

# **RESUME**

## **TAO ZHU, Ph.D.**

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### **EDUCATION**

Ph.D.	1991	Petroleum Engineering, University of Oklahoma, Norman, Oklahoma
M.S.	1986	Petroleum Engineering, University of Alberta, Edmonton, Alberta, Canada
B.S.	1970	Petroleum Engineering, Beijing Petroleum University, Beijing, China

### **PROFESSIONAL DEVELOPMENT:**

1. Thermal Recovery for Heavy Oil, SPE Short Course, Bakersfield, CA, March, 2007
2. Thermal Recovery Method, SPE Short Course, Irvine, CA, April 2 – April 3, 2005
3. Three faculty development workshops: “How to Avoid Problems with Students” on 9/7/04, “Effective Teaching” on 9/21/04, and “Audio Conference on Learning-Centered Teaching” on 9/28/04.
4. Alaska Unconventional Gas Workshop, Anchorage, Alaska, March 9-11, 2004.
5. Reserves Estimating: Common Errors and How to Avoid Them, SPE Short Course, San Antonio, TX, 28-29 Sept. 2002
6. Natural Gas Hydrates, American Association of Petroleum Geologists, Anchorage, AK, May 23, 2002.
7. Three faculty development workshops in 2001-2002: “Assessment Training” on 9/11/01, “Faculty Development Training” on 9/12/01, “Designing Test Items” on 4/7/02.
8. Alaska Coalbed and Shallow Gas Resources, by PITC West Coast Resource Center, Anchorage, AK, May 3-4, 2001.

### **PROFESSIONAL EXPERIENCE:**

2008 – Present: *Associate Professor*, The Petroleum Institute, Abu Dhabi, U.A.E.  
2005 – 2008: *Associate Professor, Tenured*, University of Alaska Fairbanks, Fairbanks, AK.  
1999 – 2005: *Assistant Professor, Tenure-track*, University of Alaska Fairbanks, Fairbanks, AK.  
1998 – 1999: *Reservoir Engineer*, Phillips Petroleum Company, Bartlesville, OK.  
1994 – 1998: *Senior Research Engineer*, BDM-Oklahoma/NIPER (National Institute for Petroleum and Energy Research), Bartlesville, OK.  
1992 – 1993: *Research Engineer*, IIT Research Institute/NIPER, Bartlesville, OK.  
1991 – 1992: *Research Associate*, Department of Petroleum Engineering, University of Oklahoma, OK.  
1987 – 1991: *Research Assistant*, Department of Petroleum Engineering, University of Oklahoma, OK.  
1983 – 1987: *Research Associate*, Dept. of Petroleum Engr., University of Alberta, Edmonton, Alberta, Canada.  
1979 – 1983: *Senior Petroleum Engineer*, Jiangsu Oil Field, CNPC (China National Petroleum Corp.), Jiangsu, China.  
1975 – 1979: *Production and Reservoir Engineer*, Jiangsu Oil Exploration Corp., CNPC, Jiangsu, China.  
1970 – 1975: *Production Field Engineer*, Qinhai Oil Field, CNPC, Qinhai province, China.

### **HONORS AND AWARDS:**

- 1) UNAC Merit Bonus Awards 2002-2003 at UAF.
- 2) Star Award from BDM Petroleum Technologies in 1997.
- 3) Doctor of Philosophy dissertation research was selected and funded by Oklahoma Mining and Mineral Research Institute in 1990.

### **PROFESSIONAL AFFILIATIONS:**

Member of Society of Petroleum Engineering (SPE)  
Member of Petroleum Engineering Honor Society, Pi Epsilon Tau

### **CURRENT RESEARCH INTERESTS:**

1. Phase behavior and PVT analysis, including wax deposition and prevention,
2. Oil & gas production decline analysis,
3. Enhanced oil recovery technology including thermal and non-thermal heavy oil recovery, and miscible and immiscible recovery process,
4. Applied reservoir engineering and reservoir simulation, and
5. CO<sub>2</sub> sequestration and hydrates, and Natural gas recovery technology.

