

Curriculum Vitae of the Dr. Vikas Mahto, Associate Professor

- 1. Name** Dr. Vikas Mahto
- 2. Fathers Name** Shri Dinbandhu Mahto
- 3. Current Position and Address:** Associate Professor,
Department of Petroleum Engineering
Indian School of Mines, Dhanbad-826004
(Jharkhand)

4. Academic Qualifications

Sl. No.	Degree	Institute/University	Year of Passing	Division
1	B.Tech (Chemical)	H.B.T.I. Kanpur, U.P.	1996	First
2	M.Tech (Chemical)	N.I.T. Warangal, A.P.	1999	First
3	Ph.D (Petroleum)	I.S.M. Dhanbad, Jharkhand	2004	

Title of M.Tech Dissertation Work: Modelling and simulation of biodegradation of phenolic compounds in a fluidized bed bioreactor

Title of the Ph.D. Work: Development of environmentally safe water based oil well drilling fluids and its effect on formation damage

5. Work Experience

Sl. No	Organization	Designation	Period
1	I.S.M. Dhanbad	Senior Research Fellow	21.06.2000 to 30.04.2003
2	B.I.T. Sindri	Part Time Lecturer	24.06.2003 to 30.06.2004
3	B.I.T. Sindri	Lecturer (on contract basis)	01.07.2004 to 31.09.2004
4	I.S.M. Dhanbad	Lecturer (on contract basis)	11.10.2004 to 05.02.2007
5	I.S.M. Dhanbad	Assistant Professor	06.02.2007 to 05.02.2010
6	I.S.M. Dhanbad	Associate Professor	06.02.2010 to Till date

6. Administrative Position Held at I.S.M. University Dhanbad

S. No.	Position	From	To
1.	N.S.S. Programme Co-ordinator	July 2008	Till date
2.	Warden (Emerald Hostel)	April 2005	March 2007

7. Responsibilities in Petroleum Engineering Department

- i) Faculty Advisor of Petroleum Engineering Department
- ii) Organising Secretary of I.S.M. Petroleum Engineering Society
- iii) Treasurer of I.S.M. Petroleum Engineering Society
- iv) Lab- in -charge of Drilling Fluid and Cement Slurry Laboratory
- v) Lab- in -charge of Enhanced Oil Recovery Research Laboratory

8. Area of Specialization: Computer Aided Process and Equipment Design, Chemical Process Modelling and Simulation, Drilling Fluid Engineering, Oil Well Completion Design, Work over and Stimulation, Sand Control, Artificial Lift Techniques and Well Test Analysis

9. Research Interest: Drilling Fluid Design and analysis, Applications of Nano particles and Nano fluids for different oil field operations, Water shut off jobs and conformance control, Flow assurance problems in the oil fields, Artificial Lift System Design and Analysis

10. Courses Taught (B.Tech & M.Tech Degree)

1. Chemical Engineering Thermodynamics
2. Chemical Engineering Drawing
3. Material of Construction and Metallurgy
4. Mathematical Methods and Computer Applications
5. Process Equipment Design (Chemical Engg.)
6. Petroleum Production Equipment Design
7. Petroleum Engineering Operational Design
8. Artificial Lift Techniques
9. Petroleum Refining and Petrochemicals
10. Drilling Fluids and Cements
11. Energy Management and Policy
12. Workover and stimulation
13. Petroleum Production Operations
14. Elements of Production Engineering
15. Well Test Analysis

11. No. of M.Tech/Ph.D supervised/supervising: 10

12. Honours and Awards

- i) Recipient of **Institute Academic Merit Scholarship** at H.B.T.I. Kanpur for consecutive two years (1993-95)
- ii) Awarded **MHRD Fellowship (1997-1999)** during my M.Tech Programme for qualifying GATE 2007.
- iii) Awarded **Senior Research Fellowship (2000-2003)** by Council of Scientific and Industrial Research, New Delhi during Ph.D. Programme.
- iv) Awarded **“KARMASHEEL”** for excellent organizational capability in the year 1995 by National Service Scheme H.B.T.I. Kanpur
- v) Achieved Certificate from Government of Andhra Pradesh for active participation in **JHANMABHOOMI PROGRAMME** of Government of Andhra Pradesh.

