

• Patrick F Taylor Hall, Louisiana State University (LSU), Baton Rouge • JSharma@lsu.edu • 225-578-6042

RESEARCH INTERESTS

• Enhanced Oil Recovery • Fiber Optic Sensing • Machine Learning • Formation Evaluation • Sensors

EDUCATION

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

WORK / RESEARCH EXPERIENCE

• Adjunct Professor, Department of Electrical Eng. **LSU**, Baton Rouge, LA (USA) 2022-Present
• Assistant Professor, Department of Petroleum Eng., **LSU**, 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) Summer 2010
• Research Intern, **Shell**, Calgary, AB (Canada) Summer 2009
• Field Engineer, **Schlumberger**, Whitecourt, AB (Canada) 2006-2007
• Research Intern, **Technische Universität Dresden**, Dresden (Germany) Summer 2005

TEACHING EXPERIENCE

Courses taught at LSU

▪ **Graduate Reservoir Engineering**, PETE-7041 (Graduate Core course) 2021, 2022
▪ **Senior Design**, PETE-4998/4999 (Undergraduate Core course) 2020, 2023
▪ **Petroleum Economics**, PETE-3025 (Undergraduate Core course) 2020-2021
▪ **Well Logging**, PETE-3036 (Undergraduate Core course) 2019, 2023
▪ **Formation Evaluation**, PETE-4088 (Graduate and Undergraduate Elective Course) 2019, 2021

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

• Selected for **Speaking of Science** program by LA EPSCoR for STEM outreach 2024
• **LSU Alumni Association Rising Faculty Research Award** 2023
• **NASA Research Enhancement Award**, NASA, LaSPACE 2020
• **Emerging Faculty Travel Award**, NSF EPSCoR 2019
• **2019 Digital Scholarship** for novel data science project awarded by LSU Library 2019
• **Certificate of Digital Innovation**, Chevron 2018
• Consistently ranked as “**1 – Top Performer**” at Chevron (99th percentile) 2015-2018
• Selected for Chevron’s **Data Science Development Program** for Data Analytics initiatives 2018
• **Mentoring Excellence in Technology** award at Chevron for technical achievements 2017
• **SPE Outstanding Service Award**, given to 0.1% of over 110,000 members worldwide 2016
• 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

LEADERSHIP & PROFESSIONAL SERVICE

- **Faculty Advisor:** Society of Petroleum Eng. (SPE) Student Chapter: *largest student organization in PETE dept.*
Key Achievements during Dr. Sharma’s tenure as the Faculty Advisor for LSU SPE 2019-Present
 - Won the **2022 SPE Student Chapter Excellence Award**
 - Hosted and won **2020 SPE Eastern Regional Paper Contest**
 - Won the **2019 SPE Student Chapter Excellence Award**
 - Won the **2019 International Petrobowl Championship**
- **Associate Editor**, Society of Petroleum Engineers (SPE) Journal 2022-Present
- **Reviewer: DOE, NSF** (Panelist in Alexandria), **Nuclear Regulatory Council, BSEE** 2019-Present
- **Technical Committee Member**, SPE Fiber Optics Workshop 2020-Present
- **Committee Member:** College Policy Committee 2022-Present
- **Search Committee Member:** Energy Institute Director, Faculty Hire 2022, 2023
- **LSU PERTT Lab Faculty Committee Member** 2023-Present
- **Technical Review Board**, Sensors Journal 2020-Present
- **Executive**, SPE Distinguished Lecture Committee 2016-2018
- **Technical Committee Member**, 2018 SPE Western Regional Conference 2017-2018
- **Editorial Activity:** IEEE Sensors, SPE Journal, Materials Journal, Nature, Photonics Lett. 2013-Present
- **Management Summer School:** Handelshochschule Leipzig (HHL)– Germany Summer 2005

STUDENT MENTORING

- **Research Supervised / Graduated: Ph.D.:** Two, **M.S.:** Four; **Postdocs:** Four, **Undergrad Research:** 10
- **Faculty Mentor for Student Research Mentorship Program** at Kenilworth Middle School 2021
- **Mentor:** Halliburton Scholar Program at LSU College of Engineering 2019-2021
- **Faculty Mentor:** NSF Research Experience for Undergraduates (at CCT) 2019-2020
- **Faculty Mentor:** LSU President’s Future Leaders in Research program 2019
- **Mentoring Circles Program:** Founder of the program launched through LSU CoE 2019-2020
- **Faculty Participant in ENGage LSU** program, an annual outreach day to teach middle school kids 2019

