

## MUKUL M. SHARMA

Professor, "Tex" Moncrief Centennial Chair in  
Petroleum and Geosystems Engineering  
University of Texas at Austin, Austin, TX 78712.  
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### EDUCATION

Ph.D., Petroleum Engineering, University of Southern California, 1985.  
M.S., Chemical Engineering, University of Southern California, 1981.  
B.S., Chemical Engineering, Indian Institute of Technology, 1980.

### RESEARCH INTERESTS

- ✓ Formation Damage
- ✓ Hydraulic Fracturing
- ✓ Flow in Porous Media
- ✓ Water / Waste Injection
- ✓ Surface and Colloid Chemistry
- ✓ Natural Gas Engineering

### EXPERIENCE

#### Professor, University of Texas at Austin

(September 1995 to present, Chairman of the Department Sept. 2001 to August 2005)  
Teaching and research work related to formation damage, petrophysics and natural gas engineering.

#### Associate Professor, University of Texas at Austin

(September 1990 to Aug. 1995)

#### Assistant Professor, University of Texas at Austin

(September 1985 to Aug. 1990)

#### Research Engineer, Chevron Oilfield Research Company

(May to August 1984)

Worked on a project to evaluate the effect of drilling fluids on the wettability of rocks.

### HONORS

- ✓ SPE Anthony F. Lucas Gold Medal, 2009
- ✓ SPE Distinguished Member, 2004
- ✓ SPE Distinguished Lecturer, 2004
- ✓ Editorial Review Board, SPE Journal, 1996-2000
- ✓ Review Chairman, Society of Petroleum Engrs., 1995-96
- ✓ Technical Editor, Society of Petroleum Engineers, 1992-95
- ✓ Martin Marietta Excellence in Teaching Award, 1996
- ✓ Halliburton Foundation, Faculty Excellence Award, 1994
- ✓ Engineering Foundation Faculty Leadership Award, 1987
- ✓ Sun E&P Company Centennial Fellowship, 1986-95
- ✓ Billy and Claude Hocott Distinguished Engineering Research Award, 2010
- ✓ Lester C. Uren Award, SPE, 2003
- ✓ SPE Formation Evaluation Award, 1998
- ✓ Shell Oil Foundation Faculty Fellowship, 1985-88
- ✓ Associate Editor. The Log Analyst, 1992-95
- ✓ SPWLA Education Foundation Award 1986.
- ✓ ARCO Foundation Doctoral Fellowship, 1983-85
- ✓ SPE Best PhD student paper, 1983.
- ✓ Member, Pi Epsilon Tau and Sigma Xi

### PUBLICATIONS

Refereed Publications: 133  
Conference Proceedings: 166  
Patents: 7

### CURRENT RESEARCH SUPPORT

- ✓ Total funded amount-personal share for past year (09-10): \$ 1,278,514.00
- ✓ Total Research funded for past five years (03/04 – 07/08): \$ 5,041,533.00
- ✓ Total funded amount-personal share for past five years (03/04 – 07/08): \$ 3,513,131.00
- ✓ Total career research funding: over \$15,000,000.00

- Supervise a research group of 25 research staff and graduate students (12 PhD, 10 MS and 3 research staff members) with support from private and government sponsors.

### **CURRENT PhD STUDENTS SUPERVISED**

1. Anand Nagoo
2. Bo Gao
3. Changmin Jung
4. Sahil Malhotra
5. Jongsoo Hwang
6. Somnath Mondal
7. Dongkeun Lee
8. Lionel Ribeiro
9. Karn Agarwal
10. Junhao Zhou (with Benny Freeman)
11. Kyung Haeng Lee (with Chun Huh)
12. Sirirat Kasemset (with Benny Freeman)

### **CURRENT MS STUDENTS SUPERVISED**

1. John W. Pedlow
2. Stephen A. Bryant
3. Roman J. Shor
4. Evan Gilmore
5. Trevor Pollock
6. Smarth Agrawal
7. Do Shin
8. Natalia Salies
9. Iona P. Williams (with Jon Olson)
10. Himanshu Yadav (with Kishore Mohanty)

- 42 PhD dissertations and 81 MS theses supervised to date; 7 are now faculty members at other Universities.

