



## Reza Falahat

Associate Professor

College: Faculty of Petroleum and Natural Gas  
Engineering

### Education

Degree	Graduated in	Major	University
Doctoral	1390	(مهندسی نفت (ژئوفیزیک مخازن	Heriot-Watt

### Employment Information

Faculty/Department	Position/Rank	Employment Type	Cooperation Type	Grade
تبریز		Tenured	Full Time	

### Work Experience

- دانشیار دانشکده مهندسی نفت و گاز دانشگاه صنعتی سهند (1395 تا بحال)
- مدیر همکاریهای علمی بین‌المللی دانشگاه صنعتی سهند (1401 تا بحال)
- مدیر سرویسهای تحت‌الارضی شرکت نارگان آمیتیس، تهران، ایران (1396 الی 1398)
- ERC Equipoise کارشناس ارشد شرکت نفتی لندن، انگلستان (1391 الی 1396)
- Imperial College استاد راهنمای دانشجویان تحصیلات تکمیلی دانشگاه لندن، انگلستان (1392 الی 1393)
- Heriot-Watt مدیر گروه ژئوفیزیک مخزن و محقق ارشد دانشگاه انگلستان (1390 الی 1392)
- عضو هیات علمی دانشگاه صنعتی سهند (1382 الی 1386)

## Subjects Taught

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- ژئوفیزیک مخازن
- فیزیک سنگ
- لرزه‌نگاری چهاربعدی
- مدلسازی استاتیک مخازن
- ذخیره‌سازی زیرزمینی گاز

## Papers in Conferences

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1. Shiri S. and Falahat R ,Rock Physics Modelling and 4D Seismic Feasibility Study in one of the Iranian Carbonate Reservoirs ,81st EAGE Conference and Exhibition ,2019.
2. Mehdi Sadeghi., Navid Amini, Reza Falahat, Hamid Sabeti, Nasser Mandani ,3D Acoustic Impedance Modeling using Turning Bands Co-Simulation and Linear Multi-Attribute Transform ,81st EAGE Conference and Exhibition ,2019.
3. Falahat R ,The reservoir scale gas distribution and its accurate seismic response ,18th conference of Geophysics ,2018.
4. Haghshenas Sh., Falahat R. and Simjoo M ,Evaluation of Different Rock Physics Models to calculate Dry Rock Modulus in one of the Iranian Southern Oil Reservoirs ,18th conference of Geophysics ,2018.
5. Falahat R., McQuaid S ,Nodal Inversion: An Optimisation Algorithm to Reduce the Run Time during the Seismic Inversion ,AAPG/SEG International Conference and Exhibition ,2017.
6. Falahat R., MacBeth C., and Shams A ,A practical 4D seismic attribute to estimate saturation and pressure changes arising from reservoir production and injection ,Second National Conference on Petroleum Geomechanics ,2017.
7. Falahat R ,Seismic Interpretation: How Quantitative We Can Be? ,17 Conference of Geophysics ,2016.
8. Falahat R., Shams A. and MacBeth C ,An interpretation of the 4D seismic response to gas exsolution and dissolution ,, 75th EAGE Conference and Exhibition ,2013.
9. MacBeth C., Huang Y. and Falahat R ,4D Seismic Interpretation with Frequently Acquired, Multiple Time-lapsed Surveys ,Second EAGE Workshop on Permanent Reservoir Monitoring ,2013.
10. Falahat R., Shams A. and MacBeth C ,Adaptive engineering-based scaling for enhanced dynamic interpretation of 4D seismic ,73rd EAGE Conference ,2011.
11. Falahat R., Shams A. and MacBeth C ,Towards quantitative evaluation of gas injection using time-lapse seismic ,72nd EAGE Conference ,2010.

## Papers in Journals

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1. Behzad Nasrnia, Reza Falahat,Introducing a Simplified Rock Physics Model to Estimate Shear Velocity to Consider the Geometry of Pore Spaces and Minerals,Journal of Acta Geophysica,2024.
2. Saghi Jalini, Reza Falahat,Feasibility Study of Monitoring of Water Injection into an Iranian Oil Fields Using 4D Seismic Data,Journal of Petroleum Research,2024.
3. Behzad Nasrnia, Reza Falahat, Ali Kadkhodaie,Log-based estimation of magnitude, azimuth and causes of anisotropy using a committee machine-based model,Journal of Earth Science Informatics,2024.
4. Behzad Nasrnia, Reza Falahat, Ali Kadkhodaie, Ali Gholami Vijouyeh,A committee machine-based estimation of shear velocity log by combining intelligent systems and rock-physics model using metaheuristic algorithms,Journal of Engineering Application of Artificial Intelligence,2023.
5. Esmael Makarian, Maryam Mirhashemi, Ayub Elyasi, Danial Mansourian, Reza Falahat, Ahmed E. Radwan, Ahmed El ,& Aal, Cunhui Fan, Hu Li,, A Novel Directional-Oriented Method for Predicting Shear

Wave Velocity Through Empirical Rock Physics Relationship Using Geostatistics Analysis, *Journal of Scientific Reports*, 2023.