FUNDED RESEARCH PROJECTS

Project Title	Grant Sponsor	Duration	PI	co-PI	Collaborators	Total, \$	J.Sharma’s Credit, \$
Machine Learning-Assisted Gas Leak Monitoring	NSF Center for Innovation in Structural Integrity Association (CISIA)	1/2024-1/2025	J. Sharma	-	- Baker Hughes - Shell	37,500	37,500
Development and Field Demonstration of Distributed Fiber-Optic CO ₂ Sensor for Long-Term Monitoring of Storage Sites	LSU Institute of Energy Innovation	10/2023-10/2025	J. Sharma	M. Gartia	- Shell - Air Products - National Energy Technology Lab	499,974	349,982
Developing and Field-Testing a New Framework for Identifying and Integrating Leading Indicators of Offshore Loss of Well Control Events	Ocean Energy Safety Institute	10/2023-9/2024	Y. Chen	J. Sharma	- Blade Energy - Intellices	499,956	199,982
Nanomaterial-enhanced Multifunctional Automated Radiation Detector	Nuclear Regulatory Commission	1/2023-1/2026	J. Sharma	M. Gartia J. Wang	- Southern University	499,865	224,939
Machine Learning-Assisted Structural Integrity and Leak Monitoring	NSF CISIA	1/2023-1/2024	J. Sharma	-	- Baker Hughes - Shell	50,000	50,000
Tentacle-like Robotic System for Structural Integrity Assessment	NSF CISIA	1/2023-1/2024	H. Gilbert	J. Sharma		50,000	16,667

Engineering Research Center for Degradation Science and Structural Integrity	Faculty Research Grant, LSU	1/2023-1/2025	D. Nikitopoulos	J. Sharma J. Pojman M. Khonsari		250,000	25,000
Research Project into DAS Machine Learning, Data Optimization, Transmission	SwellFix LLC	1/2022-12/2024	J. Sharma	-		102,454	102,454
Wellbore Gas Migration Studies in Drilling Fluids (Phase-II)	Exxon and Chevron	4/2022-12/2022	M. Almeida	J. Sharma O. Santos Y. Chen	- Exxon - Chevron	276,441	82,932
Offshore Energy Safety Center	Faculty Research Grant, LSU	2/2022-5/2023	Y. Chen	J. Sharma L. Ikuma C. Wang		39,000	15,600
Fully Distributed Pressure Sensing using Side-Hole Fiber	LIFT Grant, LSU	9/2021-9/2022	J. Sharma	-	University of Pittsburgh	74,988	74,988
Wellbore Gas Migration Studies in Drilling Fluids (Phase-I)	Exxon and Chevron	9/2021-1/2022	M. Almeida	J. Sharma O. Santos Y. Chen	- Exxon - Chevron	183,121	54,936
Application of Distributed Fiber Optic Sensing for Sand Detection in Offshore Production	LA Board of Regents, Shell	6/2021-6/2024	J. Sharma	M. Tyagi	- Shell - Derrick Equipment	253,595	177,517
Distributed Fiber Optic Sensors for Helium Leak Detection in High-Temperature/High-Pressure Fusion Reactor Application	LA Board of Regents	3/2021-12/2021	J. Sharma	-	Oak Ridge National Lab	6,000	6,000
Super-Resolution of Gravity Data for Geophysical Exploration	NASA LaSpace	9/2020-8/2022	J. Sharma	Xin Li	NASA Goddard Space Center	64,144	44,900
Safe, Sustainable and Resilient Development of Offshore Reservoirs and Natural Gas Upgrading through Innovative Technology and Science	DOE and BIRD Foundation	9/2020-9/2025	D. Shantz	J. Sharma K. Thompson I. Gupta F. Olorode K. Dooley	- Tulane Univ. - Argonne Nat. Lab - Hebrew University of Jerusalem - University of Haifa - Delek Drilling	916,900	151,289
Quantum-Enhanced Fiber Optic Sensing for Oil & Gas Applications	DOE	9/2020-9/2023	A. Marino	J. Sharma	Oak Ridge National Lab	750,000	324,703
Drainage Area Investigation for Horizontal Wells	Halliburton Scholars Program, LSU	9/2020-7/2021	J. Sharma			3,750	3,750
Nanomaterial Enhanced Fiber-Optic Distributed Pressure and CO ₂ Sensor for Nuclear and Petroleum Engineering	LA Board of Regents	4/2020-1/2021	J. Sharma	-	Oak Ridge National Lab	6000	6000
Applications of Distributed Fiber-Optic Sensors for Pipeline Monitoring	Halliburton Scholars Program, LSU	9/2019-7/2020	J. Sharma			3,750	3,750
Analytics Center of Excellence	Faculty Research Grant, LSU	7/2019-7/2021	J. Sharma	J. Chen P. Persaud		52,500	36,750
Experiments on Multiphase Flow of Live Muds in a Full-Scale Wellbore with Distributed Sensing for Kick and Gas-in-riser Detection/Mitigation	National Academy of Sciences, Gulf Research Program	1/2019-3/2021	M. Almeida	J. Sharma Y. Chen P. Waltrich A. Cox O. Santos	Texas A&M University	4,910,160	736,524
Development of a Public Webportal to Visualize Louisiana Oil & Gas Production	Digital Scholarship Start-up Grant, LSU Libraries	1/2019-7/2019	J. Sharma	-		1080	1080
Travel Grant for Emerging Faculty	Louisiana EpSCOR, LA Board of Regents	1/2019-12/2019	J. Sharma	-		1200	1200
Faculty Travel Grant	LSU	2020-2021	J. Sharma	-		750	750
					TOTAL	9,533,128	2,729,193