### **CURRENT FULL-TIME RESEARCH STAFF**

1. Ripudaman Manchanda
2. Harry Linnemeyer
3. Jin Lee

### **CONSULTING**

Shell	United Nations	El Paso
ConocoPhillips	Kerr McGee	Encana
Chevron	PDVSA	Osprey
Petrobras	Husky Oil	GERMI
Occidental	Jones Energy	CNPC
ENI	Newpark	ONGC
Statoil	Apache	Akzo
Halliburton,	Anadarko	BHP
Schlumberger	Layline	Repsol
Baker-Hughes	Layton	YPF.
Proctor and Gamble	Total	

### **MS STUDENT SUPERVISIONS - COMPLETED**

1. Ken Cowan (August 1987) "Fractal Dimension as a Petrophysical Parameter", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
2. Anuj Gupta (August 1987) "A Model for Estimating Formation Damage in Hydrocarbon Reservoirs <sup>Containing</sup> Swelling Clays", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
3. Ali Garrouch (August 1987) "The Effect of Wettability, Stress, and Temperature on the Saturation and Cementation Exponents of the Ardrrie Equation", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with H.F. Dunlap).
4. Sanjay Vitthal (December 1987) "A One Dimensional Formation Damage Simulator for Damage Due to Fines Migration" , Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with K. Sepehrmoori).
5. Shahryar Shirzadi (May 1988) "Visual Studies on the Effect of Two Phase Flow on Particle Transport in Porous Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
6. Amit Sarkar (May 1988) "An Experimental Investigation of Fines Migration in Two Phase Flow", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
7. Mike Lewis (May 1988) "The Effects of Stress and Wettability on the Electrical Properties of Rocks", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with M.H. Dorfman).

8. Wu Gang (August 1988) "Modeling Precipitation Dissolution Processes with Precipitate Migration" , Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with L.W. Lake).
9. John Stenson (August 1988) "A Petrophysical Model for Shaly Sands", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
10. Joseph Menezes (August 1988) "The Alteration of Wettability due to Interaction with Oil-Based Drilling Fluids and Pure Surfactants", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
11. Yi Mei Wang (August 1988) "A Three-Dimensional Network Model for Porous Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
12. Fred Garver (December 1988) "The Competition for Chromium in a Berea Core between Xanthan Biopolymer and the Resident Clays", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with G.A. Pope).
13. Lei Zongming (December 1988) "A Model for Clay Filter Cakes", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
14. David Aliaga (May 1989) "An Experimental Investigation of Precipitation Dissolution Processes with Precipitate Migration", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with L.W. Lake).
15. Minquan Jin (Aug. 1989) "A Model for Coupled Processes in Inhomogeneous Geological Processes", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
16. David Tambe (December 1989) "Colloidal Particles at Fluid-Fluid Interfaces: Emulsion Stability and Multiphase Flow", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
17. George Trussell (May 1990) "A Heuristic Classification Program to Diagnose and Recommend Treatment for Near Wellbore Production Problems", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
18. Charles Holden (May 1990) , Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, (Co-supervised with K. Sepehrnoori).
19. Mohun Javalaghi (December 1990) "Electrical Resistivity of Hydrated Shales", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
20. Jiao Di (May 1991) "Invasion of Mud Filtrates into Sandstone Cores", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
21. George Williams (May 1991) "Statistical Analysis of FMS Data", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
22. Subhayu Basu (August 1993) "Theory For Hydration Forces In Thin Films of Aqueous Electrolytes", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
23. Adinathan Venkitaraman (May 1995) "Acoustic Removal of Near Wellbore Formation Damage", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
24. Mustafa M. Erbil (August 1995) "The Role of Taylor Vortices in Drilling", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
25. Edouard Wang (December 1996) "Mechanical Properties of Unconsolidated Sands and Their Impact on Frac-Pack Design", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
26. Jinhua Liang (May 1997) "A Model for Fracturing Fluid Leakoff In High Permeability Formations," Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
27. Liv Fevang (May 1997) "Nuclear Magnetic Resonance Imaging of Biofilms and Bacterial Adhesion Studies," Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.

