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RESEARCH INTERESTS

• Enhanced Oil Recovery • Fiber Optic Sensing • Machine Learning and Data Mining

EDUCATION

Ph.D., Petroleum Engineering, **University of Calgary**, Canada 2012
B.Tech., Electrical Engineering (Power), **Indian Institute of Technology Delhi**, India 2006
Exchange Program, Electrical Engineering, **University of British Columbia**, Canada 2004

WORK / RESEARCH EXPERIENCE

• Assistant Professor, **Louisiana State University**, Baton Rouge, LA (USA) 2019-Present
• Research Engineer, **Chevron**, Bakersfield, CA (USA) 2014-2018
• Reservoir Engineer, **Chevron**, Houston, TX (USA) 2013-2014
• Simulation Engineer, **Chevron**, Calgary, AB (Canada) 2012-2013
• Visiting Scholar, **Stanford University**, CA (USA) 2010
• Research Intern, **Shell**, Calgary, AB (Canada) 2009
• Field Engineer, **Schlumberger**, Whitecourt, AB (Canada) 2006-2007
• Research Intern, **Technische Universität Dresden**, Dresden (Germany) 2005

TEACHING EXPERIENCE

Courses taught at LSU

▪ **Advanced Reservoir Engineering**, PETE-7041 (Graduate course) Spring 2021
▪ **Petroleum Economics**, PETE-3025 (Undergraduate course) Spring 2020, 2021
▪ **Well Logging**, PETE-3036 (Undergraduate course) Fall 2019
▪ **Formation Evaluation**, PETE-4066 (Graduate and Undergraduate Course) Spring 2019

Courses taught at Chevron in Bakersfield (USA) and Rumbai (Indonesia)

▪ **Basic Thermal Engineering** 2015-2018
▪ **Applied Heat Management** 2015-2018
▪ **Steamflood Forecasting** 2015-2018
▪ **Petrophysics for Heat Management** 2015-2018

AWARDS & RECOGNITIONS

➤ **Certificate of Digital Innovation**, Chevron 2018
➤ Selected for Chevron's **Data Science Development Program** for Data Analytics initiatives 2018
➤ Selected for Chevron's **Mentoring Excellence in Technology** for technical achievements 2017
➤ **SPE Outstanding Service Award**, given to 0.1% of over 110,000 members worldwide 2016
➤ Consistently ranked as "**Top Performer**" at Chevron (99th percentile) 2015-2018
➤ Lean Sigma Green Belt Certification - lead 15 Lean Sigma projects saving over \$5 MM 2016
➤ **SPE Technical Editor Recognition** for excellence as a Technical Editor of SPE's journals 2015
➤ Stanford University Graduate Travel Award, Stanford University 2011
➤ Penn West Energy Graduate Scholarship, University of Calgary 2011
➤ Dr. Roger Butler Memorial Graduate Scholarship, University of Calgary 2010-2011
➤ "**Best Technical Presentation**" at the Improved Oil Recovery Conference, Tulsa, USA 2010
➤ Society of Petroleum Engineers (SPE) of Canada Graduate Scholarship 2010-2011
➤ "**Best Graduate Paper**" at the Canadian International Petroleum Conference, Calgary 2009
➤ Zandmer and Ursula Graduate Scholarship, University of Calgary 2009-2010
➤ Elnova Award for the "**Best Undergraduate Project**" in Power Engineering at IIT-Delhi 2006
➤ **Director's Merit Certificate** for being amongst the top 7% students in IIT-Delhi 2004, 2005
➤ Jawaharlal Nehru National Merit Scholarship by the Steel Authority of India Ltd. 2002-2006

STUDENT MENTORING

- **Faculty Advisor:** LSU SPE Student Chapter 2019-Present
- **Mentor:** Halliburton Scholar Program at LSU College of Engineering 2019-2020
- **Faculty Mentor:** NSF Research Experience for Undergraduates 2019-2020
- **Research Mentor:** LSU President’s Future Leaders in Research program 2019

PROFESSIONAL ACTIVITIES

- **Technical Committee Member,** SPE Fiber Optics Workshop 2020-2021
- **Technical Review Board,** Sensors Journal 2020-Present
- **National Science Foundation** Review Panelist 2019
- **Executive,** SPE Distinguished Lecture Committee 2016-2018
- **Technical Committee Member,** 2018 SPE Western Regional Conference 2017-2018
- **Corporate Secretary,** Chevron Asian Employee Network 2017-2018
- **PetroTech Lead and Board Executive,** Chevron Women’s Network 2014–2016
- **Editorial Activity:** Sensors, SPE Journal, SPE Reservoir Evaluation & Engineering Journal, SPE Production & Operations Journal, SPE Economics and Management, Materials Journal 2013-Present
- **Editorial Activity:** The Natural Sciences and Engineering Research Council of Canada 2012-Present
- **Editorial Activity:** Canadian Journal of Chemical Engineering 2010–2012
- **Management Summer School:** Handelshochschule Leipzig (HHL)– Germany Summer 2005