13. Editor/Member of Editorial Board/ Reviewer of Journals

- i) Associate Editor IST Transactions of Environmental Systems-Theory and Applications (ESTA) published by IST Press, Hamilton, ON, Canada.
- ii) Member of Editorial Board of International Journal of Petroleum Engineering and Scientific Journals International
- iii) Reviewers of different International Journals like International Journal of Petroleum Engineering, Chemical Engineering Journal, African Journal of Microbiological Research, Chemical and Bioengineering

14. List of Publications:

A) *Latest Publications in National and International Journals and Books*

1. Sharma, U.P., Mahto, Vikas and Sharma, V.P. “ Advances in Selection Criteria of Wells for Gel Placement” Drilling and Exploration World, March 2009, pp. 37-40
2. Mahto, Vikas and Sharma, V.P. “Emerging Developments on Polymer Gel Systems for Water shut off jobs in Petroleum Production Operations: An Overview” Asian Mining: Resurgence of Mining in Asia: Prospects and Challenges, MGMI, Kolkata, 2010, Vol. II, 77-83.
3. Mahto, Vikas & Pathak, A.K. “ Safety and Health Management in Coal Liquefaction Processes” Macmillan Advanced Research Series , Macmillan Publishers India Ltd, 2009, pp 456-459

4. Mahto, Vikas “Emerging Technologies for the treatment of produced water from oil fields: An overview” Recent Advances in Waste Management, 2009,
5. Mahto, Vikas and Sharma, V.P. “Characterization of Indian Bentonite Clay Samples for Water Based Drilling Fluids”. Petroleum Science and Technology, Vol 26, Issue 15, 2008, pp 1859-1868
6. Khan, A.R, Mahto, Vikas, Fazal, S.A. & Laik, S. “Studies of wax deposition onset in case of Indian crude oil” Petroleum Science and Technology , Vol 26, Issue 14, 2008, pp 1706-1715
7. Sharma, V.P. & Mahto, Vikas “ Studies on less expansive environmentally safe polymers for development of water based drilling fluids” website: www.spe.org
8. Mahto, Vikas & Maurya, A.K. “Studies on polymer based gel system to control excessive water production in oilfields” ICCE Series, 2007, pp. 615-618.
9. Mahto, Vikas. “Development of water based drilling fluids using tamarind gum and partially hydrolyzed polyacrylamide” Mineral Processing Technology, 2007, 214-218
10. Mahto, Vikas & Dheeraj Kumar, Emerging Developments on Drilling Techniques for underground coal gasification process wells: An overview” Underground Coal Mining, 2006, pp. 379-383
11. Mahto, Vikas and Laik. S. “ Environmental Aspects of Coal Bed Methane Production Technology” Indian Mineral Congress, 2005, Allied Publishers Private Ltd, New Delhi, pp.106-111
12. S. Laik, and Mahto, Vikas, “Emerging Developments on Coal Bed Methane Production Technology” Indian Mineral Congress, 2005, Allied Publishers Private Ltd, New Delhi, pp.66-71
13. Mahto, Vikas & Sharma V.P. “ Tragacanth Gum: An effective oil well drilling Fluid additive” Energy Sources Vol 27, No. 3, 2005, pp 299-308
14. Mahto, Vikas & Sharma V.P. “Rheological study of a water based oil well drilling fluid” Journal of Petroleum science and engineering, 45 (2004) 123-128
15. Kumar, A. Senthil, Mahto, Vikas & Sharma, V.P. “ Behaviour of organic polymers on the rheological properties of Indian bentonite water based drilling fluid system and its effect on formation damage, Indian Journal of Chemical Technology, Vol.10, Sept. 2003, pp 525-530

16. Kumari, Sudha and Mahto, Vikas “Recent strategies for the production of biodiesel from waste cooking oil: An overview” Environmental Issues on Geotechnics and Mineral Industry, Excel India Publishers, New Delhi, 2008, pp 272-274
17. Sharma V.P. & Mahto Vikas “An overview of the recent developments on safety issues & environmental consideration in deep water drilling fluid Technology, May-September 2003, Oil Asia Journal, International Edition, pp. 19, 51-52

* Occupied **three times** position in the **Science Direct Top 25 Hottest Research Articles (20th position on July- Sept 2004, 8th Position on Oct-Dec 2004 and 9th position on April –June 2004)** within the Journal of Petroleum Science and Engineering.