28. Nasakul Siree (August 1997) "Use of Polymerizable Spreading Thin Films for Water Shutoff in Gas Wells", The University of Texas at Austin.
29. Tarlochan Singh (December 1997) "Evaluation of Drill-In Fluid Induced Formation Damage in Unfractured and Fracutred Reservoirs," Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
30. Zeno George Philip (December 1997) "A Theoretical and Experimental Study of the Role of Taylor Vortices in the Transport of Drill Cuttings," Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
31. Bimal Thomas (December 1997) "Formation Damage in Horizontal Wells," Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
32. Brian Hoskins (May 1998) "Nuclear Magnetic Resonance Imaging of Biofilms in an Open-Flow and Glass Bead-Packed Bioreactor", The University of Texas at Austin.
33. Ganesh Narayanaswamy (August 1998) "Well Productivity of Gas Condensate Reservoirs", The University of Texas at Austin.
34. Yea-Ling Ong (August 1998) "Atomic Force Microscopy Studies of Bacterial Adhesion", The University of Texas at Austin.
35. Turid Winnberg (July 1999) "Formation Damage Due to Use of Silicate Water Based Mud in the Reservoir Section," Norwegian University of Science and Technology
36. Zulfeffeli Zain (August 1999) "Cleanup of Wall-Building Filter Cakes," The University of Texas at Austin.
37. Hamoud Al-Anazi (December 1999) "Evaluation of pH-Sensitive Polymer for Gravel Packing Operations," The University of Texas at Austin.
38. Kumar Rajeev (August 2000) "Productivity Improvement of Gas-Condensate Wells by Fracturing," The University of Texas at Austin.
39. Phani Bhushan Gadde (August 2000) "Growing Injection Well Fractures and Their Impact on Water Flood Performance," The University of Texas at Austin.
40. Jake Walker (December 2000) "Laboratory Evaluation of Alcohols and Surfactants to Increase Production from Gas-Condensate Reservoirs," The University of Texas at Austin.
41. Ajay Suri (December 2000) "A Model for Multi-Component Filtration," The University of Texas at Austin.
42. Devinder Arora (December 2000) "The Nature of the Compacted Zone Around Perforation Tunnels," The University of Texas at Austin.
43. Rana Roy (May 2001) "Factors Controlling the Flowback Behavior of Hydrocarbon Bearing Formation", The University of Texas at Austin.
44. Shekhar Sinha (May 2001) "Modeling the Performance of Deviated and Multi-Lateral Wells," The University of Texas at Austin.
45. Kathrin Ann Lewis (May 2001) "Laboratory NMR Study of Coal and Charcoal Samples for Formation Evaluation in Coalbed Methane Reservoirs," The University of Texas at Austin.
46. Naeem Al-Shehri (August 2002) "Permeability Impairment due to Simulated Surge Flow in Underbalance Perforating", The University of Texas at Austin.
47. Rakesh Rai (August 2003) "Parametric Study of Relative Permeability Effects on Gas-Condensate Core Floods and Wells", The University of Texas at Austin.
48. Jae Hyuk Lee (May 2003) "Phase Equilibria in Systems Containing Hydrocarbon, Water and Methanol", The University of Texas at Austin.