RESEARCH FEATURED IN MEDIA

- Yahoo News:** Research on the detection of nuclear leaks featured (2023) <https://finance.yahoo.com/news/lsu-petroleum-engineering-professor-research-150000873.html?guccounter=1>
- National Public Radio (NPR)** Interview on “All Things Considered” (2021) <https://www.wrkf.org/show/louisiana-considered/2021-07-22/louisiana-considered-the-m-j-foster-promise-program-using-fiber-optics-to-detect-oil-pipeline-leaks>
- Interview on NPR** affiliated WRKF on energy transition (2021) <https://www.wrkf.org/show/talk-louisiana/2021-07-15/thursday-july-15th-jyotsna-sharma-jim-gates-mark-ballard>
- ABC Affiliate KATC News Network** article on fiber optic sensing research (2021) <https://www.katc.com/news/covering-louisiana/lsu-professor-developing-way-to-detect-oil-leaks-before-they-cause-ecological-damage>
- The Advocate** newspaper article featuring quantum sensing research (2021) <https://www.katc.com/news/covering-louisiana/lsu-professor-developing-way-to-detect-oil-leaks-before-they-cause-ecological-damage>

6. **Business Reports** article featuring leak detection work (2021) <https://www.businessreport.com/industry/Isu-engineer-researching-how-to-catch-oil-and-gas-leaks-faster>
 7. **AP News** featured research article on fiber optic sensing (2021) <https://apnews.com/article/business-science-education-ee0193e56fce7e26ccd8b5160ee57ab3>
 8. **Research Featured in Journal of Petroleum Technology Magazine** on steamflood monitoring (2019) <https://jpt.spe.org/improving-temperature-logging-accuracy-steamfloods>
 9. **Research Featured in Journal of Petroleum Technology Magazine** on heavy oil research (2012) <https://onepetro.org/JPT/article-abstract/64/03/90/199723/Technology-Focus-Heavy-Oil-March-2012?redirectedFrom=fulltext>
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PATENTS

(¹indicates Dr. Sharma's student)