CURRENTLY FUNDED PROJECTS

Project Title	Grant Title, Sponsor	Period	Role
Application of Satellite-borne Quantum Gravimetry Data for Geophysical Exploration	Research Enhancement Award, NASA & BoR	2020-2021	PI
Nanomaterial Enhanced Fiber-Optic Distributed Pressure and CO ₂ Sensor for Nuclear & Petroleum Engineering Applications (Collaborators: Oakridge National Lab)	LINK EPSCoR, National Science Foundation	2020-2021	PI
Quantum Enhanced Fiber Optic Sensing for Oil and Gas Applications (Collaborators: Oakridge National Lab, University of Oklahoma)	U.S. Department of Energy (DOE)	2020-2022	Co-PI
Safe, sustainable and resilient development of offshore reservoirs through innovative technology (Key Collaborators: Tulane University, Israel Institute of Technology, Argonne National Laboratory)	US-Israel Center of Excellence, BIRD, DOE	2020-2025	Co-PI
In-situ combustion in Bellevue field in Louisiana – History, current state and future strategies (Collaborators: Bayou State Oil Corp.)	Faculty Travel Grant, LSU	2020	PI
Creation of Analytics Center of Excellence for Data-Driven Research in Energy, Environment & Earth Science	Faculty Research Grant, LSU	2019-2022	PI
Experiments on Multiphase Flow of Live Muds in a Full-Scale Wellbore with Distributed Sensing for Kick and Gas-in-riser (Collaborators: Texas A&M University, Schlumberger)	Gulf Research Project, National Academy of Science	2018-2020	Co-PI
Online Portal to View Domestic Oil and Gas Production Data and Maps, to Aid Student Research and Learning (Collaborators: Department of Natural Resources, Louisiana)	Digital Scholarship Grant, LSU	2019	PI
Distributed Fiber Optic Sensing Technology in Offshore Environments – Current State and Future Directions (Collaborators: Vaquero Energy)	Emerging Faculty Travel Grant, Board of Regents	2019	PI
Application of Fiber-Optic Sensors to Improve Safety in Oil & Gas Industry	Halliburton Scholars Program, Halliburton	2020	PI

PEER-REVIEWED JOURNAL PUBLICATIONS

(* indicates corresponding author)

1. Rezk, M.Y., **Sharma, J.***, Gartia, M.R. 2020. "Nanomaterial-Based CO₂ Sensors". *Nanomaterials* [Accepted].
2. **Sharma, J.***, Dean, J., 2021. "In-situ combustion in Bellevue field in Louisiana – History, current state and future strategies". *Fuel* 284: 118992.
3. **Sharma, J.***, Cuny, T., Ogunsanwo, T., Santos, O. 2020. "Low-Frequency Distributed Acoustic Sensing for Early Gas Detection in a Wellbore." *IEEE Sensors* [Accepted – In Press].
4. **Sharma, J.***, Gede, A., Mims, D, Barnes, D. 2021, "Temperature Logging Guidelines and Factors that Affect Measurement Accuracy in Steamfloods." *Journal of Petroleum Science and Engineering* 196: 107727.
5. Wang, B., **Sharma, J.***, Chen, J., Persaud, P. 2020. "Ensemble Machine Learning Assisted Reservoir Characterization using Field Production Data - an Offshore Field Case Study". *Society of Petroleum Engineers Journal* [Under Review]
6. **Sharma, J.**, Santos, O., Feo, G., Ogunsanwo, O., Williams, W. 2020. "Well-Scale Multiphase Flow Characterization & Validation Using Distributed Fiber Optic Sensors for Gas Kick Monitoring." *Optics Express* [Under Review].
7. Feo, G., **Sharma, J.***, Cunningham, S. 2020. "Integrating Fiber Optic Data in Numerical Reservoir Simulation Using Intelligent Optimization Workflow". *Sensors* 20(11): 3075.
8. Feo, G., **Sharma, J.***, Kortukov, D., Ogunsanwo, T. Williams, W. 2020. "Distributed Fiber Optic Sensing for Real-Time Monitoring of Gas in Riser during Offshore Drilling". *Sensors* 20(1): 267.
9. **Sharma, J.***, Inwood, S. B., and Kovscek, A. R. 2012. "Experiments and Analysis of Multi-scale Viscous Fingering during Imbibition." *Society of Petroleum Engineers Journal* 17(4):1142-1159.
10. **Sharma, J.***, Moore, G. R., and Mehta, S.A.2012. "Effect of Methane Co-injection in SAGD–Analytical and Simulation Study." *Society of Petroleum Engineers Journal* 17(3):687.
11. **Sharma, J.***, and Gates, I.D. 2011. "Interfacial Stability and Displacement Efficiency in Steam Solvent Processes." *Society of Petroleum Engineers Journal* 16(1):55-64.
12. **Sharma, J.***, and Gates, I.D. 2011. "Convection at the Edge of SAGD Steam Chamber." *Society of Petroleum Engineers Journal* 16(3): 503-512.
13. **Sharma, J.***, and Gates, I.D. 2010. "Multiphase Flow at the Edge of Steam Chamber." *Canadian Journal of Chemical Engineering* 88(3):312-332.

