

Curriculum Vitae of Dr. Vikas Mahto, Associate Professor

1. **Name:** Dr. Vikas Mahto
2. **Current Position:** Associate Professor
3. **Address:** Department of Petroleum Engineering,
Indian Institute of Technology (Indian School of Mines),
Dhanbad- 826004 (India). Phone No. +91-326-2235498 (Office),
Cell phone No.: +91- 9431711023; Fax No.: +91-326-2296563;
E-mail id: vikas.ismpe@gmail.com
4. **Personal Data** (Date and place of birth, family status):
Date of Birth: 07.07.1971
Place of Birth: Bokaro (Jharkhand)
Gender: Male
Nationality: Indian
Marital status: Married

5. **Educational Qualifications:**

Degree/award	Year	Discipline/field	Class/Grade	Organization and country
Ph.D	2004	Petroleum Engg.	Excellent	IIT(ISM), Dhanbad, Jharkhand
M.Tech	1999	Chemical Engg.	First.	N.I.T. Warangal, A.P.
B.Tech	1996	Chemical Tech	First	H.B.T.I. Kanpur, U.P.

6. **Appointments:**

Position held	Organization	Department/Centre	Year Appointed
Senior Research Fellow	IIT(ISM), Dhanbad	Petroleum Engineering	2000
Part Time Lecturer	B.I.T. Sindri	Chemical Engineering	2003
Lecturer	B.I.T. Sindri	Chemical Engineering	2003
Lecturer	IIT(ISM), Dhanbad	Petroleum Engineering	2004
Assistant Professor	IIT(ISM), Dhanbad	Petroleum Engineering	2007
Associate Professor	IIT(ISM), Dhanbad	Petroleum Engineering	2010

7. **Main research areas:** Water and Gas shut off jobs, Profile Modification Jobs, Gas hydrate Inhibitors, Drilling Fluid Design and Analysis, Enhanced Oil Recovery, Flow Assurance Problems, and Application of nanotechnology in oil and gas field operations

8. R& D Project implemented

Sl. No	Project Title	Role	Funding Agency	Amount (Rs.)	Status
1	Study the differential sticking behavior caused by water based drilling fluids	Principal Investigator	IIT(ISM) Dhanbad	32,600/-	Completed
2	Study the variation in rheological properties of Indian waxy crude oils using organic polymers	Principal Investigator	UGC New Delhi	4, 13,551/-	Completed
3	Experimental Studies, Modeling and Simulation of Polymer gel system for profile modification in petroleum reservoir rock	Principal Investigator	CSIR New Delhi	8, 31,028/-	Completed
4	Study of organic solid deposition in the petroleum reservoir rock	Principal Investigator	Oil India Ltd, Duliajan, Assam	8,58,000/-	Completed
5	Development of Quantum Dots Based Chemical Additives for Petroleum Industries	Principal Investigator	RCPL Mumbai	540000/-	Ongoing
6	Synthesis characterization and evaluation of novel nanohybrid polymers to improve the flow behaviour of Indian waxy crude oils	Principal Investigator	CSIR New Delhi	11,25,000/-	Ongoing
7	Development of nano material reinforced particle gel systems for water and gas shut off in carbonate reservoirs	Principal Investigator	ONGC Ltd	4,28,67,630/-	Approved
8	Development of low dosage hydrate inhibitors for the prevention of gas	Principal Investigator	ONGC Ltd	3962440/-	Approved

	hydrates in the oil and gas field operations				
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9. Consultancy Work

Sl. No	Project Title	Consultancy No	Role
1	Development of high specialty chemical for oil field application	Cons/3664/2017-18	Consultant In-Charge
2	Evaluation of different parameters of Furnace Oil Sample	Cons/2929/2015-16	Consultant In-Charge
3	To study the suitability of three polymers and bentonite clay as oil well drilling fluid	Cons/1827/2012-13	Co-Consultant In-charge

10. Short Courses

Sl. No	Project Title	Consultancy No	Role
1	Five day Certificate Course on Advanced Shale Gas Drilling and Production Techniques	ASDPT-2015	Consultant In-Charge
2	Training Program on Practicals in Petroleum Engineering	Cons/1378/2011-12	Co-Consultant In-charge
3	Practical Training Programme on Drilling Fluid Technology	Cons/0540/2008-09	Co-Consultant In-charge

