Name	**:**	**Rajeev Upadhyay**
Work Address	**:**	Department of Petroleum Engineering Indian Institute of Technology (ISM) Dhanbad - 826004 Jharkhand, India.
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Educational Qualification:

Doctor of Philosophy (Ph.D.) in Petroleum Engineering: (2018)

Indian Institute of Technology (Indian School of Mines), Dhanbad, India

Topic of Thesis: **Studies on Pressure Dependent Permeability in the Flow Equations of CBM Reservoir under Transient and Semi-Steady State Condition**

Bachelor of Technology (B.Tech.) in Petroleum Engineering (2003)

Indian School of Mines, Dhanbad, India

Experience Summary:

A Petroleum Engineering professional with a B.Tech. and Ph.D. in Petroleum Engineering. I am an accomplished petroleum upstream industry professional turned academician having a professional career marked with 22+ years of experience in the field of Exploration & Production of petroleum reservoirs with a broad range of multi-disciplinary experience. A dynamic professional career marked with experience in all stages of reservoir field life cycle – Exploration, Appraisal and Development. I am currently working as a faculty in IIT(ISM) Dhanbad.

Demonstrated strengths include reservoir simulation studies/dynamic reservoir modelling of both conventional and unconventional hydrocarbon reservoirs, field development planning (FDP),subsurface reservoir characterisation, risk & uncertainty study, appraisal work programme, reserves-resource estimation (aligned with SEC and Corporate guidelines) and new ventures screening study. Experience with both conventional and unconventional reservoirs. Excellent track record in multi-disciplinary teamwork, complying with company's business principles and coaching/mentoring junior staff.

Career Summary:

Jan 2025 – Till Date	**:**	**Indian Institute of Technology (ISM), Dhanbad** Professor, Department of Petroleum Engineering
April 2016 – Jan 2025	**:**	**Indian Institute of Technology (ISM), Dhanbad** Associate Professor, Department of Petroleum Engineering
Oct. 2015 – April 2016	**:**	**Hindustan Oil Exploration Company (HOEC)** Senior Reservoir Engineer
Nov 2014 – Oct. 2015	**:**	**Santos Ltd., Adelaide, Australia** Senior Reservoir Engineer Unconventional Resources & Exploration – Eastern Australia

May 2012 – Nov 2014	**:**	**Santos Ltd., Brisbane, Australia** Senior Reservoir Engineer GLNG Concept – Reservoir Development (Scotia Asset)
Aug 2010 – May 2012	**:**	**QGC Pty Ltd – A BG Group Subsidiary, Brisbane, Australia** Lead Reservoir Engineer, Planning and Reserves Department
Feb 2007 – July 2010	**:**	**Shell Technology India / Shell E&P, The Netherlands** Reservoir Engineer / Lead Reservoir Engineer
Oct 2003 – Jan 2007	**:**	**Reliance Industries Limited, Petroleum Business (E & P)** Reservoir Engineer

Professional Experience:

Indian Institute of Technology (ISM), Dhanbad – May 2016 to Till Date

Position: Associate Professor

Expertise: Reservoir Simulation Studies, Pressure Transient Analysis, Field Development Planning, Reservoir Management, Reserve & Resource Estimation, Reservoir Modelling, Unconventional Reservoirs, Mathematical Modelling of CO_2 Sequestration and Underground Hydrogen Storage, Geothermal Reservoir Engineering

Area of Specialization: Reservoir characterization and modelling of Conventional and Unconventional Hydrocarbon Reservoirs; Pressure Transient Testing, Reservoir Simulation & Modelling; Coal Bed Methane; Reservoir Geomechanics applications in Unconventional reservoirs