49. Duantem Pathanakitchakar (May 2003) "Evaluation of Asphaltic Coating Agents on Filtrate Invasion into Shale", The University of Texas at Austin.
50. Olukayode Adegbulugbe (May 2003) "Value of Information: A Real Options Approach", The University of Texas at Austin.
51. Bimal Parekh (May 2003) "Cleanup of Water-Blocks in Depleted Low-Permeability Reservoirs", The University of Texas at Austin.
52. Nicholas Popp (August 2004) "Acoustic properties of shale with variant water activity", The University of Texas at Austin.
53. Narayan Nair (December 2004) "Asphaltic Shale Coating Agents", The University of Texas at Austin.
54. Eme Erbil (May 2005)
55. Hunter Graves (Aug. 2005) "Experimental Investigation of Condensate Blockage in High and Low Permeability Cores," The University of Texas at Austin
56. Vishal Bang (Aug 2005) "Phase Behavior Study of Hydrocarbon-Water-Alcohol Mixtures", The University of Texas at Austin.
57. Jitendra Mohun (Dec. 2005) "Modeling of Gas Condensate Wells with and without Hydraulic Fractures," The University of Texas at Austin.
58. Suk Kyoong Choi (Dec. 2005) "A Study of pH Sensitive Polymer for Novel Conformance Control Applications," The University of Texas at Austin.
59. Hunter Graves (2006) "Experimental Investigation of Condensate Blockage in High and Low Permeability Cores," The University of Texas at Austin.
60. Andreas Oleas Mogollon (2006) "Entrance of Oil-Base Muds into Shale," The University of Texas at Austin.
61. Ian Benson (Dec. 2006), Numerical Simulation of pH-Sensitive Polymer Injection as a Conformance Control Method," The University of Texas at Austin
62. Juan Acevedo (August 2007), "Shale Membrane Efficiency Experimental Study Using WBM," The University of Texas at Austin.
63. Oscar Humberto Valbuena (2007) "Water Injectivity Analysis of Guando Field," The University of Texas at Austin.
64. Ian Phillip Benson (2007) "Numerical Simulation of pH-Sensitive Polymer Injection as a Conformance Control Method," The University of Texas at Austin.
65. Nelson Hu (2007) "An experimental investigation of the dielectric properties of rocks," The University of Texas at Austin
66. Vasudev Singh (2008) "Fracture reorientation around injection and production wells," The University of Texas at Austin.
67. Kyung Haeng Lee (August 2008) "Impact of Injection Well Fractures on Well Injectivity and Reservoir Sweep in Waterflooding and Enhanced Oil Recovery," The University of Texas at Austin.
68. Collins Emenike Osuji (August 2008) "Effect of Porosity and Permeability on the Membrane Efficiency of Shales," The University of Texas at Austin.
69. Alexander David Schmitt (August 2008) "Kinetics of Gas Hydrate Formation and Dissociation," The University of Texas at Austin.
70. Taner Sensoy (May 2009) "Use of Nanoparticles for Maintaining Shale Stability," The University of Texas at Austin.

71. Suleen Bhagat (August 2010) "Calculation of Residual Oil Saturation for Surfactant EOR Process from Injection Well Pressure Data," The University of Texas at Austin.
72. Sung Hyun Kim (December 2010) "A Predictive Model for Sand Production in Poorly Consolidated Sands." The University of Texas at Austin.
73. Syed Furqan Hassan Gilani (December 2010) "Correlating Wettability Alteration with Changes in Gas Permeability in Gas Condensate Reservoirs." The University of Texas at Austin.
74. Sahil Malhotra (December 2010) "Proppant Settling in Viscoelastic Surfactant (VES) Fluids." The University of Texas at Austin.
75. Jongsoo Hwang (Spring 2011) "Gas Injection Techniques for Condensate Recovery and Remediation of Liquid Banking in Gas-Condensate Reservoirs." The University of Texas at Austin.
76. Ripudaman Manchanda (Spring 2011) "Mechanical, Failure, and Flow Properties of Sands: Micro-Mechanical Models." The University of Texas at Austin.
77. Divya Ramaswamy (Spring 2011) "Effect of Surfactants on Methane Hydrate Formation and Dissociation." The University of Texas at Austin.
78. Corey Alan McCulley (Spring 2011) "Development of a Chemical Treatment for Condensate Blocking in Tight Gas Sandstone." The University of Texas at Austin.
79. Karn Agarwal (Spring 2011) "Modeling Fracture Propagation in Poorly Consolidated Sands." The University of Texas at Austin.
80. Somnath Mondal (Spring 2011)"" The University of Texas at Austin.
81. Benjamin Spisak (Summer 2011) "Using Nanoparticle Stabilized Foam to Achieve Wellbore Stability in Shales." The University of Texas at Austin.