1. Tabjula, J.¹ and **Sharma, J.** Systems, Methods, and Devices for Leak Detection and Quantification using FBG, Patent Pending US-221205-8650, Filed: 26 April, 2023.
 2. **Sharma, J.** and Ekechukwu, E.K.¹ Distributed Pressure Sensing using Fiber Optic Distributed Acoustic Sensor and Distributed Temperature Sensor, Patent Pending US-2022-0364943-A1; Filed 17 Nov., 2022.
 3. **Sharma, J.**, Almeida, M., Santos, O., Chen, Y., Kunju, M. Distributed Fiber Optic Sensing for Improved Well Control, Patent Pending PCT/US2022/077654; Filed: Oct., 2022.
 4. **Sharma, J.**, Li, S., Oluwafemi, A.¹, Zhang, L. Super-Resolution of Satellite Data for Geophysical Exploration and Other Applications, Invention Disclosure # LSU-2022-021; Filed: Feb., 2022.
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PEER-REVIEWED JOURNAL PUBLICATIONS

(* indicates corresponding author, ¹indicates Dr. Sharma's student)

1. Wei, C., Adeyemi, T.¹, **Sharma, J.**, Chen, Y*. 2024. Improved Gas Influx Distribution Estimation using Interfacial Area Transport Equation Enabled Two-Fluid Model: An Advanced Modeling and Full-Scale Experimental Study. **International Journal of Multiphase Flow**, 172 (104706). <https://doi.org/10.1016/j.ijmultiphaseflow.2023.104706>.
 2. Adeyemi, T.¹, Wei, C., **Sharma, J.***, Chen, Y. 2023. Comparison of Gas Signature and Void Fraction in Water and Oil-based Muds using Fiber-Optic DAS, DTS, and DSS. **SPE Journal**, Accepted – In Press.
 3. Gemeinhardt, H.¹ and **Sharma, J.*** 2023. Machine Learning-Assisted Leak Detection using Distributed Temperature and Acoustic Sensors. **IEEE Sensors Journal**, <https://doi.org/10.1109/JSEN.2023.3337284>.
 4. Shetty, R.¹, **Sharma, J.***, Tyagi, M. 2023. Experimental Study on Sand Detection and Monitoring Using Distributed Acoustic Sensing for Multiphase Flow in Horizontal Pipes. **SPE Journal**, SPE-218005-PA. <https://doi.org/10.2118/218005-PA>.
 5. Ekechukwu, G.K.¹, **Sharma, J.***, William, M.J. A Novel Velocity Band Energy Workflow for Fiber-Optic DAS Interpretation and Multiphase Flow Characterization. **Scientific Reports** (Nature Publication), 13, 15142 (2023), <https://doi.org/10.1038/s41598-023-42211-0>.
 6. Adeyemi, T.¹, **Sharma, J.***, Tabjula, J. 2023. Monitoring and Characterization of Gas Migration in Oil-Based Mud using Fiber-Optic DAS & DTS. **SPE Journal**, 1-15. SPE-217433-PA. <https://doi.org/10.2118/217433-PA>.
 7. Kunju, M.R.*, Adeyemi, T.¹, **Sharma, J.**, Almeida, M. A. 2023. Fixed Choke Constant Outflow Circulation Method for Riser Gas Handling: Full-Scale Tests in Water and Synthetic-Based Mud With Gauges and Distributed Fiber Optic Sensors. **SPE Journal**, 1-19, SPE-217444-PA. <https://doi.org/10.2118/217444-PA>.
 8. Wei, C., Tabjula, J.¹, **Sharma, J.**, Chen, Y*. 2023. The Modeling of Two-way Coupled Transient Multiphase Flow & Heat Transfer during Gas Influx Management using Fiber Optic Distributed Temperature Sensing. **Int. Journal of Heat and Mass Transfer**, 214(01):124447, <https://doi.org/10.1016/j.ijheatmasstransfer.2023.124447>.
 9. Tabjula, J.¹, Shetty, R.¹, Adeyemi, T.¹, **Sharma, J.***. 2023. Empirical Correlations for Predicting Flow Rates Using Distributed Acoustic Sensor Measurements, Validated with Wellbore and Flow Loop Data Sets. **SPE Production and Operations**, 1–16, SPE-215834-PA. <https://doi.org/10.2118/215834-PA>.
 10. Tabjula, J.¹, **Sharma, J.***. 2023. Feature Extraction Techniques for Noisy Distributed Acoustic Sensor Data Acquired in a Wellbore. **Applied Optics**, 62(16), E51-E61. <https://doi.org/10.1364/AO.483253>.
 11. Wei, C., Tabjula, J.¹, **Sharma, J.**, Chen, Y*. 2023. A Novel Data Assimilation-Based Real-Time State Estimation Method for Gas Influx Profiling During Riser Gas Events. **Journal of Energy Resources Technology**, 145(06). <https://doi.org/10.1115/1.4056724>.
 12. Tabjula, J.¹, Wei, C., **Sharma, J.***, Santos, O., Chen, Y., Kunju, M., et al. 2023. Well-Scale Experimental and Numerical Modeling Studies of Gas Bullheading Using Fiber-Optic DAS and DTS. **Journal of Petroleum Science and Engineering**, 225: 211662, June 2023. <https://doi.org/10.1016/j.jpetrol.2023.211662>.