B) Publications in the Proceedings of National and International Conferences/Seminars

1. Mahto, Vikas, Kashyap, P.K., Shrikant, P. and Krishna, B.V. “Study the effect of carbon nano particle on the water based drilling fluid systems” accepted for publication on CSECS 2010 to be held during November 19-20 at Indian School of Mines Dhanbad.
2. Mahto, Vikas & Maurya, A.K. “ Studies on Resin based gel system to control excessive water production in the oilfields” accepted for oral presentation in the APA International Conference on Polymer Science and Engineering: Emerging Dimensions to be held during November 26-27, 2010 at University Institute of Chemical Engineering and Technology, Chandigarh, India
3. Singh, Harveer, Yadav, U.P. and Mahto, Vikas “Studies on polymeric depressants on the rheology of Indian waxy crude oils” accepted for oral presentation in the APA International Conference on Polymer Science and Engineering: Emerging Dimensions to be held during November 26-27, 2010 at University Institute of Chemical Engineering and Technology, Chandigarh, India
4. Mahto, Vikas, Yadav, U.P, Kashyap, P.K. and Sharma, S.K. “ Simulation of Polymer Gel Systems for profile modification jobs in the oilfields” accepted for oral presentation in the APA International Conference on Polymer Science and Engineering: Emerging Dimensions to be held during November 26-27, 2010 at University Institute of Chemical Engineering and Technology, Chandigarh, India
5. Mahto, Vikas, Kashyap, P.K., Yadav, U.S. and Pathak, A.K., “Emerging Developments on Polycrystalline Diamond Compacts Bits for Hard and Highly Heterogeneous Reservoir” accepted for presentation in the National Seminar on Drills and Drilling: An Update (D&DU-2010) to be held during September 23-24, 2010 at Indian School of Mines Dhanbad

6. Mahto, Vikas and Sharma, V.P. “ Study the combined effect of partially hydrolyzed polyacrylamide and tragacanth gum on the properties of water based drilling fluids” accepted for publication on the National Seminar on Drills and Drilling: An Update (D&DU-2010) to be held during September 23-24, 2010 at Indian School of Mines Dhanbad
7. Mahto, Vikas “Study the rheological properties of Indian Waxy Crude Oil” presented on the National conference on Recent Advances in Chemical Engineering held on January 30-31 2010 at G.I.E.T. Gunupur, Orissa.
8. Yadav, U.S. and Mahto, Vikas, “Study the effect of gelation time on Polyacrylamide based gel systems with organic crosslinkers” presented on the National conference on Recent Advances in Chemical Engineering held on January 30-31 2010 at G.I.E.T. Gunupur, Orissa
9. Mahto, Vikas and Sharma, V.P. “ Emerging Developments on Polymer Gel Systems for Water shut off jobs in Petroleum Production Operations: An Overview” Asian Mining : Resurgence of Mining in Asia: Prospects and Challenges, MGMI, Kolkata, Vol. II, 77-83, January 2010
10. Mahto, Vikas “ Studies on cross linked partially hydrolyzed polymer gel systems for profile modification jobs “Presented on APA International conference on Polymer Science and Technology: Vision and Scenario held at I.I.T. Delhi on December 17-20, 2009
11. Mahto, Vikas “ Study the effect of organic polymers on the flow behavior of Indian waxy crude oils “Presented on APA International conference on Polymer Science and Technology: Vision and Scenario held at I.I.T. Delhi on December 17-20, 2009
12. Mahto Vikas, Sharma, S, Sharma, V.P. and Laik, S “Studies on polyarylamide-Resorcinol –formaldehyde system for profile modification jobs” presented in Production Technology Conference-PRODCON-2009 held at IOGPT, Panvel, Navi Mumbai on June 26-27 2009
13. Laik, S. and Mahto, V. “ Selection of Artificial lift systems for CBM wells” Presented on Ninth International Mine Ventilation Congress held at New Delhi from November 10-13, 2009
14. Mahto, Vikas “Management of naturally occurring radioactive materials in Petroleum Industry: An Overview” Proceedings of ISFL 2008 held on March 9-12, 2008 at New Delhi
15. Kumari, Sudha & Mahto, Vikas “Recent strategies for the production of biodiesel from waste cooking oil: An overview” Proceedings of National