#### **Ph.D. STUDENT SUPERVISION - COMPLETED**

1. Habib Chamoun (December 1988) "Detachment of Particles from Surfaces", Department of Chemical Engineering, The University of Texas at Austin, (Co-supervised with R.S. Schechter).
2. Amit Sarkar (December 1991) "Simulation of Microbial Oil Recovery Processes", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
3. Anuj Gupta (August 1991) "Stability of Thin Aqueous Films on Solid Surfaces", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
4. Sanjay Vitthal (August 1991) "A Model for Particle Deposition and Filter Cake Buildup in Granular Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
5. A. Tutuncu (May 1992) "Velocity Dispersion and Attenuation of Acoustic Waves in Granular Sedimentary Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
6. Ali Garrouch (August 1992) "Dielectric Properties of Fluid Saturated Rocks", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
7. Wisup Bae (August, 1992) "Influence of Macropore Heterogeneity on the Petrophysical Properties of Carbonates", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
8. Jiao Di (December 1993) "Formation Damage and Fluid Loss in Cross-Flow Filtration of Drilling Muds", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.

9. Sitakanta Mohanty (May 1993) "Experimental Determination and Theoretical Prediction of Effective Thermal Conductivity of Porous Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
10. Gao Yaming (May 1994) "Effect of Structure on Petrophysical Properties of Porous Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
11. David Tambe (May 1994) "Colloidal Particles at Fluid-Fluid Interfaces: Emulsion Stability and Multiphase Flow", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
12. Sanjit Das (December 1995) "Adhesion and Detachment of Particles from Surfaces: A Fundamental Study", Department of Chemical Engineering, The University of Texas at Austin.
13. Subhayu Basu (May 1996) "Surface Forces in Thin Aqueous Films: Applications to Wettability and Membrane Transport", Department of Chemical Engineering, The University of Texas at Austin.
14. B.G. Sharma (May 1996) "Self Assembled Polymerizable Films on Solid Substrates: Formation, Characterization, and Applications", Department of Chemical Engineering, The University of Texas at Austin.
15. Suhas Bodwadkar (August 1996) "Nondestructive Characterization of Core Porosity and Lithology Using Gamma Rays ", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
16. Shutong Pang (August 1996) "Colloid Retention and Flow in Porous Media", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
17. Rosana Lomba (May 1998) "The Membrane Properties of Shales and Ionic Solutions", Department of Petroleum and Geosystems Engineering, The University of Texas at Austin.
18. Alex Freitas (Dec 1998) "Role of Acid-Base Interactions in Colloidal Adhesion and Stability of thin Films", The University of Texas at Austin.
19. Zuleyka Mendez (Sept. 1999) "Flow of Dilute Oil-in-Water Emulsions in Porous Media," The University of Texas at Austin.
20. Anna Razatos (Sept. 1999) "Status of Bacteria Adhesion by Atomic Force Microscopy," The University of Texas at Austin.
21. Siree Nasakul (May 2000) "Thermoreversible Gels and Temperature Triggered Kinetically Controlled Gels for Oilfield Applications", The University of Texas at Austin.
22. Kassim Al-Riyami (May 2000) "Synthesis and Characterization of Reversible Emulsions: Application to Completion Fluids", The University of Texas at Austin.
23. Jing Xie (May 2001) "Filtration Mechanisms in Frac-Pack and Gravel Pack Completions", The University of Texas at Austin.
24. Mengjiao Yu (August 2002) "Chemical Effects & Wellbore Stability in Shales", The University of Texas at Austin.
25. Padmakar Ayyalasomayajula (May 2003) "Prediction of Bulk and Interfacial Thermodynamic Properties of Polar Mixtures by Statistical Associating Fluid Theory", The University of Texas at Austin.
26. Hamoud Al-Anazi (May 2003) "Experimental Measurements of Condensate Blocking and Treatments in Low and High Permeability Cores", The University of Texas at Austin.
27. Talal Al Bazali (May 2005) "Experimental Study of the Membrane Behavior of Shale During Interaction with Water-based and Oil-based Muds", The University of Texas at Austin.
28. Jianguo Zhang (August 2005) "The Impact of Shale Properties on Wellbore Stability", The University of Texas at Austin.
29. Jagannathan Mahadevan (May 2006) "Flow through Drying of Porous Media," The University of Texas at Austin.

