Faras **Al Balushi**

Sultan Qaboos University | Petroleum and Chemical Engineering Department

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Education and Credentials

DOCTOR OF PHILOSOPHY (PH.D.) IN ENERGY & MINERAL ENGINEERING, DEC 2023; Pennsylvania State University, University Park, PA

• Dissertation: Particle-Scale Simulations for Geothermal Energy Applications

• GPA: 3.85/4.0

MASTER OF SCIENCE (M.Sc.) IN ENERGY & MINERAL ENGINEERING, AUG 2020; Pennsylvania State University, University Park, PA

- Thesis: Using Digital Rock Analysis to Estimate Flow Properties of Stress-Sensitive Rocks
- GPA: 3.89/4.0

BACHELOR OF SCIENCE (B.Sc.) IN PETROLEUM & NATURAL GAS ENGINEERING, MAY 2020; Pennsylvania State University, University Park, PA

- Minor: Energy Business and Finance
- GPA: 3.97/4.0

Professional Experience _____

Sultan Qaboos University, Muscat, Oman, September 2024 to Present **ASSISTANT PROFESSOR**

PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PA, USA, JANUARY 2024 TO AUGUST 2024 **POSTDOCTORAL SCHOLAR**

PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PA, USA, JANUARY 2019 TO DECEMBER 2023 GRADUATE RESEARCH ASSISTANT

PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PA, USA, JANUARY 2021 TO DECEMBER 2023 GRADUATE TEACHING EXPERIENCE

Occidental of Oman Incorporated, Muscat, Oman, June 2018 to August 2018 **PETROPHYSICIST INTERN – WADI LATHAM FIELD**

Publications _____

Peer-Reviewed:

- Al Balushi, F., Zhang, Q. and Taleghani, A.D., 2024. On the impact of proppants shape, size distribution, and friction on adaptive fracture conductivity in EGS. *Geoenergy Science and Engineering*, 241, p.213115.
- Al Balushi, F., Zhang, Q. and Dahi Taleghani, A., 2023. Improving enhanced geothermal systems performance using adaptive fracture conductivity. *Applied Thermal Engineering*, 233, p.121206.
- Al Balushi, F., Zhang, Q. and Dahi Taleghani, A., 2023. Autonomous Fracture Conductivity Using Expandable Proppants in Enhanced Geothermal Systems. *SPE Journal*, 28, p. 2660.
- Liu, S., Al Balushi, F. and Dahi Taleghani, A., 2023. Heat extraction through conductive proppants. *Sustainable Energy Technologies and Assessments*, 60, p.103514.
- Al Balushi, F. and Dahi Taleghani, A., 2022. Digital rock analysis to estimate stress-sensitive rock permeabilities. *Computers and Geotechnics*, *151*, p.104960.
- Yu, H., Taleghani, A.D., **Al Balushi, F.** and Wang, H., 2022. Machine learning for rock mechanics problems; an insight. *Frontiers in Mechanical Engineering*, *8*, p.1003170.

Proceedings:

- Al Balushi, F. and Taleghani, A.D., 2024, August. Geomechanical Considerations for Hydro Energy Storage in Fractured Wells. In *SPE Energy Transition Symposium* (p. D012S002R001). SPE.
- Al Balushi, F. and Dahi Taleghani, A., 2023, October. Thermally Conductive Proppants to Improve Heat Extraction in Geothermal Systems. In SPE Annual Technical Conference and Exhibition. OnePetro.
- Liu, S., **Al Balushi, F.** and Dahi Taleghani, A., 2023. Conductive Proppants to Improve Heat Extraction. In *Proceedings,* 48th Workshop on Geothermal Reservoir Engineering. Stanford University Stanford, California.
- Al Balushi, F. and Dahi Taleghani, A., 2020, October. A Fast Method to Estimate the Correlation Between Confining Stresses and Absolute Permeability of Propped Fractures. In *SPE Annual Technical Conference and Exhibition*. OnePetro.
- Al Balushi, F. and Dahi Taleghani, A., 2020, June. Numerical generation of stress-dependent permeability curves. In *ARMA US Rock Mechanics/Geomechanics Symposium* (pp. ARMA-2020). ARMA.

Competitive Honors/Awards —

- Society of Petrophysicists and Well Log Analysts (SPWLA) Foundation Scholarship, July 2021
- Energy and Mineral Engineering Department Student Marshal, Pennsylvania State University, May 2020
- John and Willie Leone Family Graduate Fellowship, Pennsylvania State University, August 2019
- Edward C. Hammond Jr. Memorial Scholarship, Pennsylvania State University, July 2019

Additional Information .

Languages: English, Arabic

Technical Proficiencies:

- Commercial Software: ABAQUS, COMSOL Multiphysics, Avizo, Schlumberger Petrel, CMG, Interactive Petrophysics
- Microsoft Office: Word, Excel, PowerPoint, OneNote
- Programming: MATLAB, Python, Fortran, C++
- Other: Finite Element Method, Discrete Element Method, Lattice Boltzmann Method, Mesh Construction, Geostatistics