

Profile:

- 10 years of cumulative Research and Teaching experience in Petroleum and Chemical Engineering fields.
- Strong experience in Proposing state of the art research, Designing and Building experimental facilities, Developing Standard Operating Procedures (SOP), Conducting experiments and Analyzing the results, Publishing peer reviewed journal papers, Reviewing international journal papers, and filing Patents.
- Proficient in using state of the art instrumentation for measuring Rock & Fluid Properties, Interfacial Properties, Multiphase Separation and Metering, at Reservoir and/or Field conditions.
- Experience in Equilibrium Multiphase Modeling.

Qualifications:

- Statement of Accomplishment, **Reservoir Geomechanics (online course), Stanford University**, Grade: 100%
- **Ph.D. in Petroleum Engineering**, The University of Tulsa, GPA: 4.0/4.0
Dissertation Topic: Interfacial Phenomena in Oil-Water-Sand Dispersions
- **Master of Technology in Chemical Engineering** (specialization in Petroleum Refinery Engineering), Indian Institute of Technology, Guwahati, India, GPA: 8.59/10
Thesis: Surfactant Mediated Enhanced Oil Recovery
- **Bachelor of Technology in Chemical Engineering**, National Institute of Technology, Warangal, India, Aggregate percentage: 1st division with distinction
- **Diploma in Chemical Engineering**, Jawaharlal Nehru Government Polytechnic, India
Aggregate percentage: 1st division

Professional Work Experience:

- **Postdoc Fellow in Energy Frontier Research Center at Lawrence Berkeley National Laboratory** from July 3rd 2013
- **Professional Internship at Chevron Energy Technology Company** from 4th June 2012 to 31st August 2012
- **Reviewer for the international journals** 'Petroleum Science and Technology', 'Desalination', 'Separation Science & Technology', Environmental Science & Technology, Journal of Petroleum and Gas Engineering, and 'Toxicological & Environmental Chemistry', 'Colloids and Surfaces A: Physicochemical and Engineering Aspects', 'Energy & Fuels', 'International Journal of Greenhouse Gas Control' and 'water resources research'
- **Research Assistant in the Tulsa University Separation Technology Projects (TUSTP) from Summer-2010 to Spring 2013.**
- **Teaching (TA) Rock & Fluid Properties Lab** in the Petroleum Engineering Department of University of Tulsa from August 2007 to May 2012
- **Research Assistant in the Rock and Fluid Properties Lab** during the Summer-2008 to design experimental facilities for the Undergraduate Lab
- **Research Student in the R&D and Chemical Departments of Oil India Limited** during Summer-2006; Successfully conducted an EOR project
- **Teaching Assistant and Researcher** for two years (July 2004 – May 2006) in the Indian Institute of Technology, Guwahati
- **Internship at VOLTAS LIMITED CHEMICALS PLANT, India (11th May 1998 to 10th Nov1998).** An exhaustive study is made on chemical recovery, energy conservation aspects of effluent handling
- **Internship at HYDERABAD BATTERIES LTD, India (4th OCT 1997 to 3rd April 1998).** As it was the first industrial exposure to me, I explored the practical aspects of Chemical Engineering and applied my theoretical knowledge of mass and energy balances

Publications and Patents:

- Prem K. Bikkina, R. Uppaluri, D. S. De, M. K. Purkait (2011), **Surfactant Composition and Method for Enhanced Oil Recovery Utilizing above Aqueous Surfactant Composition, Indian Patent 245703**, Date of Publication of Granted Patent: 04/02/2011
- Prem K. Bikkina, Ram S. Mohan, Ovadia Shoham, Luis Gomez, Hariprasad J. Subramani, and Gene Kouba (2012), **Design and Experimental Procedure of Solid Particle Surface Energy Measurement**, filed for a *US Patent* on August 1st, 2013.
- Prem K. Bikkina (2006), **Surfactant mediated Enhanced Oil Recovery**, *M.Tech Thesis*, May 2006, IIT Guwahati, India.
- Prem K. Bikkina (2006), **A Methodology for the Economic Feasibility of Candidate Surfactants for Enhanced Oil Recovery**, *Initiation for Research and Innovation in Science (IRIS)*, December 2006, New Delhi, India.
- Bikkina, P. K., Uppaluri, R., Purkait, M. K. (2013). **Evaluation of Surfactants for the Cost Effective Enhanced Oil Recovery of Assam Crude Oil Fields**, *Petroleum Science and Technology*, 31(7), 755-762.
- Prem K. Bikkina, R. Uppaluri, O. Shoham (2011), **Equilibrated Interfacial Tension Data of CO₂-Water System at High Pressures and Moderate Temperatures**, *Journal of Chemical & Engineering Data*, 56 (10), 3725-3733.
- Prem K. Bikkina (2011), **Contact angle measurements of CO₂-water-quartz/calcite systems in the perspective of carbon sequestration**, *International Journal of Greenhouse Gas Control*, 5(5), 1259-1271.
- Prem K. Bikkina, O. Shoham, and R. Uppaluri, **Effect of Repeated Exposure on Contact Angle for CO₂-water-Quartz/Calcite Systems**, *AIAA/ASME Oklahoma Symposium XXXI*, April 9, 2011, Norman, OK.
- Prem K. Bikkina, J. Schoeffler, O. Shoham, and R. Uppaluri, **Determination of IFT data of CO₂-Water System to aid carbon sequestration studies**, *AIAA/ASME Oklahoma Symposium XXXI*, April 9, 2011, Norman, OK.

- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, C. Avila, and G. Kouba, **Dispersion Characterization of Crude Oil - Water/Brine Emulsions**, *AIAA/ASME Oklahoma Symposium XXXII*, March 10, 2012, Tulsa, OK.
- Prem K. Bikkina (2012), **Reply to the comments on “Contact angle measurements of CO₂-water-quartz/calcite systems in the perspective of carbon sequestration”**, *International Journal of Greenhouse Gas Control*, Volume 7, 263-264.
- Prem K. Bikkina, Yi Zhang, L. Gomez, R. Mohan, O. Shoham, and C. Avila, **Effect of Process Parameters on Dispersion Characterization of Crude Oil-Water/Brine Emulsions**, *1st International Conference on Upstream Engineering and Flow Assurance, AICHE*, April 3, 2012, Houston, TX.
- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, C. Avila, and G. Kouba, **Experimental Investigation on the Crude Oil-Water/Brine Emulsions**, *13th International Conference on Petroleum Phase Behavior and Fouling*, June 10-14, 2012, St. Petersburg Beach, Florida.
- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, H. Subramani, and G. Kouba, **Effect of Solid Particle Size and Wettability on the Stability of Oil-Water-Solid Particles Emulsions**, *2013 Early Career Technical Conference (ECTC)*, ASME Southwest and Rocky Mountain District E, Oral Roberts University, Tulsa, OK (Accepted for publication).
- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, C. Avila, and G. Kouba, **Emulsion Stability Analysis through Droplet-Interface Coalescence Time Measurement**, *2013 Early Career Technical Conference (ECTC)*, ASME Southwest and Rocky Mountain District E, Oral Roberts University, Tulsa, OK (Accepted for publication).
- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, H. Subramani, and G. Kouba, **Analysis of Solid Particle Size and Wettability on the Oil-Water-Solid Particles Emulsion Stability**, *AIAA/ASME Oklahoma Symposium XXXIII*, March 30, 2013, Tulsa, OK.
- Prem K. Bikkina, L. Gomez, R. Mohan, O. Shoham, C. Avila, and G. Kouba, **Prediction of O/W Emulsion Stability Through Droplet-Interface Coalescence Time Measurement**, *AIAA/ASME Oklahoma Symposium XXXIII*, March 30, 2013, Tulsa, OK.
- Wan, J., Y. Kim, Prem K. Bikkina, T.K. Tokunaga, and S. Wang, Wetting behavior of supercritical CO₂ and brine on mica surfaces and in silica pores, *NCGC Workshop, Lawrence Berkeley National Laboratory*, October 31, 2013.
- Prem K. Bikkina, **The Effect of Repeated Shaking on the Stability of Oil-Water Emulsions**, *EFRC Junior Scientist Meeting, Lawrence Berkeley National Laboratory*, Feb 5, 2014

Accolades:

- Publications are cited/referred in journal papers from **DOE**, and **NETL**
- Inducted into **The Honor Society of Phi Kappa Phi**
- Member in **Society of Petroleum Engineers (SPE)**, **Carbon Capture Journal**, **ACS**, **AICHE**, and **ASME**
- Awarded **Distinguished PhD Students-Chapman Fellowship**
- Awarded recognition for **Initiation of Research and Innovation in Science (IRIS-2006)** competition - Project title ‘Cost Effective Surfactant Compositions for the Enhanced Recovery of Crude Oil from Assam Reservoirs’
- **Invented** a ‘Low Cost Tailor-Made Enhanced Oil Recovery Surfactant Composition for Assam Crude Oil’ and it is published for **Indian Patent**
- **Attended** international conference, **Petrotech-2005**, as a **representative of IIT Guwahati**
- Secured **1st Rank** (out of around 100 students) in the admission test conducted by **IIT Guwahati**
- Secured **State 9th Rank** in ECET-99
- Secured **State 79th Rank** (out of around 1, 00,000 students) in CEEP-95

Computer Skills:

Programming	: C, MATLAB, FORTRAN-77
Packages	: Polymath, Aspen Plus (basics), GAMS, UTCHEM, THEN, Eclipse (basics), PIPESIM, CANTYVISIONCLIENT [®] , FBRM [®] and PVM [®]
Web Technologies	: HTML
DBMS	: Oracle 9i

Extra and Co-Curricular Activities:

- **Volunteered** in SME-Mini Math contest conducted by **Tulsa Engineering Foundation** in April 2011 and 2012.
- **Served as a Judge** Engineering Design and Development Presentations at **TULSATECH** for the year 2011.
- Selected to represent the students of petroleum engineering at the TU Petroleum Engineering Department’s 2010 **Industry Advisory Board (IAB) Meeting**.
- **Served as a Judge** in the **14th Annual Student Research Colloquium**, University of Tulsa.
- **Certified OSHA Training** Courses for Chemical Hygiene, Lab Standards, Compressed Gas Cylinders, Bloodborne Pathogens, and Asbestos modules.
- Instructed **YOGA**.
- Interested in Reading books, Astronomy, Peg system, and Kaprekar Numbers.

Specific Areas of Interest

- ❖ Carbon Sequestration, CO₂ based Enhanced Oil Recovery, Alkaline Surfactant Polymer Flooding (EOR), Phase Equilibrium Modeling, Characterization of Oil-Water-Sand Dispersions, Multiphase Separations, and Hydraulic Fracturing.