CONFERENCE PRESENTATIONS

1. Williams, W. C., Taylor, C. E., Almeida, M. A., Sharma, J., Waltrich, P. J., Chen, Y., Feo, G., Kortukov, D. 2020. "Distributed Sensing and Real Time Visualization of Gas Kick Dynamics in a Full-Scale Wellbore", SPE Annual Technical Conference and Exhibition, 26-29 October, 2020. <https://doi.org/10.2118/201539-MS>.
2. **Sharma, J.** 2020. "Tutorial - Distributed Fiber Optic Sensors." **2020 International Conference on Optical Fiber Sensors**, Alexandria, Virginia, USA, June.
3. Feo, G., **Sharma, J.**, Santos, O., Toba, O., Williams, W. 2020. "Multiphase Flow Characterization and Modeling Using Distributed Fiber Optic Sensors to Prevent Well Blowout." in **Optical Sensors and Sensing Congress**, USA Technical Digest (Optical Society of America, 2020), paper EM3C.5.
4. Zhou, X., Tyagi, M., **Sharma, J.** 2020. "Enhanced Automatic Segmentation of Salt Bodies from Seismic Images Using Wavelet Convolutional Neural Networks." **EAGE Conference**, Amsterdam, December.
5. Feo, G., **Sharma, J.**, Cunningham, S. 2020, "Machine Learning Assisted History Matching to Integrate Fiber Optic Data with Reservoir Simulation." **SPE Canadian Heavy Oil and Unconventional Resources Conference**, Calgary, Canada, March. SPE-199919-MS.
6. Feo, G., **Sharma, J.**, Williams, W., Kortukov, D., Ogunsanwo, T. 2019, "Application of Distributed Fiber Optics Sensing Technology for Real-time Gas Kick Detection." **SPE Annual Technical Conference and Exhibition**, Calgary, Canada, September. SPE-196113-MS
7. **Sharma, J.**, Feo, G. 2019, "Application of Distributed Fiber Optics Sensing in Offshore Environments." **Deepwater Technical Symposium**, New Orleans, USA, August.
8. **Sharma, J.**, Feo, G. 2019, "Distributed Fiber Optics Sensing Application for Gas-in-riser Detection and Mitigation for Offshore Well Control." **SPE Fiber Optics Workshop**, Denver, USA, August.
9. Gede, A., **Sharma, J.**, Mims, D, Barnes, D. 2018, "Temperature Logging Guidelines and Factors that Affect Measurement Accuracy." **SPE Annual Technical Conference and Exhibition, Dallas, USA**, September.
10. **Sharma, J.**, Nzegeing S., 2018 "Application of Data Analytics for Selecting Chemical Stimulation Candidates in Venezuela." **Chevron Data Analytics Forum, San Ramon, USA**, October.
11. **Sharma, J.**, Gede, A., Barnes, D. 2017 "Advanced Topics on Temperature Log Interpretation." **Chevron Reservoir Management Forum, Bakersfield, USA**, April.
12. **Sharma, J.**, Popa, A., Cassidy, S. 2017 "The Use of Voronoi Mapping for Production Growth in a Heavy Oil Field." **SPE Western Regional Conference, Bakersfield, USA**, April.