## RESEARCH ACTIVITIES

### Research Grants Received at UAF

- 1) "Comparative Assessment of Advanced Gas Hydrate Production Methods," Funded by the National Energy Technology Laboratory (NETL)/Department of Energy (DOE), Sept. 2006 (2-year project, Oct. 1, 2007 – Sept. 30, 2009) for a total of \$746,590 with PIs: T. Zhu (UAF), and B. Peter McGrail and Mark White (Battelle Pacific Northwest Division).
- 2) "Evaluation of Wax Deposition and its Control during Production of Alaska North Slope Oils," Funded by the Arctic Energy Technology Development Laboratory (AETDL)/Department of Energy (DOE), Aug. 2005 (3-year project, Oct. 1, 2005 – Sept. 30, 2008) for a total of \$1,754,340 with PI: T. Zhu; Co-PIs: Jack Walker (ConocoPhillips Alaska, Inc.); and J. Liang (University of Kansas).
- 3) "A Feasibility Study for Injection of CO<sub>2</sub> for Recovery of Methane from Gas Hydrate Reservoirs," Funded by the Arctic Energy Technology Development Laboratory (AETDL)/Department of Energy (DOE), April 2002 (Jan. 2003 – Dec. 2006, 4-year project for a total of \$1,440,732 with PI: T. Zhu; Co-PIs: B. Peter McGrail (Pacific Northwest National Laboratory (PNNL)); Robert B. Hunter (BP Exploration (Alaska), Inc. (BPXA))).
- 4) "Coalbed Methane for Rural Alaska: Application of New Technologies to Explore and Produce Energy," Funded by US DOE thru Arctic Energy Technology Development Lab (AETDL), Sept. 1, 2003 – Sept. 30, 2006 (\$2,035,710 with PI: D.O. Ogbe; Participating Scientist: T. Zhu).
- 5) "Road Map for producing Alaska's Coalbed & Tight Sands," funded by Research Partnership to Secure Energy for America (RPSEA), September 1, 2003 - September 30, 2004, (\$338,557 with PI: D.O. Ogbe; Participating Scientist: T. Zhu).
- 6) "Measurement of Permeability and Assessment of Formation Damage in a Shallow Gas Reservoir," funded by Alaska Division of Geological & Geophysical Surveys, September 1, 2002 - June 30, 2003, (\$40,000 with PI: D.O. Ogbe; Co-PI: T. Zhu), UAF Unit Proposal # PDL 02-33.
- 7) "Solvent-Based Enhanced Oil Recovery Methods For Producing Heavy Oil From West Sak and Ugnu Alaska North Slope." Funded by US Department of Energy, 2001 (\$153,000 with PI: D.O. Ogbe; Co-PI: T. Zhu).
- 8) "Reservoir Simulation of Alpine Oil Pool, Located On North Slope of Alaska and Reservoir Modeling of the Alpine Pool, Alaska." Funded by Alaska Oil and Gas Conservation Commission, 1999-2001 (\$105,000 with PI: Ogbe; Co-PI: T. Zhu).

## RESEARCH EXPERIENCE:

### I. CO<sub>2</sub> Sequestration and Hydrates, and Methane Hydrate and Recovery

Developed a research project to study injection of CO<sub>2</sub> for recovery of methane from gas hydrate reservoirs. This US DOE funded project is to study a novel method to recover methane from gas hydrates that uses CO<sub>2</sub> to extract methane gas while simultaneously forming a CO<sub>2</sub> hydrate. The economic value of future methane gas hydrate expected to be obtained via this approach may allow marginal resources to be developed as economic reserves. Additionally, refilling pore space with CO<sub>2</sub> hydrate is expected to maintain the mechanical stability of gas producing sediments, thus enhancing safety during gas production from both terrestrial and marine environments.