30. Viren Kumar (May 2006), Chemical Stimulation of Gas Condensate Reservoirs: An Experimental and Simulation Study,” The University of Texas at Austin.
31. Ajay Suri (August 2006) “Cleanup of Internal Filter Cake during Flowback,” The University of Texas at Austin.
32. Zongyu Zhai (August 2006) “Fracturing and Fracture Reorientation in Unconsolidated Sands and Sandstones,” The University of Texas at Austin.
33. Yajun Liu (August 2006) “Settling and Hydrodynamic Retardation of Proppants in Hydraulic Fractures,” The University of Texas at Austin.
34. Vishal Bang (2007) “Development of a Successful Chemical Treatment for Gas Wells with Condensate or Water Blocking Damage,” The University of Texas at Austin.
35. Suk Kyoong Choi (August 2008) “pH Sensitive Polymers for Novel Conformance Control and Polymer Flooding Applications,” The University of Texas at Austin.
36. Alyson Sagle (May 2009) “PEG as Anti-Fouling Coatings for Reverse Osmosis Membranes,” The University of Texas at Austin.
37. Kyle Eugene Frieauf (August 2009) “Simulation and Design of Energized Hydraulic Fractures,” The University of Texas at Austin.
38. Elizabeth Van Wagner (August 2010) “Polyamide Desalination Membrane Characterization and Surface Modification to Enhance Fouling Resistance,” The University of Texas at Austin.
39. Chengwu Yuan (December 2010) “A New Relative Permeability Model for Compositional Simulation of Two and Three Phase Flow”. The University of Texas at Austin.
40. Mohabbat Ahmadi (December 2011) “Development of a Chemical Treatment for Condensate and Water Blocking in Carbonate Gas Reservoirs”. The University of Texas at Austin.
41. David Torres Lopes (August 2011) “”. The University of Texas at Austin.
42. Nicolas Roussel (August 2011) “”. The University of Texas at Austin.