 13. Ekechukwu, G.K.¹, **Sharma, J.*** 2023. Degradation Analysis of Single-mode and Multimode Fibers in a Full-scale Wellbore and its Impact on DAS and DTS Measurements. **IEEE Sensors**, 23(9): 9287-9300. <https://doi.org/10.1109/JSEN.2023.3257264>.
 14. **Sharma, J.***, Santos, O.L., Ogunsanwo, O., Ekechukwu, G.K.¹, Almeida, M., Chen, Y. 2022. Fiber-Optic DAS and DTS for Monitoring Riser Gas Migration. **Journal of Petroleum Science and Engineering**, 220 (Part B): 111157. <https://doi.org/10.1016/j.petrol.2022.111157>.
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15. Santos, O.*, Almeida, A., **Sharma, J.**, et al. 2022. New Experimental Results Show the Application of Fiber Optic to Detect and to Track Gas Position in Marine Risers and Shed Lights on the Gas Migration Phenomenon Inside a Closed Well. **SPE Drilling and Completions**, 38 (01): 34–51. <https://doi.org/10.2118/208682-PA>.
16. Ekechukwu, G.K.¹, **Sharma, J.*** 2021. Well-scale Demonstration of Distributed Pressure Sensing using Fiber-optic DAS and DTS. **Nature - Scientific Reports** (Nature Publication), 11:12505 (2021). <https://doi.org/10.1038/s41598-021-91916-7>.
17. **Sharma, J.***, Dean, J., Aljabberia F¹., Altememee, N. ¹ 2021. In-situ Combustion in Bellevue Field in Louisiana – History, Current State and Future Strategies. **Fuel**, 284: 118992. <https://doi.org/10.1016/j.fuel.2020.118992>.
18. **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. <https://doi.org/10.1016/j.petrol.2020.107727>.
19. Wang, B. ¹, **Sharma, J.***, Chen, J., Persaud, P. 2021. Ensemble Machine Learning Assisted Reservoir Characterization using Field Production Data - an Offshore Field Case Study. **Energies**, 2021, 14(4), 1052. <https://doi.org/10.3390/en14041052>.
20. Santos, O.*, Williams, W., **Sharma, J.**, Almeida, M., Kunju, M., Taylor, C. 2021. Use of Fiber-Optic Information To Detect and Investigate Gas-in-Riser. **SPE Drilling and Completions**, 36(04): 798–815. <https://doi.org/10.2118/204115-PA>.
21. Rezk, M.Y. ¹, **Sharma, J.***, Gartia, M.R. 2020. Nanomaterial-Based CO₂ Sensors. **Nanomaterials**, 2020, 10(11), 2251. <https://doi.org/10.3390/nano10112251>.
22. **Sharma, J.***, Cuny, T., Ogunsanwo, T., Santos, O. 2020. Low-Frequency Distributed Acoustic Sensing for Early Gas Detection in a Wellbore. **IEEE Sensors**, 21(5): 6158-6169. <https://doi.org/10.1109/JSEN.2020.3038738>.
23. **Sharma, J.***, Santos, O., Feo, G. ¹, et al. 2020. Well-Scale Multiphase Flow Characterization and Validation Using Distributed Fiber Optic Sensors for Gas Kick Monitoring. **Optics Express**, 28(26):38773. <https://doi.org/10.1364/OE.404981>.
24. Feo, G. ¹, **Sharma, J.***, Cunningham, S. 2020. Integrating Fiber Optic Data in Numerical Reservoir Simulation Using Intelligent Optimization Workflow. **Sensors**, 20(11): 3075. <https://doi.org/10.3390/s20113075>.
25. Feo, G. ¹, **Sharma, J.***, Kortukov, D., et al. 2020. Distributed Fiber Optic Sensing for Real-Time Monitoring of Gas in Riser during Offshore Drilling. **Sensors**, 20(1): 267. <https://doi.org/10.3390/s20010267>.
26. **Sharma, J.***, Inwood, S. B., and Kovscek, A. R. 2012. Experiments and Analysis of Multi-scale Viscous Fingering during Imbibition. **SPE Journal**, 17(4):1142-1159. <https://doi.org/10.2118/143946-PA>.
27. **Sharma, J.***, Moore, G. R., and Mehta, S.A.2012. Effect of Methane Co-injection in SAGD–Analytical and Simulation Study. **SPE Journal**, 17(3):687. <https://doi.org/10.2118/148917-PA>.
28. **Sharma, J.***, and Gates, I.D. 2011. Interfacial Stability and Displacement Efficiency in Steam Solvent Processes. **SPE Journal**, 16(1):55-64. <https://doi.org/10.2118/130050-PA>.
29. **Sharma, J.***, and Gates, I.D. 2011. Convection at the Edge of SAGD Steam Chamber. **SPE Journal**, 16(3): 503-512. <https://doi.org/10.2118/142432-PA>.
30. **Sharma, J.***, and Gates, I.D. 2010. Multiphase Flow at the Edge of Steam Chamber. **Canadian Journal of Chemical Engineering**, 88(3):312-332. <https://doi.org/10.1002/cjce.20280>.