13. Sharma, J., Munoz, J., Seiler, W., 2016 “*San Ardo Strategy for Optimized Injection and Drainage.*” **Chevron San Joaquin Valley Reservoir Management Forum, Bakersfield, USA**, October.
14. Sharma, J., Popa, A., 2015 “*Application of Voronoi for Production Increase Opportunities.*” **Chevron San Joaquin Valley Reservoir Management Forum, Bakersfield, USA**, September.
15. Bourda, N., Sharma, J., Seiler, W., Angelo, C., 2015 “*San Ardo Field Geology: Barriers vs Baffles.*” **Chevron San Joaquin Valley Reservoir Management Forum, Bakersfield, USA**, September.
16. Bourda, N., Sharma, J., Seiler, W., Angelo, C., 2015 “*San Ardo Optimization Project.*” **Chevron San Joaquin Valley Reservoir Management Forum, Bakersfield, USA**, September.
17. Sharma, J., Tardio, A., Nguyen, T. 2015 “*Injection Strategy During Steam Constraints.*” **Chevron Lean Sigma Poster Session, Lost Hills, USA**, March.
18. Sharma, J., Benson, I., Lolley, C., 2014 “*Improved Analytical Modeling of Steam-Aided Steam Assisted Gravity Drainage Process.*” **Chevron Heavy Oil Forum, Bakersfield, USA**, August.
19. Sharma, J., Izgec, O., Lolley, C., 2014 “*Inferring Reservoir Continuity, Reservoir Pressure and Drainage Volume Using an In-house Analytical Method.*” **Chevron Heavy Oil Forum, Bakersfield, USA**, August.
20. Sharma, J., Nguyen, T., and Munoz, J.D., 2014 “*West Central California Drainage Review Process.*” **Chevron San Joaquin Valley Reservoir Management Forum, Bakersfield, USA**, September.
21. Kumar, R., Sharma, J., Rubin, E., Lolley, C., 2014 “*Dynamic Modeling of N.Boscan Leads to New Insights into Reservoir Behavior.*” **Chevron Heavy Oil Forum, Bakersfield, USA**, August.
22. Sharma, J., Moore, G. R., and Mehta, S.A. 2011. “*Effect of Methane Co-injection in SAGD–Analytical and Simulation Study.*” **Canadian Unconventional Resource Conference, Calgary, Canada**, November.
23. Sharma, J., Inwood, S.B., and Kovscek, A. R. 2011. “*Experiments and Analysis of Multiscale Viscous Fingering during Imbibition.*” **SPE Annual Technical Conference and Exhibition, Denver, USA** October.
24. Sharma, J., and Gates, I.D. 2010. “*Interfacial Stability and Displacement Efficiency in Steam Solvent Processes.*” **Improved Oil Recovery Symposium, Tulsa, USA**, April.
25. Sharma, J., and Gates, I.D. 2010. “*Steam Solvent Coupling at the Chamber Edge in an In-Situ Bitumen Recovery Process.*” **SPE Oil & Gas India Conference, Mumbai, India**, January.
26. Sharma, J., and Gates, I.D. 2009. “*Convection at the Edge of SAGD Steam Chamber.*” **8th World Congress of Chemical Engineering, Montreal, Canada**, August.
27. Sharma, J., and Gates, I.D. 2009. “*Multiphase Analytical Modelling of Steam Assisted Gravity Drainage.*” **Canadian International Petroleum Conference, Calgary, Canada**, June.

INVITED TALKS

1. Sharma, J. 2020. “*Application of Distributed Fiber Optic Sensing in Oil and Gas Industry.*” **University of Wyoming**, 15 October.
2. Sharma, J. 2019. “*Distributed Fiber Optic Sensing Technology in Offshore Environments – Current State and Future Directions.*” **Stanford University - SPE Golden Gate Section**, Stanford (CA), 14 November.
3. Sharma, J. 2019. “*Application of Distributed Fiber Optic Sensing for Gas Kick Detection.*” **Shell Digitalization & Innovation Team**, New Orleans (LA), 26 September.
4. Sharma, J. 2014. “*Steamflood for Heavy Oil Recovery in San Joaquin Valley.*” **California State University SPE Student Section**, Bakersfield (CA), 27 November.
5. Sharma, J. 2012. “*Improved Understanding of Thermal Recovery Techniques.*” **BIT's 3rd Annual World Congress of Well Stimulation and EOR, Xi'an, China**, 25-27 April.
6. Sharma, J. 2011. “*Modelling of Steam-Solvent Hybrid Processes.*” **Saskatchewan Research Council**, Regina, Canada, 6 December.
7. Sharma, J., and Gates, I.D. 2011. “*Interfacial Stability in Steam Solvent Recovery Processes.*” **16th European Symposium on Improved Oil Recovery**, Cambridge, UK, 12-14 April.
8. Sharma, J. 2011. “*Application of SAGD for Heavy Oil Recovery.*” **2nd Annual Global Heavy Oil Praxis Interactive Technology Workshop**, Istanbul, Turkey, 19-22 September.