#### Achievements:

1. Research proposal, "A Feasibility Study for Injection of CO<sub>2</sub> for Recovery of Methane from Gas Hydrate Reservoirs", was funded by the Arctic Energy Technology Development Laboratory (AETDL)/Department of Energy (DOE) in April 2002 in 3-year project for a total of \$1,440,732.
2. Research proposal, "Comparative Assessment of Advanced Gas Hydrate Production Methods," was funded by the National Energy Technology Laboratory (NETL)/Department of Energy (US DOE), Sept. 2006 (2-year project, Oct. 1, 2007 – Sept. 30, 2009) for a total of \$746,590 with PIs: T. Zhu (UAF), and B. Peter McGrail and Mark White (Battelle Pacific Northwest Division).

### II. Reservoir Engineering and Applied Reservoir Simulation

Performed detailed reservoir characterization studies within Department of Energy (DOE) sponsored programs which involved obtaining field data from industry sources. Data developed through these reservoir efforts were being used for geological and fluid flow models to support improved oil recovery (IOR) and infill drilling.

Performed decline curve analysis for Ambrosial oil field (Phillips Petroleum Company) in Venezuela, which involved in decline exponent "b" and decline rate "d" analysis. Reservoir simulations were conducted with two oil fields in Prudhoe Bay, Alaska to develop waterflood and gas injection predictive model. Work included analyzing reservoir production data and performing the numerical simulation to optimize the reservoir performance with EOR process such as water flooding, miscible and immiscible gas injection, and polymer flooding.

**Achievements:**

1. Completed reservoir simulation study of the Alpine Oil Pool, North Slope, Alaska, 1999-2001.
2. Developed a method for permeability modification to prevent/reduce crossflow in reservoir formations which has been included in an improved modeling program co-written by Schlumberger & BDM in 1998.

**III. Enhanced Oil Recovery and Phase Behavior Study**

Conducted research in mobility control, profile modification, and sweep efficiency improvement in miscible and immiscible gas flooding. Research experiences included studies of polymer gel deep placement into reservoirs, foams for mobility control and improved sweep efficiency in gas flooding. Investigated the effect of heterogeneity on polymer retention in sandstone cores at residual oil saturation. Responsibility also included fundamental research in displacement mechanisms for miscible and immiscible gas flooding.

Developed a new approach using microbial gelled biopolymer for permeability modification and profile improvement. Responsibility included investigation of sweep improvement for microbial gelled systems, and the implementation of two microbial-enhanced waterflood field pilots.

Phase behavior study including PVT lab study, compositional analysis, and live oil WAT (wax apparent temperature) measurement by CPM (cross polar microscope). Also involved in EOS modeling to determine the multi-phase behavior.

**Achievements:**

1. Research proposal, "Evaluation of Wax Deposition and its Control during Production of Alaska North Slope Oils," was funded by AETDL/US DOE, Aug. 2005 (3-year project, Oct. 1, 2005 – Sept. 30, 2008) for a total of \$1,754,340 with PI: T. Zhu;
2. Research proposal, "Foams for Mobility Control and Improved Sweep Efficiency in Miscible and Immiscible Gas Flooding", was funded by U.S. Department of Energy (DOE) in 1994; and
3. Research proposal, "Profile Modification and Improved Sweep Efficiency Using Induced Chemical Precipitation for CO<sub>2</sub> Gas Flooding", was funded by DOE in 1992.

**TEACHING EXPERIENCE:**

The teaching experience at UAF is summarized in the following.

1. PETE 301, "Reservoir Rock and Fluid Properties," Undergraduate Junior, Fall semester 1999.
2. PETE 303, "Reservoir Rock and Fluid Properties (Lab.)," Undergraduate Junior, Spring 2000.
3. PETE 407, "Petroleum Production Engineering," Undergraduate Senior, Fall 1999, 2000, 01, 02, 03, 04, 05 and 06, and Spring 2001
4. PETE 421, "Reservoir Characterization," Undergraduate Senior, Spring 2000, Spring 2002
5. PETE 431, "Natural Gas Engineering," Undergraduate Senior, Fall 2001
6. PETE 476, "Petroleum Reservoir Engineering," Undergraduate Senior, Spring 2001, 02, 03, 04, 05, 06 and 07
7. PETE 630, "Waterflooding," Graduate, Fall 2001, 2004 and 2005
8. PETE 662, "Enhanced Oil Recovery," Graduate, Fall 2002 and 03, and Spring-2004, 05 and 07.
9. PETE 683, "Natural Gas Production and Process Engineering," Graduate, Fall 2006.
10. PETE 670, "Fluid Flow Through Porous Media," Graduate, Fall 2000 and 2007.