- Primarily responsible for teaching the concepts of classical reservoir engineering, fluid flow through porous media, reservoir simulation and modelling to undergraduate and postgraduate students of Petroleum Engineering
- Currently involved in publishing papers in reputed journals and presenting them in International and National conferences.
- Engaged in developing in-house simulators for subsurface reservoir modelling studies and well performance (IPR/VLP) tools in MATLAB/Python
- Proactively exploring and implementing innovative teaching techniques to accelerate the learning process amongst the students.
- Conducting executive training/development programs for industry professionals (ONGC/OIL/IOCL/RIL/ESSAR/CMPDIL) in the specialized topics of reservoir engineering through short term and long-term courses – Well Testing, Reservoir Simulation, Well Performance, Material Balance, Reservoir Characterization & Modelling, Unconventional Reservoirs like Coal Seam Gas & Shale oil/gas
- As PI, leading R&D project titled "CBM resource estimation and feasibility study of field development using fully-integrated Geocellular model approach coupled with AI/ML algorithms in the Damodar River Valley, Godavari, Mahanadi, Satpura and Rajmahal Basin, India" sponsored by Directorate General of Hydrocarbons (DGH)
- As Co-PI, contributing to DST project "Methane Drainage Prior to Mining". Project No. – DST-SERB/(190)/2018-19/557/ME
- Offering consultancy services to Oil & Gas Companies. Some of the delivered consultancy projects:

- Consultancy Project No. – CONS/3609/2017-18 (Full field Static and Dynamic Modelling, GIIP Estimation and Production Forecast of North Karanpura Block) – Sponsored by ONGC-PEPL-IOCL JV
- Consultancy Project No. – CONS/3721/2017-18 (Generation of gas production profile in Raniganj CBM Block considering a combination of vertical and deviated wells) – Sponsored by ONGC
- Consultancy Project No. – CONS/5035/2019-2020 (Field-scale simulation study and production forecasting for a part of Sohagpur West Block of Reliance Industries Limited (RIL)) – Sponsored by Reliance Industries Limited (RIL)
- Consultancy Project No. – CONS/6054/2021-2022 (Field scale reservoir simulation study of Raniganj CBM field of Essar Oil & Gas Exploration and Production Ltd. (EOGEPL)) – Sponsored by Essar Oil & Gas Exploration and Production Ltd. (EOGEPL)
- Consultancy Project No. – CONS/7052/2022-2023 (Pre-feasibility study for the evaluation of sixteen (16) CBM blocks offered under Special CBM Bid Round – 2022 for prospect analysis and estimation of CBM resource of each block.) - Sponsored by Oil India Limited (OIL)
- Consultancy Project No. – CONS/7051/2022-2023 (Prospectivity Analysis and Resource Estimation of CBM block SP-ONHP (CBM)-2021/1 for Invenire Petrodyne Energy) - Sponsored by Invenire Petrodyne Limited
- Consultancy Project No. – CONS/7216/2023-2024 (Detailed Study on Hydraulically Actuated Artificial Lift (HAAL) Unit vis-a-vis Conventional SRP Unit) - Sponsored by ONGC

o Achievements –

- Developed in-house conventional reservoir simulator (semi-analytical) in MATLAB to simulate the production behaviour of conventional wells under different reservoir drive mechanisms
- Developed in-house MATLAB based codes for generating IPR and VPL for multiphase flow in conventional and unconventional hydrocarbon wells
- Developed in-house CO_2 Sequestration simulator to simulate Enhanced Coalbed Methane (ECBM) process incorporating subsurface flow dynamics and subcritical and supercritical behaviour of CO_2
- Developed a Coalbed Methane (CBM) simulator "BHARATCBM" that incorporates a fully-coupled pressure-dependent diffusivity and time-dependent desorption effects of CBM reservoirs.
- Developed a Geothermal Reservoir Simulator

o Administrative Responsibilities

- Head, Centre for Earth, Energy, and Environmental Research (CEEER) – May 2020 to till date
  - Played a pivotal role in defining the vision and mission of the Centre.
  - Prepared the detailed document for the centre listing vision, mission, key focus areas of R&D, budget requirements etc.