6. Aboulfazl Pourhassan Heris, Reza Falahat, Pore pressure estimation of one of the gas fields in southwestern Iran using well log and seismic data, *Journal of Petroleum Research*, 2023.
7. Saghi Jalini, Reza Falahat, Analyzing of Rock Physics Models for 3D and 4D Seismic Feasibility Study in the Carbonate Reservoirs and Developing an Hybrid Algorithm, *research square*, 2023.
8. Mohammad Hossein Ghojeh Beyglou<sup>1</sup>, Reza Falahat and Enayatollah Ranjineh Khojasteh, A Geostatistical analysis approach for facies and porosity modeling of a heterogeneous sandstone reservoir to compare four practical stochastic methods, *Journal of Applied and Regional Geology (ZDGG)*, 2022.
9. Hassan Bagheri and Reza Falahat, Fracture permeability estimation utilizing conventional well logs and flow zone indicator, *Journal of Petroleum Research*, 2021.
10. Mehdi Sadeghi, Navid Amini, Reza Falahat, Hamid Sabeti and Nasser Madani, Global stochastic seismic inversion using turning bands simulation and co-simulation, *Journal of Acta Geophysica*, 2021.
11. Ahsan Leisi and Reza Falahat, Investigation of Some Porosity Estimation Methods Using Seismic Data in One of the South Iranian oil fields, *Journal of Petroleum Research*, 2021.
12. Medi sadeghi, Navid Amini, Reza Falahat, Naser Madani and Hamid Sabeti, 3D Acoustic impedance modeling using turning bands simulation method in an oil field in SW of Iran, *Journal of Geophysics*, 2021.
13. Mehdi Sadeghi, Nasser Madani, Reza Falahat, Hamid Sabeti and, Navid Amini, Hierarchical reservoir lithofacies and acoustic impedance simulation: Application to an oil field in SW of Iran, *Journal of Petroleum Science and Engineering*, 2021.
14. Dalvand M. and Falahat R, A New Rock Physics Model to Estimate Shear Velocity Log, *Journal of Petroleum Science and Engineering*, 2020.
15. Falahat, R., and Farokhnia, F, Rock physics modelling of the carbonate reservoirs: A log-based algorithm to determine the pore aspect ratio, *Journal of Applied Geophysics*, 2020.
16. Hamed Amraei and Reza Falahat, Improved ST-FZI Method for Permeability Estimation to Include the Impact of Porosity Type and Lithology, *Journal of Petroleum Exploration and Production Technology*, 2020.
17. Jalini S. and Falahat R, A Novel Algorithm to Estimate Mineral Elastic Properties and Pore Aspect Ratio in the Carbonate Reservoirs, *Journal of Applied Geophysics*, 2020.
18. Taghizadeh M., Falahat R. and Tabatabaei, & Nejad A, Geomechanical modeling for CO<sub>2</sub> geologic sequestration in Asmari reservoir– South of Iran, *Arabian Journal of Geosciences*, 2019.
19. Cheraghshahar E., Falahat R. and Tabatabaei, & Nejad A, Geomechanical impacts of Reservoir Pressure and Temperature changes on the Wellbore Stability, *Journal of Petroleum Research*, 2019.
20. Shiri S. and Falahat R., Rock Physics Modelling and 4D Seismic Feasibility Study in one of the Iranian Carbonate Reservoirs, *Journal of Applied Geophysics*, 2019.
21. Falahat R., MacBeth C., and Shams A, Seismic response to injected gas into reservoir for storage and enhanced oil recovery purposes, *Journal of Geophysics, Iran*, 2018.
22. Falahat R., MacBeth C., and Shams A, A practical 4D seismic attribute to estimate saturation and pressure changes arising from reservoir production and injection, *Journal of Petroleum Geomechanics*, 2018.
23. Falahat R., Obidegwu D., Shams A. and MacBeth C, The interpretation of amplitude changes in 4D seismic data arising from gas exsolution and dissolution, *Petroleum Geoscience*, 2014.
24. Falahat R., Shams A. and MacBeth C, Adaptive scaling for enhanced dynamic interpretation of 4D seismic data, *Geophysical prospecting*, 2013.
25. Falahat R., Shams A. and MacBeth C, Towards quantitative evaluation of gas injection using time–lapse seismic, *Geophysical prospecting*, 2011.
26. Mohammadzade M. J. and Falahat R, Application of ETM satellite images in enhancement of alteration halos and lithological units discrimination in Mianeh-East Azerbaijan, *Journal of*

Crystallography and Mineralogy,2007.

27. Mohammadzade M. J. and Falahat R,Analysis and integration of airborne geophysical data and their correlation with ETM image for detecting alteration zones in Mianeh (East Azerbaijan),,Journal of Geosciences,2005.