The teaching experience at PI is as the following.

1. PEEG 314, "Well Logging," Undergraduate Junior, Fall 2008.
2. PEEG 510, "Advanced Well Testing," Graduate, Fall 2008.

**PROFESSIONAL INDUSTRIAL EXPERIENCE:**

**I. Reserve Estimation and Formation Evaluation** (BDM-Oklahoma/NIPER, Bartlesville, OK; Phillips Petroleum Company, Bartlesville, OK; CNPC, China)

Responsible for the reservoir performance analysis and formation evaluation for feasibility study of several enhanced oil recovery projects in the Subei Basin (CNPC). The analysis included the integration of all reservoir, geological, cased-hole log, formation test, core analysis, fluid, pressure, production, and injection data. Reservoir evaluation activities also included performing material balance calculations, subsurface mapping, volumetric reserve estimations, estimations of anticipated waterflood response.

## II. Oil and Gas Production and Operations (CNPC, China)

Responsible for the production and operations of two major oil and gas fields in northwest and southeast part of China. The responsibility includes day-to-day oil & gas production operations and maintaining. Supervising infill drilling and re-completion programs, reservoir engineering and reserve analysis, planning and implementing secondary and enhanced oil recovery projects. Also involved in oil and gas production facilities designing and implementation.

## III. Field Experience in Artificial Lift, Well Completion, Stimulation, and Workover (CNPC, China)

**Beam Pumping Design and Analysis** included the design and implementation of the sucker rod pumping system. The field experience involved in optimizing pump size, design and selection of surface and subsurface equipment. Work also includes the evaluation of efficiency for a beam pump system, analysis and interpretation of dynamometer card data, and beam pumping system trouble shooting.

**Gas Lift Design and Analysis** including the design and installations of a gas lift system, design and selection of surface and subsurface equipment, and selection of gas lift parameters. The field experience in gas lift involves optimum of gas lift systems such as location of the top valve, injection gas pressure and volume, and spacing of gas lift valves. The experience also involves the selection of compressor systems, operation and analysis of gas lift, and trouble shooting.

**Completion, Stimulation, and Workover:** Experience includes designing and supervising well completion, recompletion, and workover projects such as squeeze cementing, sand control, and down-hole equipment such as production packers and other sub-surface system replacement. Supervised casing design and cementing job design. Work also involved hydraulic fracturing and acidizing.

## SERVICE:

### I. University of Alaska Fairbanks (UAF)

- UAF SPE Faculty Advisor, May 2006 – May 2007
- Undergraduate student Advisor, 1999-present.
- Graduate Committee, 2002-present: Served in 26 M.S. Committee, 2004-present, Chaired 1 Ph.D. Committee, 2005-2006, Chaired 15 M.S. Committee, 2005-present,
- Served in Self Study-Outcome Assessment Committee, 2001-2004
- Initiated and participated in UAF undergraduate recruiting program from the University of Petroleum China, 2004-2008.
- Native Language Education Program Review Committee member, Sept. 2005 – May 2006
- Served as member in the University Curriculum Council Committee, 2004-May 2007.
- Served as chair in the CEM Curriculum Council Committee, 2004-May 2007.
- Served in the Governance Coordinating Council's Permanent Committee of Diversity and Tolerance, 2002-2008.
- Served in the Program Review Committee of BS, MEE, MSEE in Electrical Engineering, 2002-2003.
- Served in the following SME/University committees: SME Curriculum Council Committee, 1999-2004; SME Ph.D. Program Committee, 2002-2004; SME Banquet committee, 2001-2002; PETE Program Review Committee, 2002.
- Served in several Petroleum Engineering Dept. Faculty Search Committee in 2000, 2001, 2002, and 2007
- Re-evaluate PETE and MIN/GE Curriculum Committee, 2002.