- Generated funds for the centre through consultancy projects (Current account balance of the centre is more than Rs. 30 lakhs/-)

- Associate Dean (Alumni Affairs) – Sept. 2018 to Oct. 2023
  - Consolidated database of ISM alumni created which contains updated information on more than 20000 Alumni across the world.
  - Worked extensively on strengthening the relationship of IIT(ISM) with all Alumni Association chapters
  - For the first time, a donation to the tune of Rs. 8 crores received from alumni (Mr. Naresh Vashishth) for setting up "Tinkering and Innovation Lab"; Moreover, coordinated with alumni and facilitated the generation of fund to the tune of Rs. 2.2 Crores for establishment of smart classrooms and studio
  - Conceptualized and created Student Alumni International Relations Cell (SAIRC) with a goal of encouraging students participation in Alumni Affairs activities

Details of Ph.D. Supervision:

No. of Ph.D. guided: 2
No. of Ph.Ds. supervising as:
1. Guide (sole): 1
2. Co-guide: 1

Hindustan Oil Exploration Company, Chennai, India – Nov 2015 to April 2016

Position: Senior Reservoir Engineer

Dirok Gas Development Project – Assam, India

- Led Reservoir development studies for the Dirok Gas Field (Assam) of HOEC
- Worked closely with the geologists and geophysicists within the team to fully integrate G&G into the reservoir models and technical work. Construct full-field dynamic model for asset via integration of geological, petrophysical and engineering data including detailed reservoir simulation studies.
- Worked closely with the service provider to design the Hydraulic Fracturing operation. Integrate all subsurface data into the model, evaluate multiple cases on fracturing design, screen and select the most optimum fracture design for production enhancement.
- Integrated pre-frac and post-frac information to conduct post-frac analysis. Use and analyze mini-frac data to gather vital information on horizontal stresses and formation permeability in very tight reservoirs.
- Assessed different development concepts within full-field simulation model – Test development scenarios on various well spacing, well technology and plant size ranges.
- Provide mentoring and guidance to junior staff.

Santos Ltd., Adelaide – Nov 2014 to Aug.2015

Position: Senior Reservoir Engineer

Unconventional Resources & Exploration – Eastern Australia

- Led Reservoir exploration & appraisal studies for the Cooper Basin Unconventional Reservoir assets of Santos Ltd.
- Work closely with the geologists and geophysicists within the team to fully integrate

G&G into the reservoir models and technical work
- Construct dynamic Simulation model in ECLIPSE to characterize Shale Gas / tight gas reservoirs based on Cooper Basin pilot wells currently producing in unconventional plays.
- Use the numerical simulation model (ECLIPSE) to characterize transient behavior and drainage pattern of the horizontal wells drilled and producing in very low permeability Shale reservoirs (~micro-Darcy or less perm range) - Example Triple Porosity/Dual Permeability modeling with ECLIPSE simulator to characterize multiple gas storage sites and flow mechanism within Shale gas reservoirs.
- Provide reservoir engineering inputs into Field Development Plans (FDP)
- Monitor field performance and recommend resources and reserve updates. Contingent Resource and Reserves for fields to be backed by both seriatim of recognized projects and production forecasts.
- Liaise with Central Australian gas development teams in the evaluation and implementation of near field exploration and appraisal wells. Ensure that the regional geologic framework understanding is common.
- Oversee field activities where appropriate to ensure defined objectives are met.
- Provide mentoring and guidance to junior staff.

