCW9LB62Y9

Skills

Field Development, Reservoir Modeling, MATLAB, CMG, Petrel, Reservoir Simulation, Reservoir Management
Geomechanics, Fracture Mechanics, Coaching & Mentoring

Patents

Thermochemical fluid injection to prevent cool front invasion in CO_2 geothermal reservoirs - US Patent office, Mar 2023
Lead inventor of the patent that was filed to the US Patent office based on work during Aramco summer internship 2022.
Authors: Bora Yalcin, Zuhair Al Yousif, Subash Ayarila, Abdulaziz Al Qasim

Methods for purifying CO_2 containing fluids within subterranean aquifers - US Patent office, Mar 2023
Lead inventor of the patent that was filed to the US Patent office based on work during Aramco summer internship 2022.
Authors: Bora Yalcin, Abdulaziz Al Qasim

Publications

International Journal of Rock Mechanics and Mining Sciences, Feb 2023
Title: "Elastic response of porous rocks to long-term deformation on strike slip fault networks in geo-reservoirs"
Authors: Bora Yalcin, Olaf Zielke, P. Martin Mai (Impact Factor: 6.85 [Peer reviewed Journal article])

Geothermics, Feb 2024
Title: "Potential for CO_2 plume geothermal and CO_2 storage in an onshore Red Sea Rift basin, Al-Wajj, Saudi Arabia: 3D reservoir modelling and simulations"
Authors: Bora Yalcin, Justin Ezekiel, P. Martin Mai (Impact Factor: 3.90 [Peer reviewed Journal article])

Awards

Best PhD Poster Award - InterPore, Nov 2021
KAUST Workshop on Porous Media &1st InterPore Saudi Chapter Annual Meeting; presented the Best Poster Award for my presentation entitled : Elastic response of porous rocks to accumulated slip on complex fault network. A case study from fault map to porous medium permeability alteration

Taqadam Startup seed fund – KAUST, Dec 2018
A new generation DFN modeling software development and technology company start up pitch which won 20,000$ USD seed fund from the Taqadam Startup Accelerator in 2018