### II. External

- Proposal review for ACS (American Chemical Society) Petroleum Research Fund, July 2007
- Served as a Chair for Oral Session: Foams for Improved Oil Recovery, SPE 2006 Improved Oil Recovery Symposium, April 22-26, 2006, Tulsa, Oklahoma.
- Served as Technical program committee member for 2006 SPE Western Regional/AAPG Pacific Section/GSA Cordilleran Section Joint Meeting, Anchorage, AK, May 8-10, 2006.
- Served as Chair for Oral Session: "Improved Oil Recovery and Reservoir Management," 2006 SPE Western Regional/AAPG Pacific Section/GSA Cordilleran Section Joint Meeting, Anchorage, AK, May 8-10, 2006.
- Technical program committee member of the 40th S.A.M.E. US Rock Mechanism Symposium-Alaska in June 25 - 29 2005.
- Technical program committee member for Developing Alaska Coalbed Methane and Shallow Gas Resources committee, 2004.

- Supervising graduate student paper competition at SPE Western Regional Meeting, Bakersfield, CA, March 16-18, 2004, paper title: "Study of Kinetics of Carbon Deposition for Natural Gas Transportation under High Temperature," presented by A.S. Kulkarni.
- Organizing committee member for 2004 Alaska Unconventional Gas Workshop, Anchorage, AK, March 9-11, 2004.
- Reviewer of technical papers for "Journal of Petroleum Science and Engineering" in 2004.
- Served in registration committee for 2002 SPE/DOE Improved Oil Recovery Symposium, Tulsa, OK, 13-17 April.
- Served as a committee member for Graduate Student Research Committee (M.S.) of the University of Oklahoma graduate program in petroleum engineering in Algeria in 2001, 2002, 2003, 2004, 2005, and 2006
- Served as a Session Chair for SPE Oral Session: Reservoir Characterization and Reservoir Mechanisms in SPE Western Regional Meeting, Anchorage, AK, May 18-22, 2002.
- Reviewer of technical papers for SPEJ (Society of Petroleum Engineers Journal) in 2002.
- Reviewer of technical papers for "Journal of Petroleum Science and Engineering" in 2002.
- Reviewer of technical papers for "Journal of Canadian Petroleum Engineering" in 2000.
- Served in registration committee for 2000 SPE/DOE Improved Oil Recovery Symposium, Tulsa, OK, 2-5 April, 2000

## PUBLICATIONS

### I. Peer-Reviewed Journal Articles

1. McGrail, B. P., S. Ahmed, H. T. Schaefer, A. T. Owen, and T. Zhu. "Gas Hydrate Property Measurements in Porous Sediments With Resonant Ultrasound Spectroscopy." *Journal of Geophysical Research*, Vol.112, BO 5202, 5 May, 2007.
2. Zhu, T., D. Tiab, N. Noureddine, and H. Phale: "Evaluation of Hydraulic Fracturing and Re-entries in the Hassi-Messoud Field, Algeria," *World Journal of Engineering*, Vol. 2, No. 4, December 2005, pp 93-102.
3. Zhu, T., D. Tiab, S. Manseur, and H. Phale: "Horizontal and Vertical Permeability Determination in Clean and Shaly Reservoirs Using Well-Log Data," *World Journal of Engineering*, Vol. 2, No. 2, June 2005, pp 81-95.
4. Zhu, T., D.O. Ogbe, and S. Khataniar: "Improving the Foam Performance for Mobility Control and Improved Sweep Efficiency in Gas Flooding," *Journal of Industrial & Engineering Chemistry Research*, July, 2004, Vol. 43, No. 15, pp4413-4421.
5. Zhu, T., A.S. Kulkarni, S. Meurer, and H. Liang: "Kinetics of Carbon Deposition for Natural Gas Transportation under High Temperature," *World Journal of Engineering*, Vol. 1, No. 1, August 2004, pp 65-74.
6. Zhu, T. and S. Bailey: "Microorganism Triggered Biopolymer Gels for Permeability Modification in Petroleum Reservoirs," *World Journal of Engineering*, Vol. 1, August 2004, pp 82-90.
7. S. Khataniar, G.A. Chukwu, T. Zhu, and C.I. Agbaraji: "The Evolution of Petroleum Engineering Education," *Journal of Petroleum Technology*, August 2002, Vol. 54, No. 8, pp12-14.
8. Zhu, T., D. Wang, D. Chen, and F. Bao: "Gas-/Steam-Slug Flooding Enhances Recovery from a Medium-Heavy-Oil Reservoirs," *Journal of Petroleum Technology*, June 2000, Vol. 52, No. 6, pp 65-66.
9. Zhu, T., and D. Tiab: "Multi-point Interface Test in a Single Horizontal Well," *Journal of SPE Formation Evaluation*, Dec. 1994.
10. Zhu, T., and D. Tiab: "Improved Sweep Efficiency by Selective Plugging of Highly Watered Out Zones by Chemical Induced Precipitation," *Journal of Canadian Petroleum Technology*, Nov. 1993, Vol. 32, No. 9, p. 37-43.
11. Rojas, G. A., T. Zhu, S. B. Dyer, S. Thomas, and S. M. Farouq: "Scaled Model Studies of CO<sub>2</sub> Floods," published in the *SPE Reservoir Engineering*, May 1991.