Santos Ltd., Brisbane – May 2012 to Nov 2014

Position: Senior Reservoir Engineer

GLNG Coal Seam Gas Project – Reservoir Development (Scotia Asset)
- Led Reservoir Development studies for the Scotia Coal Seam Gas Asset of Santos GLNG Project
- Led reservoir simulation studies and static/dynamic reservoir modeling work for the Scotia asset – Workflow from PETREL to ECLIPSE/GEM
- Constructed full-field dynamic reservoir models for assets via integration of geological, petrophysical and engineering data including detailed reservoir simulation studies.
- Well performance analysis of the existing Scotia wells with 12+ years of production history
- Calibrated the model with the observed production history – History matching
- Performed uncertainty study to achieve multiple history matched cases on full-field reservoir simulation model – Defined low, mid and high case history matched model
- Assessed different development concepts within full-field simulation model – Tested development scenarios on various well spacing, well technology and plant size ranges.
- Prepared and updated Field Development Plan with the maturity of the project
- Incorporated and evaluated reservoir parameter uncertainty in dynamic models and test sensitivities.
- Co-ordinated technical assurance plans and reviews for dynamic modeling.
- Reserves assessments and preparation of documentation and review materials. Contribute to Internal Reserve Guidelines and reviews.
- Co-ordinated provision of data to Reserves Certifiers and review methodology applied by certifiers.
- Review and implementation of new technology to improve technical analysis, risk assessment and project commerciality.
- Provide mentoring and guidance to junior staff.

Achievement: Achieved the milestone of completing the first full-field reservoir simulation model of the GLNG project. Scotia field simulation model became a pioneer among other assets of GLNG. I initiated and completed the Scotia reservoir model in GEM compositional

reservoir simulator. Thereafter I replicated the Scotia model in ECLIPSE simulator too as a part of the company policy of transitioning from GEM to ECLIPSE. Scotia model is also remarkable in the sense that it is the first GLNG model that captures history matching on wells with strongly observed matrix shrinkage phenomenon in Scotia wells causing the permeability of the reservoir to increase with reservoir pressure depletion.

Queensland Gas Company (QGC), Brisbane – Aug 2010 to May 2012
Position: Lead Reservoir Engineer

Planning and Reserves Department

- Estimated Reserves and Discovered Resources for use in development planning
- Worked closely with Development Geologists and Petro physicists to identify key factors influencing Coal Seam Gas Reserves
- Analyzed and evaluated the data gathered from Appraisal and Pilot wells to justify the migration of Discovered Resources to Reserves
- Kept track of reserves growth and manage hydrocarbon maturation
- Co-ordinated with the subsurface technical team to chalk out optimal Appraisal Plan important for Reserves growth
- Provided Reserves and Resource inputs required for Business Plan submission
- Worked closely with Corporate Reserves Group to ensure that Reserves booking methods are aligned with standard guidelines
- Co-ordinated provision of data to Reserves Certifier (NSAI) and review methodology applied by the certifier.
- Prepared Reserves reports for JV partners
- Worked closely with JV commercial managers to address the queries and requirements of JV partners
- Contributed to the Work Programme and Budget documentation for JV partners

Shell Technology India / Shell E&P, The Netherlands – Feb 2007 to July 2010

Position – Lead Reservoir Engineer

- Led Reservoir engineering studies in the North Shilou CBM project of Shell China. Worked closely with the geologists and geophysicists within the team to fully integrate G&G into the PETREL model and technical work. Built a full-field reservoir simulation model in the compositional GEM simulator. Performed uncertainty study with fully integrated Design of Experiments (DOE) study. The reservoir modeling work contributed to strategize the most optimal development strategy and identification of sweet spots/fairways for North Shilou block.
- Lead Reservoir Engineer in Moranbah Gas Project(Australia) Proved Reserves and Resources assessment work. Performed Decline Curve Analysis (DCA) in the OFM tool on the wells of Moranbah and Tipton fields as a part of the Proved Reserved booking workflow. Constructed full-field dynamic reservoir model in GEM simulator via integration of geological, petro-physical and engineering data. The work contributed to the reserves & resources booking of Moranbah Gas Field and further development planning work.
- Completed new venture opportunity work in various China unconventional reservoirs opportunities which impacted the business decision to farm in key prospects.
- Evaluated data room documents, performed petrophysical analysis, built static/dynamic reservoir models and completed stochastic volumetric estimation for Botswana & India unconventional prospects. The work impacted Shell's business decision for farm into the prospects.

