

Sai Wang

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Petroleum Recovery Research Center (PRRC)
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Education

Ph.D., Petroleum Engineering, University of North Dakota, 2019.

M.S., Petroleum Engineering, New Mexico Institute of Mining and Technology, 2015.

B.S., Applied Chemistry (analytical), Hainan University, Haikou, China, 2011.

Professional Experience

2023 – Present: Research Engineer II, PRRC - New Mexico Tech

Principle Investigator on DOE funded projects. Conduct research on the CCUS and REE related projects and perform responsibilities on regulation support and project management.

2021 – 2023: Research Associate III, PRRC - New Mexico Tech

Lead and supervise on several DOE funded projects. Perform research on the CCUS and REE related projects and provide regulation and management support to the team.

2020 – 2021: Postdoc Research Engineer, PRRC - New Mexico Tech

Research focusing on the CO₂ EOR and storage and geochemistry of the conventional/unconventional reservoir, Class VI well permit application, well design, drilling and operation of the CO₂ monitoring/ injection wells, P&A.

2019 – 2020: Petroleum Engineer, Oilfield Operations. EERC, UND

Designed and executed oil and gas field activities such as preparing Class VI well-drilling permits; designing well completions; determining appropriate logging and coring activities; ensuring the design meets project objectives, all regulations, and safety requirements; and analyzing hydraulic fracturing practices to optimize oil recovery.

2016 – 2019: Lab Lead and Course Instructor, Department of Petroleum Engineering, UND.

Research projects included the following:

- Evaluation of CO₂ flooding in unconventional reservoirs; partial blockage detection of the gas pipeline;
- Mathematic model application to pipeline blockage detection.

2013 – 2015: Research Assistant, PRRC, NMT.

- Development of a Novel CO₂ Chemical Sensor for Downhole CO₂ Monitoring in Carbon Sequestration, U.S. Department of Energy (DOE) Contract No. DE-FE0009878.

- Silica Nanoparticle-Stabilized CO₂ Foams for Enhanced Oil Recovery, DOE Contract No. DE- FE0005979.

Publications and Invited Presentations

Jia, B., Charles, B., Wang, S., Liu, D., Wang, H., Advanced materials and sensors for energy: Petroleum and Gas Publisher: Wiley.

Wang, S., Liu, K., Ling, K., and Wang, H., 2018, Properties evaluation of the Middle Bakken Formation due to the CO₂ injection: the 52nd U.S. Rock Mechanics/Geomechanics Symposium, Seattle, Washington, June 17–20, 2018, ARMA-2018-641.

Wang, S., 2019, Investigation of Properties Alteration During Super-Critical CO₂ Injection in Shale: Journal of Applied Science, 2019, 9(8), 1686.

Wang, S., Ling, K., Liu, N., and Wang, H., 2017, Development and evaluation of an iridium oxide-based chemical sensor for downhole CO₂ Monitoring—Part I: Presented at the Carbon Management Technology Conference, Houston, Texas, July 17–20, 2017.

Wang, S., San, J., Yu, J., Lee, R., and Liu, N., 2016, A downhole CO₂ sensor to monitor CO₂ movement in situ for geologic carbon storage: International Journal of Greenhouse Gas Control, v. 55, December, p. 202–208.

San, J., Wang, S., Yu, J., Liu, N., and Lee, R., 2017, Nanoparticle stabilized CO₂ foam used in EOR— effect of different ions and temperatures: SPE Journal, v. 22, no. 05, October, SPE-179628-PA.

Ling, K., He, J., Pei, P., Wang, S., 2016, Comparisons of Biot's coefficients of Bakken core samples measured by three methods: Presented at the 50th U.S. Rock Mechanics/Geomechanics Symposium, Houston, Texas, June 26–29, 2016, ARMA-2016- 030.

San, J., Wang, S., Yu, J., Lee, R., and Ning Liu, 2016, Nanoparticle stabilized CO₂ foam—effect of different ions: Presented at the 20th Society of Petroleum Engineers (SPE) Improved Oil Recovery Conference, Tulsa, Oklahoma, April 9–13, 2016, SPE-179628-MS.

Yu, J., Wang, S., Liu, N., and Lee, R., 2014, Study of particle structure and hydrophobicity effects on the flow behavior of nanoparticle-stabilized CO₂ foam in porous media: Society of Petroleum Engineers (SPE) Improved Oil Recovery Symposium, Tulsa, Oklahoma, April 12– 16, 2014, SPE-169047-MS.

Synergistic Activities:

- **Principle Investigator**, Regional Resource Assessment for CO₂ Storage in New Mexico and Surrounding Areas: Identification, Characterization, and Evaluation of In-Situ Mineralization Site/Complex (DE-FE00032257)
- **Co-Principle Investigator**, Uinta Basin CarbonSAFE II: Storage Complex Feasibility (DE-FE00032266).
- **Principle Investigator**, Site Characterization for CO₂ storage to Support Escalante Hydrogen Power Plant Project, US Department of Energy, Carbon Utilization &Storage Partnership.

- **Co-Principle Investigator**, Advancing Characterization of Faults through Deployment of Novel Geophysical, Geochemical and Geomechanical Technologies at the San Juan Basin CarbonSAFE Site, US Department of Energy (DE-FE0032064).
- **Key Personnel**, Carbon Ore, Rare Earth, and Critical Minerals (CORE-CM) Assessment of San Juan River-Raton Coal Basin, New Mexico. US Department of Energy (DE-FOA-0002364).
- **Task Lead**, San Juan Basin CarbonSAFE Phase III: Ensuring Safe Subsurface Storage of CO₂ in Saline Reservoirs, US Department of Energy (DE-FE-0031890).
- **Program membership Chairperson** for Society of Petroleum Engineers Roswell Section since 2021.
- Outstanding reviewer for scientific journals such as International Journal of Greenhouse Gas Control, Fuel, Energies, Journal of Petroleum and Gas Engineering and others on articles related to CCUS.