11. Patents: Two (02) Indian patents on the flow improvers for Waxy crude oils

- (i) Effectiveness of Sorbiton Mono Oleate as pour point depressants on Indian Waxy crude oils (**Indian Patent Application No. 1007/KOL/2014 filed on 30.09.2014**)
- (ii) Synthesis and Characterization of Acrylate Esters as pour point depressants in Indian waxy crude oils(**Indian Patent Application No. 5/KOL/2015 of 2.1.2015**)

12. Book Published: 05

- (i) Vikas Mahto, "Development of Optimum Water Based Oil Well Drilling Fluids: A Systematic Approach" published by LAP Lambert Academic Publishing , Germany, ISBN: 978-3-8433-5770-8, Sep 2010.
- (ii) Vikas Mahto, "Objective Questions in Petroleum Engineering" published by Khanna Book Publishing Co (P) Ltd, New Delhi, 1st editionst edition, ISBN: 978-93-82609-80-3, Jan 2016.
- (iii) Vikas Mahto, "Objective Questions in Petroleum Engineering" published by Khanna Book Publishing Co (P) Ltd, New Delhi, 2nd Editionnd edition, ISBN: 978-93-86173-24-9, Jan 2017.
- (iv) Vikas Mahto, "Outlines of Chemical and Petroleum Engineering" published by Khanna Book Publishing Co (P) Ltd, New Delhi, 1st editionst edition, ISBN: 978-93-86173-19-5, Jun 2018.

- (v) Vikas Mahto, "Advanced Shale Gas Drilling & Production Techniques" published by Department of Petroleum Engineering, IIT (ISM), Dhanbad, Jun 2015.

13. Supervision of Ph.D. Research Work: 06 (completed) and 10 (ongoing)

List of Ph.D. Degree awarded Students			
Sl. No	Name of Research Scholar	Title of Ph.D. Thesis	Guides
1	Shailesh Kumar	Studies on Efficient Transportation of Indian Heavy Crude Oils through Offshore Pipelines	Dr. Vikas Mahto
2	Rituraj Singh	Development of nanocomposite hydrogels to control excessive water production in the oilfields	Dr. Vikas Mahto (Sole Guide)
3	Upendra Singh Yadav	Experimental studies, modeling and simulation of profile modification job in petroleum reservoir rock	Dr. Vikas Mahto (Sole Guide)
4	Tinku Saikia	Development of drilling fluid system for gas hydrate bearing formation	Dr. Vikas Mahto (Sole Guide)
5	Rajat Jain	Development of water based drilling fluids for shale formations	Dr. Vikas Mahto (Sole Guide)
6	Praveen Kr. Jha	Studies on rheological and filtration properties of emulsion muds for optimum performance in oil well drilling	Dr. Vikas Mahto (Main Guide) Prof. V.K. Saxena (Co-Guide)
7	Miss. Shivanjali Sharma	Study the effect of polymeric flow improvers on the rheological behaviour of Indian waxy crude oil	Dr. Vikas Mahto (Co-Guide) Prof. V.P. Sharma (Main Guide)

14. Memberships: Member of Society of Petroleum Engineers and Indian Institute of Chemical Engineers

15. Professional recognition/award/prize/certificate/fellowship

Sl. No.	Name of Award	Awarding Agency	Year
1.	Institute Academic Merit Scholarship	H.B.T.I. Kanpur	1994
2.	Institute Academic Merit Scholarship	H.B.T.I. Kanpur	1995
3.	Karmsheel Award	H.B.T.I. Kanpur	1995
4.	Certificate of Janmabhoomi Programme	Government of Andhra Pradesh	1998
5.	MHRD Fellowship	N.I.T. Warangal	1997-99

6.	CSIR Fellowship	I.S.M. Dhanbad	2000-03
7.	2 nd Best Paper Award	I.I.T. Chennai	2010
8.	2 nd Best Paper Award	I.I.T. Chennai	2012
9.	1 st Best Paper Award	I.I.T. Chennai	2014

16. Visits abroad:

- i) Visited **Australia** to carry out collaborative research work in Fuels and Energy Technology Institute of Curtin University of Technology under the Australia-India Joint Research Centre for Coal and Energy Technology from 20 September 2016 to 30 September 2016
- ii) Visited **Thailand** to present a research paper entitled “Study the effect of additives on the differential pipe sticking caused by water based drilling fluid” in the technical session of International Conference on Oil, Gas and Petrochemical Issues during August 11-12, 2012 at Phuket, Thailand.
- iii) Visited **Kuwait** to present a research paper entitled “Studies on polymer based gel system to control excessive water production in oil fields” in the technical session of International Congress of Chemistry and Environment held on Nov. 18-20, 2007 at Kuwait University, Kuwait