- Lead RE in the pre-feasibility screening studies of various Australian CBM assets within Bowen, Surat and Gunnedah Basin. Evaluated several data room documents for Shell. The work impacted Shell's business decision to enter Australian CBM opportunities.
- Carbonate Reservoir Engineer in the Grossmont project of Canada. Worked on the stochastic distribution of reservoir properties. Developed a Microsoft excel based tool to generate histograms for log derived porosity.
- Reservoir Engineer in the feasibility study project of Sabah Field (Malaysia). Constructed MBAL models for history matching and performance predictions.

Reliance Industries Limited, Petroleum Business, E&P (2003 – Jan. 2007)

Position – Petroleum Engineer / Reservoir Engineer

- Worked as an active team member in the coring and drilling operations. Gained hands-on experience in the coring and drilling operations.
- Worked in a team of geologists to perform routine core analysis and special core analysis
- Worked as in-charge (Well testing team) and conducted Injection/Fall-Off tests at the well site. Conducted well tests successfully in 28 core holes and 10 Pilot wells.
- Performed well test interpretation in PAN System.
- Constructed a full-field reservoir simulation model in COMET software. Performed history matching exercise with the available production data. The reservoir modeling work contributed to delineating the fairway area and strategizing the initial field development plan.
- Evaluated CBM Round III bidding blocks which contributed to building bid proposals for key blocks.
- Worked with Surface Facilities team of Sohagpur CBM Project and gained knowledge in the functioning and construction of artificial lift pumps (SRP, ESP and PCP). This knowledge was utilized in the troubleshooting of the pumps. Also worked with Hydro fracturing team to fracture the low permeability coal reservoirs (both in the designing and execution of the job).

Professional Skills:

- Proficiency in writing mathematical modelling codes in programming language MATLAB for subsurface simulation studies and wellbore and surface production modelling studies.
- Proficiency in Dynamic simulation modeling with CMG/ECLIPSE Reservoir simulator
- Efficiency in static modeling with PETREL
- Expertise in conducting and interpreting well tests (PBU & Injection/Fall-off tests)
- Proficiency in CBM Reservoir Modelling Software COMET/CMG/ECLIPSE.
- Hands-on experience on the Artificial lift pumps like SRP, ESP, and PCP.
- Understanding and efficiency in reserves-resource evaluation methodology – Unconventional reservoirs
- Practical knowledge on coring and drilling operations, cementation, geophysical logging, hydro-fracturing, perforation – supervised these operations as Company man
- Good problem solving and analytical skills.
- Excellent ability to work and contribute in a multi-disciplinary team.
- Versatile and learn new tasks/skills quickly

Professional Training and Development:

2005 (17th Sept-2nd October – Reliance Industries Limited)

- Office Visited: ***Advance Resources International, Washington DC, USA.*** **Field Visited**: Appalachian Basin, Black Warrior Basin and Nora field for CBM and Petroleum exploration from coal/carboniferous shale. Tour organized by Reliance Industries Limited, for study CBM exploration and production along the Appalachian basins, USA.

2007 - 2010 (Shell Technology India)

- Shell HQ, Rijswijk, and The Netherlands for onboarding training.
- Belgium: for on boarding training
- PDO Oman – Shell EP00 Course
- Shell Bangalore : SCAL, PVTsim, MoRes, OFM, Well Test

2012 - 2015 (Santos Ltd.)