## PUBLICATIONS AND PRESENTATIONS BY DR. MUKUL M. SHARMA

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### PUBLICATIONS

#### Refereed Archival Journal Publications

1. "Optimizing Fracture Spacing and Sequencing in Horizontal-Well Fracturing," *SPE Production & Operations*, Vol. 26, No. 2, pp. 173-184, May 2011, Roussel, N.P.; Sharma, M.M.
2. "Surface Modification of Commercial Polyamide Desalination Membranes Using Poly (Ethylene Glycol) Diglycidyl Ether to Enhance Membrane Fouling Resistance," *Journal of Membrane Science*, Vol.xx, No.xx, pp.xx, pending publication, Van Wagner, E.M.; Sagle, A.C.; Sharma, M.M.; La, Y.-H.; Freeman, B.D.
3. "Chemical Treatment To Mitigate Condensate and Water Blocking in Gas Wells in Carbonate Reservoirs," *SPE Production & Operations*, Vol 26, No. 1, pp. 67-74, February 2011, M. Ahmadi, M.M. Sharma, G.A. Pope, D.E. Torres, C.A. McCulley, and H. Linnemeyer, The University of Texas at Austin, SPE.
4. "Geophysics at the Interface: Response of Geophysical Properties to Solid-Fluid, Fluid-Fluid, and Solid-Solid Interfaces", *Reviews of Geophysics*, Vol.48, December 2010, Knight, R. ; Pyrak-Nolte, L.J. ; Slater, L.; Atekwana, E.; Endres, A.; Geller, J.; Lesmes, D.; Nakagawa, S.; Revil, A.; Sharma, M.M.; Straley, C.
5. "pH-Sensitive Polymers for Novel Conformance-Control and Polymer-Flood Applications," SPE 121686, *SPE Reservoir Evaluation & Engineering*, Vol. 13, No. 6, pp. 926-939, December 2010, Choi, S.K. Chevron ETC; Sharma, M.M., Bryant, S. L., and Huh, C..
6. "Phase Behavior Study of Hydrocarbon/Water/Methanol Mixtures at Reservoir Conditions," SPE 10210, *SPE Journal*, Vol.15, No.4, pp.952-962, December 2010, Bang, V.; Pope, G.A.; Sharma, M.M.
7. "A Simple and Accurate Model for Well Productivity for Hydraulically Fractured Wells," SPE 119264-PA, *SPE Production & Operations*, Vol. 25, No. 4, pp. 453-460, November 2010, Frieauf, K.E.; Suri, A.; and Sharma, M.M..
8. "Quantifying Transient Effects in Altered-Stress Refracturing of Vertical Wells," SPE 119522-PA, *SPE Journal*, Vol 15, No. 3, pp. 770-782, September 2010, Roussel, N.P. and Sharma, M. M.
9. "A Model for Water Injection Into Frac-Packed Wells," *SPE Reservoir Evaluation & Engineering*, Vol.13, No. 03, pp. 449-464, June 2010, Suri A.; Sharma, M.M.
10. "A New Solution to Restore Productivity of Gas Wells with Condensate and Water Blocks," SPE 116711-PA, *SPE Reservoir Evaluation & Engineering*, Vol. 13, No. 2 , pp. 323-331, April 2010, Bang, V.; Pope, G.A.; Sharma, M.M.; Baran Jr., J.R.; Ahmadi, M.
11. "Entrance Pressure of Oil-Based Mud Into Shale: Effect of Shale, Water Activity, and Mud Properties," *SPE Drilling & Completion*, Vol. 25, No. 1, pp. 39-44, March 2010, Oleas, A. M.; Osuji, C.E.; Chenevert, M.E.; Sharma, M.M.
12. "Fluid Selection for Energized Hydraulic Fractures," *Journal of Petroleum Technology*, Vol. 62, No. 3, pp. 42-49, March 2010, Frieauf K.E.; Sharma, M.M.
13. "Method Optimizes Waterflood Projects," *The American Oil & Gas Reporter*, Vol. 53, No. 2, pp. 122-129, February 2010, Chaban, F.R.; Suri, A.; Sharma, M.M.; Gibson G.T.
14. "A New Compositional Model for Hydraulic Fracturing With Energized Fluids," *SPE Production & Operations*, Vol. 24, No. 4, November 2009, Frieauf, K.E.; Sharma, M.M.;
15. "PEG-Coated Reverse Osmosis Membranes: Desalination Properties and Fouling Resistance," *Journal of Membrane Science*, Vol. 340, No. 1-2, pp. 92-108, September 2009, Sagle, A.C.; Van Wagner, E.M.; Ju, H.; McCloskey, B.D.; Freeman, B.D.; Sharma, M.M.