REFEREED CONFERENCE PUBLICATIONS

1. Zhong, S., **Sharma, J.***, Chen, K. 2023. Optical Fiber-based Novel Quasi-Distributed Pressure Sensing. Presented at Society of Photo-Optical Instrumentation Engineers (SPIE) Optical Engineering and Applications conference. 20-24 August, San Diego, California, USA. <https://doi.org/10.1117/12.2677901>.
2. Wei, C., Adeyemi, T. ¹, **Sharma, J.**, Mahmud, S., Chen, Y*. 2023. Full-scale Experimental And Modeling Studies Of Gas Migration & Suspension Behaviors During Wellbore Influx Management Using MPD. **SPE Annual Technical Conf. & Exhibition**, 16-18 Oct. San Antonio, USA. <https://doi.org/10.2118/215038-MS>.
3. Tabjula, J. ¹, **Sharma, J.***. 2023. Comparison of the sensitivity of DAS and FBG for detecting and quantifying small pipeline leaks. **SPIE Defense and Commercial Sensing Conference**, Orlando, Florida, 30 June - 4 May. **INVITED PAPER**, <https://doi.org/10.1117/12.2664522>.
4. Tabjula, J. ¹, **Sharma, J.***. 2022. Extraction of Gas Rise Features from a Noisy DAS Data in an Experimental Wellbore. 27th **International Conference on Optical Fiber Sensors**, 28 Aug-2 Sep 2022, Virginia, USA. <https://doi.org/10.1364/OFS.2022.Th4.62>.
5. Alaofin, O. ¹, Zhang, Y., **Sharma, J.***, Li, X. 2022. Cross-Modality Super-Resolution of Satellite Gravity Data for Geophysical Exploration. **IEEE Int. Geoscience and Remote Sensing Symposium**, Kuala Lumpur, July 17-22. <https://doi.org/10.1109/IGARSS46834.2022.9883035>.
6. Santos, O.*, Almeida, A., **Sharma, J.**, Kunju, M., Chen, Y., Waltrich, P., 2022. New Experimental Results Show the Application of Fiber Optic to Detect and to Track Gas Position in Marine Risers and Shed Lights on the Gas Migration Phenomenon Inside a Closed Well. **SPE/IADC International Drilling Conference and Exhibition**, Galveston, Texas, USA, March 2022. <https://doi.org/10.2118/208682-MS>.