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

- i) Associate Editor:
 - (i) IST Transactions of Environmental Systems-Theory and Applications (ESTA)
 - (ii) International Journal of Chemical Research
 - (iii) Journal of Biomedical and Bioengineering
 - (iv) Amet Maritime Journal
- ii) Member of Editorial Board:
 - (i) International Journal of Oil, Gas and Coal Engineering
 - (ii) Scientific Journals International
 - (iii) IST Press, Canada
- iii) Reviewer:
 - (i) Journal of Petroleum Science and Engineering,
 - (ii) Petroleum Science and Technology,
 - (iii) Journal of Petroleum Engineering and Technology
 - (iv) Applied Clay Science,
 - (v) Chemical Engineering Journal,
 - (vi) International Journal of Petroleum Engineering,
 - (vii) African Journal of Microbiological Research,
 - (viii) Chemical and Bioengineering

- (ix) Journal of Advances in Sustainable Petroleum Engineering
- (x) Journal of Applied Polymer Science
- (xi) Powder Technology
- (xii) Industrial and Engineering Chemistry Research
- (xiii) Journal of Molecular liquids,
- (xiv) Energy and Fuels,
- (xv) International Journal of oil, gas and Coal Technology

18. Total Research Publications in Journals and Conferences: 120

19. Selected publications of Dr. Vikas Mahto indexed in Scopus Database/Thompson Reuter Database (Last Five Years)

1. Rohit Sharma, **Vikas Mahto**, Hari Vuthaluru, "Synthesis of PMMA/modified graphene oxide nanocomposite pour point depressant and its effect on the flow properties of Indian waxy crude oil", Fuel, 235, pp. 1245-1259. **Impact Factor: 4.9**
2. P.K. Jha, **Vikas Mahto** and V.K. Saxena, "Study the effect of polymers on the stability and rheological properties of oil-in-water (O/W) Pickering emulsion muds" Korea-Australia Rheology Journal, 30(2), 1-10 (May 2018)
3. Barasha Deka, Rohit Sharma, Arnab Mandal and **Vikas Mahto**, "Synthesis and evaluation of oleic acid based polymeric additive as pour point depressant to improve flow properties of Indian waxy crude oil" Journal of Petroleum Science and Engineering 170 (2018) 105–111
4. Rituraj Singh, **Vikas Mahto** and Hari Vuthaluru, "Development of a novel fly ash-polyacrylamide nanocomposite gel system for improved recovery of oil from heterogeneous reservoir" Journal of Petroleum Science and Engineering, Published online in February 21, 2018, **Impact Factor: 1.873**
5. Tinku Saikia and **Vikas Mahto**, Evaluation of Soya Lecithin as Eco-friendly Biosurfactant Clathrate Hydrate Antiagglomerant Additive, Journal of Surfactant and Detergents, 2018 **Impact Factor: 1.450**
6. Tinku Saikia and **Vikas Mahto**, "Temperature Augmented Visual Method for Initial Screening of Hydrate Inhibitors" Oil & Gas Science and Technology, 2018, **Impact Factor: 1.316**