### II. Conference Presentation and Proceedings

1. Zhu, T., D. Tiab, and C. Merdaci, "A Simulation Study of Performance Miscible Displacement in El Gassi Field, Algeria", paper SPE 111412, presented at the 2007 SPE/EAGE Reservoir Characterization and Simulation Conference held in Abu Dhabi, U.A.E., 28-31 October 2007.
2. Zhu, T., D. Tiab, and H. Adel, "Effect of Gas Recycling on the Enhancement of Condensate Recovery, Case Study: Hassi R'Mel South Field, Algeria", paper SPE 104040, presented at the 2006 International Oil Conference and Exhibition in Mexico, Cancun, Mexico, August 30 - September 2, 2006.
3. Phale H. A., Zhu, T., White, M.D., and McGrail, B.P., "Simulation Study on Injection of CO<sub>2</sub>-microemulsion for Methane Recovery from Gas-Hydrate Reservoirs", paper SPE 100541, presented at the SPE Gas Technology Symposium held in Calgary, Canada, May 15 - 18, 2006.
4. J.A. Walker, D.O. Ogbe, and T. Zhu, "U.K. North Sea and Alaska North Slope: A Comparative Analysis of Petroleum Provinces," paper SPE 100607, presented at the 2006 SPE Western Regional/AAPG Pacific Section/GSA Cordilleran Section Joint Meeting, Anchorage, AK, May 8-10, 2006.