Seminar on Environmental Issues on Geotechnics and Mineral Industry, B.I.T. Sindri, Dhanbad, April 4-5, 2008

16. Environmental management in oil well drilling operations: An overview Accepted for the oral presentation in NCFCE 2007 on Dec.12-14 2007 at IIT Guwahati.
17. Mahto, Vikas “Commercial production of natural gas hydrates: Options and Challenges” National Seminar on Gas Hydrates-A potential source of Energy to be held at NGRI, Hyderabad on February 5-6, 2007.
18. Mahto, Vikas. “Recent advances in waste minimization techniques at oil well drill site: An overview” Accepted for oral presentation on CV-2020, Catalyzing Vision: 2020: Challenges of Indian Chemical Engineers held on January 6-7, 2007.
19. Mahto, Vikas & Singh, S.P. “Simulation of biodegradation of phenolic compounds in a fluidized bed bioreactor” Proceedings of REACTOR-2006, National conference on Reactor Design, Simulation & Operation held at H.I.T. Haldia on 24-25 March 2006
20. Mahto, Vikas & Singh, S.P. “Solid waste management in Petroleum Refining Industries” Proceedings of Waste management in chemical and allied industries: A vision 2020(WMCI-2005) held at N.I.T. Rourkela on 1-2 Oct. 2005, pp- 138-142
21. Mahto, Vikas & Laik, S. “Environmental aspects of coal bed methane production technology” Proceedings of First Indian Mineral Congress held at I.S.M. Dhanbad on February 28-March1, 2005, pp. 106-111
22. Laik, S. & Mahto, Vikas “Emerging developments on Coal bed methane production technology: An overview” Proceedings of First Indian Mineral Congress held at I.S.M. Dhanbad on February 28-March1, 2005, pp. 106-111
23. Singh, S.P. & Mahto, Vikas “ Direct prediction of expanded bed height as a function of reduced Reynolds number in a Gas solid Fluidization, Proceedings of Ist National conference of research scholars and young scientists in chemical engineering held at I.I.T. Kharagpur on September 25-27, 2004
24. Sharma, V.P., Mahto, Vikas & Nath, J.D. “An overview of the recent technological development for removal of hydrocarbons from oil contaminated soils and ground water” Proceedings of the conference on Environment Management & Emerging Trends in Petroleum Sector held at Goa on February 25-27, 2004.

25. Mahto Vikas & Kumar Dheeraj. "Emerging Developments of Drilling Technologies for underground coal gasification process wells: An Overview, Proceedings of UMC-2006, National Conference on Underground Coal Mining held at Indian School of Mines, Dhanbad on Nov. 9-10, 2006, p 379-383.
26. Mahto Vikas "Role of Polymer Nanogels for profile modification in Petroleum reservoir rock" Proceedings of APA International conference on Advances in polymer Science & technology held on Jan 28-31 2008 at IIT New Delhi.2008
27. Mahto, Vikas & Maurya, A.K. "Studies on polymer based gel system to control excessive water production in oil fields" proceedings of International Congress of Chemistry and Environment to be held on Nov. 18-20, 2007 at Kuwait University, Kuwait".
28. Mahto, Vikas "Commercial production of natural gas hydrates: Options and Challenges" National Seminar on Gas Hydrates-A potential source of Energy to be held at NGRI, Hyderabad on February 5-6, 2007
29. Mahto Vikas. "Development of water based drilling fluids using tamarind gum and partially hydrolyzed polyacrylamide" Proceedings of MPT-2007, , February 22-24, 2007
30. Sharma, V.P. & Mahto, Vikas " Studies on less expansive environmentally safe polymers for development of water based drilling fluids" Proceedings of 2006 SPE , Asia Pacific oil and Gas Conference and Exhibition, Australia
31. Sharma, V.P. & Mahto, Vikas, "Environmental Management of Petroleum hydrocarbon contaminated soil and ground water" Proceedings of 4th International symposium on Fuels and Lubricants (ISFL-2004) , October 27-29, 2004, New Delhi
32. Sharma V.P. & Mahto Vikas " An overview of the recent developments on safety issues & environmental consideration in deep water drilling fluid technology, Proceedings of PETROTECH-2003 held at New Delhi on January 9-12, 2003