7. Ekechukwu, G.K.¹, **Sharma, J.*** 2021. Automated Detection & Quantification of Gas Influx Velocity in Wellbore from Fiber-Optic Sensor Data. **Optical Society of America Imaging & Applied Optics Congress**, July 2021, JTh6A.11. <https://doi.org/10.1364/AIS.2021.JTh6A.11>.
8. Santos, O.*, Williams, W., **Sharma, J.**, Almeida, M., Kunju, M., Taylor, C., 2021. Use of Fiber Optic Information to Detect and Investigate the Gas-in-riser Phenomenon. **2021 SPE/IADC International Drilling Conference and Exhibition**, Virtual, March 2021. <https://doi.org/10.2118/204115-MS>.
9. Williams, W. C.*, Taylor, C. E., Almeida, M. A., **Sharma, J.**, et al. 2020. Distributed Sensing and Real Time Visualization of Gas Kick Dynamics in a Full-Scale Wellbore, **SPE Annual Technical Conference and Exhibition**, Virtual, 26-29 October, 2020. <https://doi.org/10.2118/201539-MS>.
10. Feo, G.¹, **Sharma, J.***, Santos, O., Toba, O., Williams, W. 2020. Multiphase Flow Characterization and Modeling Using Distributed Fiber Optic Sensors to Prevent Well Blowout. **Optical Sensors and Sensing Congress**, Optical Society of America, paper EM3C.5, Virtual. <https://doi.org/10.1364/ES.2020.EM3C.5>.
11. Zhou, X.¹, Tyagi, M.*, **Sharma, J.** 2020. Enhanced Automatic Segmentation of Salt Bodies from Seismic Images Using Wavelet Convolutional Neural Networks. **EAGE Conf.**, Amsterdam, Dec., Vol. 2020, pg 1-5. <https://doi.org/10.3997/2214-4609.202011987>.
12. Feo, G.¹, **Sharma, J.***, Cunningham, S. 2020. Machine Learning Assisted History Matching to Integrate Fiber Optic Data with Reservoir Simulation. Accepted at **SPE Canadian Heavy Oil and Unconventional Resources Conference**, Calgary, Canada, March. [Conference cancelled due to Covid].
13. Feo, G.¹, **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. <https://doi.org/10.2118/196113-MS>.
14. 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. <https://doi.org/10.2118/191539-MS>.
15. **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. <https://doi.org/10.2118/185676-MS>.
16. **Sharma, J.***, Moore, G. R., and Mehta, S.A.2011. Effect of Methane Co-injection in SAGD–Analytical and Simulation Study. **SPE Canadian Unconventional Resource Conference**, Calgary, Canada, November. <https://doi.org/10.2118/148917-MS>.
17. **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. <https://doi.org/10.2118/130050-MS>.
18. **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. <https://doi.org/10.2118/143946-MS>.
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KEYNOTE PRESENTATIONS & INVITED TALKS

1. **Sharma, J.** 2023. Machine Learning Meets Fiber-Optic Sensing. **3rd European Association of Geoscientists and Engineers** on Fiber-Optic Sensing for Energy Applications, 13-15 Nov. 2023, Chengdu, China.
2. **Sharma, J.** 2023. Applications of Fiber-Optic Sensing for Energy Applications. **National Energy Technology Laboratory Sensor Technology Technical Forum**, 5-6 Oct. 2023, Pittsburgh, Pennsylvania.
3. **Sharma, J.** 2023. Case Study on Gas Monitoring and Multiphase Characterization in wellbore. **Workshop on Optical Fiber Sensors for Energy Applications**, organized by Idaho National Lab and University of Pittsburgh, Pittsburgh, Pennsylvania, USA, 2-3 March.
4. **Sharma, J.** 2022. Future of Fiber Optic Sensing for Energy Applications and the Need for Industry-Academic Collaboration. **2nd European Association of Geoscientists and Engineers (EAGE)** on Fiber-Optic Sensing for Energy Applications, 5-7 Dec. 2022, Kuala Lumpur, Malaysia.
5. **Sharma, J.** 2021. Wellbore Monitoring with Fiber Optic Sensing. **SPE Erbil Section, Iraq**, 10 February.
6. **Sharma, J.** 2020. Application of Distributed Fiber Optic Sensing in the Oil and Gas Industry. **University of Wyoming**, 15 October.
7. **Sharma, J.** 2019. Distributed Fiber Optic Sensing Technology in Offshore Environments – Current State and Future Directions. **Stanford University and SPE Golden Gate Section**, Stanford (CA), 14 November.
8. **Sharma, J.** 2014. Thermal Heavy Oil Recovery. **California State University**, Bakersfield (CA), 27 November.