5. Bhangale, A.Y., Zhu, T., McGrail, B.P. and White, M.D., "A model to predict hydrate equilibrium and hydrate saturation inside porous media including mixed CH<sub>4</sub>-CO<sub>2</sub> hydrates", paper SPE 99759 presented at 2006 SPE-Improved Oil Recovery Symposium, Tulsa, Oklahoma, April 22-26, 2006.
6. B. P. McGrail, H. T. Schaefer, M. D. White, A. T. Owen, T. Zhu, and R. B. Hunter: "Enhanced Gas Hydrate Recovery with CO<sub>2</sub> Sequestration," AAPG Annual Convention, Calgary, Canada, June 20, 2005.
7. Zhu, T. and Xutao Huang: "Downhole Harmonic Vibration Oil-Displacement System: A New IOR Tool," paper SPE 94001 presented at the AAPG/SPE Western Regional Meeting, Irvine, CA, March 30 – April 1, 2005.
8. Zhu, T., B. P. McGrail, A. Kulkarni, M. D. White, H. Phale, S. Patil, D. Ogbe: "Development of a Thermodynamic Model and Reservoir Simulator for the CH<sub>4</sub>, CO<sub>2</sub>, and CH<sub>4</sub>-CO<sub>2</sub> Gas Hydrate System," paper SPE 93976 presented at the AAPG/SPE Western Regional Meeting, Irvine, CA, March 30 – April 1, 2005.
9. B. P. McGrail, T. Zhu, R. B. Hunter, M. D. White, S. L. Patil, and A. S. Kulkarni: "A New Method for Enhanced Production of Gas Hydrates with CO<sub>2</sub>," paper presented at AAPG HEDBERG Conference, September 12-16, 2004, Vancouver, BC, Canada.
10. M. Deshpande, D.O. Ogbe, T. Zhu and S.L. Patil: "Evaluation of Well Performance to Optimize Horizontal and Unconventional Wellbore Configurations," paper SPE 88913 presented at the 28th Annual SPE International Technical Conference and Exhibition in Abuja, Nigeria, August 2-4, 2004.
11. Xingru Wu, D.O. Ogbe, T. Zhu, S. Khataniar: "Critical Design Factors and Evaluation of Recovery Performance of Miscible Displacement and WAG Process," paper 2004-192 presented at the Petroleum Society's 5<sup>th</sup> Canadian International Petroleum Conference (55<sup>th</sup> Annual Technical Meeting), Calgary, Alberta, Canada, June 8-10, 2004.
12. Wu, X., D.O. Ogbe, T. Zhu, S. Khataniar: "Design Considerations and Evaluation of Recovery Performance of Miscible Displacement and WAG Process," paper presented at 54th Arctic Science Conference, Fairbanks, Alaska, 22–24 September 2003.
13. M. Deshpande, D.O. Ogbe, T. Zhu and S.L. Patil: "Evaluation of Well Performance to Optimize Horizontal and Unconventional Wellbore Configurations," poster presented at 54th Arctic Science Conference, Fairbanks, Alaska, 22–24 September 2003.
14. Zhu, T., S. Mansour, D. Tiab, and A. Berkat: "Horizontal and Vertical Permeability Determination in Clean and Shaly Reservoirs Using In-situ Measurements," paper SPE 76773 presented at the AAPG/SPE Western Regional Meeting, Anchorage, AK, May 20-22, 2002.
15. Agbaraji, C.I., S. Khataniar, G.A. Chukwu and T. Zhu: "Perspective on The Evolution of Petroleum Engineering Education in The New Millennium," paper SPE 76774 presented at the AAPG/SPE Western Regional Meeting, Anchorage, AK, May 20-22, 2002.
16. Zhu, T., N. Raahmouni, D. Tiab, A. Mazouzi and F.H. Escobar: "Evaluation of Hydraulic Fracturing and Re-Entries in The Hassi-Messaoud Field (Algeria)," paper SPE 76775 presented at the AAPG/SPE Western Regional Meeting, Anchorage, AK, May 20-22, 2002.
17. Ferhat Zelghi, D. Tiab, and T. Zhu: "Application of Decline Curve Analysis in Gas Reservoir Using a Newly Developed Fitting Equation," SPE Gas Technology Symposium, Calgary, Alberta, Canada, 30 April - 2 May 2002.
18. Bengherbia Mourad, D. Tiab and T. Zhu: "Gas-Condensate Well Performance Using Compositional Simulator – A Case Study," SPE Gas Technology Symposium, Calgary, Alberta, Canada, 30 April - 2 May 2002.
19. Fateh Meddahi, D. Tiab and T. Zhu: "Acidizing Performance in the Hassi R'Mel Field, Algeria," SPE Gas Technology Symposium, Calgary, Alberta, Canada, 30 April - 2 May 2002.
20. Zhu, T., D. Wang, D. Chen, and F. Bao: "Gas/Steam Slug Flooding To Enhance the Recovery of Medium Heavy Oil Reservoirs," paper submitted for presentation at the SPE/DOE Improved Oil Recovery Symposium in Tulsa, April 3-5, 2000.

#### IV. Newspaper Articles

1. Paul Metz, Gang Chen, Scott Huang and Tao Zhu: "Petrochemical Industry would have big economic impact on Alaska," Petroleum News, Vol.9, No. 29, week of July 18, 2004.
2. B. P. McGrail, H. T. Schaefer, M. D. White, T. Zhu, and R. B. Hunter: "Enhanced Gas Hydrate Recovery with CO<sub>2</sub> Sequestration," AAPG Annual Convention, Calgary, Canada, June 20, 2005.