15. List of Projects implemented

1. a) **Title of the Project:** Study the differential sticking behavior caused by water based drilling fluids
b) **Funding Agency:** ISM
c) **Status:** Completed
d) **Principal Investigator:** Dr. Vikas Mahto
2. a) **Title of the project :** Study the variation in rheological properties of Indian Waxy crude oils using organic polymers
b) **Funding Agency:** UGC

- c) **Status :** Completed
- d) **Principal Investigator :** Dr. Vikas Mahto
- e) **Co-Investigator:** Dr. V.P. Sharma

- 3. a) **Title of the Project:** Experimental Studies, Modeling and Simulation of Polymer gel system for profile modification in petroleum reservoir rock
- b) **Funding Agency:** CSIR
- c) **Status:** on going
- d) **Principal Investigator:** Dr. Vikas Mahto

16. Selected Invited Lectures/Special Lectures delivered on different consultancy courses/short -term courses/Training programmes.

- i) Delivered a series of lectures on **Safety Management in Oil Mines** at **DGMS Dhanbad** on June, 2009
- ii) Delivered a series of lectures on **Recent Methods for the Exploration and Production of Oil and Gas** during Induction Training Programme for the newly recruited Inspecting officer of **DGMS Dhanbad** on July, 2009
- iii) Delivered a series of lectures on **Oil Mines Safety** conducted by Institute of Miners & Metal Workers Education, Kolkata during December 2008
- iv) Delivered Invited Lecture on **“Hydrofrac in Coalbed Methane Well”** on Executive Training Programme on **“Coalbed Methane Exploration and Production Technology”** for **CMPDI Ltd** during 12-16 June 2006 at **Central Mining and Research Institute Dhanbad.**
- v) Delivered Lecture on **“Oil Well Stimulation Techniques”** on Short-Term Course for the executives of **Oil India Ltd** during July 31 to August 4 2006.
- vi) Delivered Lectures on **“Artificial Lift Techniques”** on the Training Programme for the executives of **NTPC Ltd** during February 25-March 08 at I.S.M. University Dhanbad.
- vii) Delivered Lectures on **“Well Problems and Control”** on the Training Programme for the executives of **NTPC Ltd** during February 25-March 08 at I.S.M. University Dhanbad.
- viii) Delivered Lectures on **“Drilling Fluid Maintenance Equipments”** on the Training Programme for the executives of **NTPC Ltd** during February 25-March 08 at I.S.M. University Dhanbad
- ix) Delivered lectures on **“Oil Well Cementing Operations”** on the Training Programme for the executives of **NTPC Ltd** during February 25-March 08 at I.S.M. University Dhanbad.

- x) Delivered lectures on **“Modern Petroleum Refining Operations”** and **“Artificial Lift Techniques”** for the executives of **ONGC Ltd** during June 9- July 11 2008 at I.S.M. University Dhanbad.
- xi) Delivered lectures on **“Drilling Fluids: Types, Functions, Properties and their Optimization”** on Short- term course on Drilling Fluid Technology” during June 02-06, 2008 at I.S.M. University Dhanbad.
- xii) Delivered invited lecture on **“Modern Petroleum Production Operations”** on the short term course on Petroleum Engineering during July 29-31, 2008 organized by Department of Chemical Engineering, G.I.E.T. Gunupur (Orissa)
- xiii) Delivered invited lectures on **“Enhanced Oil Recovery Techniques”** on the short term course on Petroleum Engineering during July 29-31, 2008 organized by Department of Chemical Engineering, G.I.E.T. Gunupur (Orissa)
- xiv) Delivered invited lecture on **“Modern Oil Well Drilling and Cementing Techniques”** on short term course on Petroleum Engineering during July 29-31, 2008 organized by Department of Chemical Engineering, G.I.E.T. Gunupur (Orissa)
- xv) Delivered invited lecture on **“Reservoir Management and Reservoir Simulation”** on short term course during July 29-31, 2008, on Petroleum Engineering organized by Department of Chemical Engineering, G.I.E.T. Gunupur (Orissa)