7. Shailesh Kumar and **Vikas Mahto**, “Use of a Novel Surfactant To Prepare Oil-in-Water Emulsion of an Indian Heavy Crude Oil for Pipeline Transportation” *Energy Fuels*, 2017, 31 (11), pp 12010–12020, **Impact Factor: 3.091**
8. Tinku Saikia and **Vikas Mahto**, “Quantum Dots: A New Approach in Thermodynamic Inhibitor for the Drilling of Gas Hydrate Bearing Formation” *Journal of Industrial Engineering and Chemistry*, Elsevier, DOI: 10.1016/j.jiec.2017.03.029, March 2017, **Impact Factor: 4.179**
9. Tinku Saikia and **Vikas Mahto**, “Experimental investigations of clathrate hydrate inhibition in water based drilling fluid using green inhibitor” *Journal of Petroleum Science and Engineering*, Elsevier, 147 (2016) 647–653. **Impact Factor: 1.655.**
10. Tinku Saikia and **Vikas Mahto**, “Evaluation of 1-Decyl-3-Methylimidazolium Tetrafluoroborate as clathrate hydrate crystal inhibitor in drilling fluid” *Journal of Natural Gas Science and Engineering*, Elsevier, 36 (2016) 906-915. **Impact Factor: 2.16**
11. Rajat Jain and **Vikas Mahto**, “Formulation of a water based drilling fluid system with synthesized graft copolymer for troublesome shale formations” *Journal of Natural Gas Science and Engineering*, Elsevier, 38 (2017) 171-181. **Impact Factor: 2.16**
12. Rituraj Singh and **Vikas Mahto**, “Synthesis, Characterization and Evaluation of Polyacrylamide Grafted Starch/Clay Nanocomposite Hydrogel System for Enhanced Oil Recovery”, *Petroleum Science*, Springer, Accepted for publication, **Impact factor: 0.91**
13. Shailesh Kumar and **Vikas Mahto**, Emulsification of Indian heavy crude oil using a novel surfactant for pipeline transportation “ *Petroleum Science*, Springer, Published online on April 2017, **Impact factor: 0.91**
14. Saket. Kumar, Rajat Jain, Pulkit Chawdhary and **Vikas Mahto**, “Development of Inhibitive Water Based Drilling Fluid System with Synthesized Graft Copolymer for Reactive Indian Shale Formation”, *Society of Petroleum Engineers*, 2017, SPE-185346.
15. Shailesh Kumar and **Vikas Mahto**, “Emulsification of Indian heavy crude oil in water for its efficient transportation through offshore pipelines” *Chemical Engineering Research and Design*, Elsevier, 2016:115, pp. 34-43. **Impact Factor: 2.525.**
16. Shivanjali Sharma, **Vikas Mahto**, V. P. Sharma and Amit Saxena, “An empirical correlation for estimating the viscosity of non-Newtonian waxy crude oils” *Petroleum Science and Technology*, Taylor and Francis, 2016:34(6), pp. 523-530. **Impact Factor: 0.31.**

17. Bhola K. Paswan, Rajat Jain, Sunil K. Sharma, **Vikas Mahto** and V. P. Sharma, "Development of Jatropa oil-in-water emulsion drilling mud system" *Journal of Petroleum Science and Engineering*, Elsevier, 2016:144, pp. 10-18. **Impact Factor: 1.655.**
18. Rajat Jain, Triveni K. Mahto and **Vikas Mahto**, "Rheological investigations of water based drilling fluid system developed using synthesized nanocomposite" *Korea-Australia Rheology Journal*, Springer, 2016: 28(1);pp. 55-65. DOI: 10.1007/s13367-016-0006-7. **Impact Factor: 1.1014.**
19. Rituraj Singh, **Vikas Mahto**. Preparation, characterization and coreflood investigation of polyacrylamide/clay nanocomposite hydrogel system for enhanced oil recovery. Accepted in *Journal of Macromolecular Science, Part B: Physics*, DOI: 10.1080/00222348.2016.1238332, published online on 22 September 2016, **Impact Factor: 0.620.**
20. T.K. Mahto, Rajat Jain, Soumen Chandra, Dhruvojyoti Kumari, **Vikas Mahto**, S.K. Sahu, "Single step synthesis of sulfonic group bearing graphene oxide: A promising carbo-nano material for biodiesel production" , *Journal of Environmental Chemical Engineering*, Elsevier, 2016, 4(3), pp. 2933-2940, **Journal Impact: 3.42**
21. Rituraj Singh and **Vikas Mahto**, "Study of the polymer concentration and polymer/crosslinker ratio effect on gelation time of a novel grafted polymer gel for water shutoff using a central composite design method" *Polymers for Advanced Technologies*, 08/2015;DOI:10.1002/pat3622. **Impact Factor-1.717.**
22. Rajat Jain, Bhola Kumar Paswan, Triveni Kumar Mahto, and **Vikas Mahto**, 2015 "Study the effect of synthesized graft copolymer on the inhibitive water based drilling fluid system" *Egyptian Journal of Petroleum*, Elsevier, Published Online (<http://dx.doi.org/10.1016/j.ejpe.2015.03.016>).
23. Rituraj Singh, Kamla Kant, & **Vikas Mahto**, "Study of the Gelation and Rheological Behavior of Carboxymethyl Cellulose-Polyacrylamide Graft Copolymer Hydrogel" *Journal of Dispersion Science and Technology*, 06/2015; 36(6). DOI:10.1080/01932691.2014.930793 **Impact Factor-0.795.**
24. Rajat Jain and **Vikas Mahto**, "Evaluation of polyacrylamide/clay composite as a potential drilling fluid additive in inhibitive water based drilling fluid system" *Journal of Petroleum Science and Engineering* Volume 133, September 2015, pp. 612–621. **Impact Factor-1.42.**
25. **Vikas Mahto**, D. Verma & Harveer Singh "Kinetic study of wax deposition in flow lines due to Indian Waxy Crude Oil", *International Journal of Oil, Gas and Coal Technology*, 01/2015; 10(3), pp. 293-303. **Impact Factor-0.51.**