16. "Effect of Non-Darcy Flow on Well Productivity in a Hydraulically Fractured Gas-Condensate Well," SPE 103025, *SPE Reservoir Evaluation & Engineering*, Vol. 12, No. 4, pp. 576-585, August 2009, Mohan, J.; Pope, G.A. Sharma, M.M.
17. "Effect of Crossflow Testing Conditions, Including Feed pH and Continuous Feed Filtration, on Commercial Reverse Osmosis Membrane Performance," *Journal of Membrane Science*, Vol. 345, pp. 97-109, August 2009, Van Wagner, E.M.; Sagle, A.C.; Sharma, M.M.; Freeman, B.D.
18. "PEG-Based Hydrogel Membrane Coatings," *Polymer*, Vol. 50, No. 3, pp. 756-766, January 2009, Sagle, A.C.; Ju, H.; Freeman, B.D.; Sharma, M.M.
19. "Factors Controlling the Membrane Efficiency of Shales When Interacting with Water-Based and Oil-Based Muds," SPE 100735, *SPE Drilling & Completion Journal*, Vol. 23, No. 2, pp. 150-158, June 2008, Zhang, J.; Al-Bazali, T.M.; Chenevert, M.E.; Sharma, M.M.
20. "Capillary Entry Pressure of Oil-based Muds in Shales: The Key to the Success of Oil-based Muds," *Energy Sources, Part A*, Vol. 30, No. 4, pp. 297-308, January 2008, Al-Bazali, T.M.; Zhang, J.; Chenevert, M.E.; Sharma, M.M.
21. "Capillary Wicking in Gas Wells," SPE 103229, *SPE Journal*, Vol. 12, No. 4, pp. 439-437, December 2007, Mahadevan, J.; Sharma, M.M.; Yortsos, Y.C.
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## CONFERENCE PROCEEDINGS

1. "Decreasing Water Invasion into Atoka Shale Using Non-modified Silica Nanoparticles," SPE xxxxxx, prepared for presentation at 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Cai, J.; Chenevert, M.E.; Sharma, M.M.; Friedheim, J.
2. "A Predictive Model for Sand Production in Poorly Consolidated Sands," IPTC 15087, prepared for presentation for the International Petroleum Technology conference, November 15-17, 2011, Bangkok, Thailand. Kim, S.; Sharma, M.M.
3. "Impact of Fracture Growth on Well Injectivity and Reservoir Sweep during Waterflood and Chemical EOR Processes," SPE 146778, prepared for presentation at the 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Lee, K.; Huh, C.; Sharma, M.M.
4. "A New Method for the Design and Selection of Premium / Woven Sand Screens," SPE 146656, prepared for presentation at the 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Mondal, S.; Sharma, M.M.; Hodge, R.M.; Chanpura, R.A.; Parlar, M.; Ayoub, J.A.
5. "A New Approach to Modeling Fracture Growth in Unconsolidated Sands," SPE 146309, prepared for presentation at the 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Agarwal, K.; Sharma, M.M.
6. "Strategies to Minimize Frac Spacing and Stimulate Natural Fractures in Horizontal Completions," SPE 146104, prepared for presentation at the 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Roussel, N.P.; Sharma, M.M.
7. "Selecting Candidate Wells for Refracturing Using Production Data," SPE 146103, prepared for presentation at the 2011 SPE Annual Technical Conference and Exhibition, October 30-November 2, 2011, Denver, Colorado, USA. Roussel, N.P.; Sharma, M.M.
8. "A New Approach to Modeling Fracture Growth in Unconsolidated Sands," ARMA 11-505, prepared for presentation at the 45<sup>th</sup> US Rock Mechanics / Geomechanics Symposium, June 26-29, 2011, San Francisco California, USA. Agarwal, K.; Sharma, M.M.
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## **MEETINGS CHAIRED**

Chaired sessions at several meetings, including:

- Society of Petroleum Engineers (SPE), Annual Meeting.
- American Institute of Chemical Engineers (AIChE), Annual Meeting.
- American Chemical Society.
- SPE International Oilfield Chemistry Symposium.
- Society of Core Analysts, Annual Meeting.
- American Filtration Society.

## **SHORT COURSES AND WORKSHOPS**

Taught over 100 industry courses in over 20 countries around the world.

Course topics include:

- Formation Damage
- Near Wellbore Production Problems
- Advanced Production Engineering I and II
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- Fundamentals of Petrophysics
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