26. Rajat Jain and **Vikas Mahto**, "Evaluation of polyacrylamide-grafted-polyethylene glycol/silica nanocomposite as potential additive in water based drilling mud for reactive shale formation" Journal of Natural Gas Science and Engineering DOI: dx.doi.org/10.1016/j.jngse.2015.06.051. **Impact Factor-2.16**
27. P.K. Jha, **Vikas Mahto** & V. K. Saxena, "Study the effects of carboxymethyl cellulose and tragacanth gum on the properties of emulsion based drilling fluids", The Canadian Journal of Chemical Engineering, 07/2015; 9999. DOI:10.1002/cjce.22259. **Impact Factor-1.23**
28. U.S Yadav & **Vikas Mahto**, "Insitu Gelation Study of Organically Crosslinked Polymer Gel System for Profile Modification Jobs" Arabian Journal for Science and Engineering, Vol. 39, 2014, pp. 5229-5235 **Impact Factor-0.37**.
29. P.K Jha, **Vikas Mahto** & V.K. Saxena, "Emulsion Based Drilling Fluids: An Overview" International Journal of Chemical Tech Research, Vol. 6(4), 2014, pp. 2306-2315
30. A.K. Maurya & **Vikas Mahto**, V.P. Sharma & S. Laik "Study the potential of amino resin to control excessive water production in the Indian oilfields" Petroleum Science and Technology, Vol. 32, 2014, pp. 1443-1447, **Impact Factor-0.31**
31. Rajat Jain, **Vikas Mahto** & T. K. Mahto, "Study of the Effect of Xanthan Gum Based Graft Copolymer on Water Based Drilling Fluid" Journal of Macromolecular Science Part A, Vol. 51, Issue 12, 2014, pp. 976-982. **Impact Factor-0.81**
32. P.K. Jha, **Vikas Mahto** & V. K. Saxena, "Study the effects of xanthan gum and aluminium stearate on the properties of oil-in-water emulsion drilling fluids", Arabian Journal of Science and Engineering, 04/2015; **Impact Factor-0.37**
33. Shivanjali, Sharma, **Vikas Mahto**, & V.P Sharma, "Effect of Flow Improvers on Rheological and Microscopic Properties of Indian Waxy Crude Oil", Industrial and Engineering Chemistry Research, Vol. 53, 2014, pp. 4525-4533. **Impact Factor-2.59**
34. **Vikas. Mahto**, Dharmendra Verma, Ajay Kumar & V.P.Sharma. "Wax Deposition in Flow Lines under Dynamic Conditions" Petroleum Science and Technology, Vol. No. 32, 2014, pp. 1996-2003 **Impact Factor-0.31**.
35. U.S. Yadav & **Vikas Mahto**, "Investigating the Effect of Several Parameters on the Gelation Behavior of Partially Hydrolyzed Polyacrylamide-Hexamine-Hydroquinone Gels", Industrial and Engineering Chemistry Research, Vol. 52, 2013, pp. 9532-9537. . **Impact Factor-2.59**

36. **Vikas Mahto**, P.Shrikanth & B.V. Krishna, “ Development of non-damaging and inhibitive water based oil well drilling fluids ” Petroleum Science and Technology, Vol. 31, 2013, pp. 721–726, . **Impact Factor-0.31**
37. P.K. Jha, **Vikas Mahto** & V.K. Saxena “ Emulsion based drilling fluids: An overview” International Journal of Chem Tech Research, Vol. 6, No.4, 2014, pp 2306-2315,
38. **Vikas Mahto** “The Prevention of pipe sticking problems caused by water based drilling” Petroleum Science and Technology, Vol. 31, 2013, pp. 2237-224, **Impact Factor-0.31**