- CoreLab Relative Permeability School
- Tight Sands – Reservoir Characterisation and Fracture Stimulation Optimization Workshop
- Basic and Advanced ECLIPSE Simulation, OFM Advanced
- Geomechanics course

Publications:

Journal Papers:

1. **Upadhyay, R**., Kumar, R., Kumar, A., Mobarsha, G., Kiran, R., Rajak, V.K., 2025. Coalbed Methane (CBM) Well Performance: A New Methodology Combining IPR and VLP Analysis. *International Journal of Coal Science & Technology*. Accepted
2. Parida, B., Sinharay, R., **Upadhyay, R.,** Dixit, M., 2024. Pseudo-Isotherm: A Revised Concept of Desorption Phenomena of Coal Bed Gas Reservoirs Integrating Isotherm, Material Balance, and Pressure for Optimized Field Development. *SPE Journal*. SPE-219177-PA. https://doi.org/10.2118/219177-PA
3. Kiran, R., **Upadhyay, R.,** Rajak, V.K., Kumar, A., Gupta, S.D., 2024. Underpinnings of Reservoir and Techno-economic analysis for Himalayan and Son-Narmada-Tapti Geothermal Sites of India. *Renewable Energy*. Volume 237. https://doi.org/10.1016/j.renene.2024.121630
4. Kiran, R., Rajak, V.K., **Upadhyay, R.,** Kumar, A., 2022. Comparative techno-economic assessment of superhot rock and conventional geothermal energy feasibility for decarbonizing India. *Geothermics.* Volume 122. https://doi.org/10.1016/j.geothermics.2024.103078
5. **Upadhyay, R.,** Kagdi, I., Parida, B., 2023. A Novel Alternative Method of Compositional Simulation: A Semi-Analytical approach for Predicting and Evaluating Reservoir Performance of a Multi-component Coalbed Methane (CBM) Well. *ACS Omega.* https://doi.org/10.1021/acsomega.3c08030
6. **Doley, A.**, Mahato, V., Rajak, V.K., Kiran, R., **Upadhyay, R.**, 2024. Investigation of Filtration and Shale Inhibition Characteristics of Chitosan-N-(2-hydroxyl)-propyl trimethylammonium Chloride as Drilling Fluid Additives. *ACS Omega. https://doi.org/10.1021/acsomega.4c01632*

7. Kiran, R., **Upadhyay, R.,** Rajak, V.K., Gupta, S.D., Pama, H., 2023. Comprehensive Study of the Underground Hydrogen Storage Potential in the Depleted Offshore Tapti-Gas field. *International Journal of Hydrogen Energy*. Volume 48, Issue 33, 12396-12409. https://doi.org/10.1016/j.ijhydene.2022.12.172
8. **Upadhyay, R.,** Gupta, S.D., Rajak, V.K., 2023. Impact of Pressure Dependent Diffusivity on Transient Pressure Analysis of Dry Coalbed Methane (CBM) Wells – A New Approach. *Journal of Earth System Science*. Volume 132, Issue 1 https://doi.org/10.1007/s12040-022-02040-7
9. Mishra, D.P., Verma, S.K., Bhattacharjee R.M., **Upadhyay, R.,** Sahu, P., 2023. Geological and microstructural characterisation of coal seams for methane drainage from underground coal mines. *Bulletin of Engineering Geology and the Environment*. Volume 82, Issue 9 https://doi.org/10.1007/s10064-023-03352-8
10. Kumar, A., **Upadhyay, R.,** Kumar, S**.,** 2022. Tubing and Rod Failure Analysis in Rod Pumped Wells in an Indian Western Oil Field. *SPE Journal*. https://doi.org/10.2118/212848-PA
11. Gupta, S.D., **Upadhyay, R.,** Rajak, V.K., 2022. Establishment of economic viability for hydrocarbon production through a geocellular model developed in challenging geological reservoir of onshore sedimentary basin, India. *Himalayan Geology*. Volume 43, Issue 2, 471-489.
12. Neelu., **Upadhyay, R.,** Parida, B., 2022. A new approach to evaluate and predict the reservoir performance of a two-phase flow Coalbed Methane (CBM) well with fully-coupled time-dependent desorption and pressure-dependent diffusivity effects. *Energy & Fuels.* Volume 36, Issue 10, 5284-5306. https://doi.org/10.1021/acs.energyfuels.2c00429
13. Chattaraj, S., **Upadhyay R.**, Mohanty D., Halder, G, Kumar T., 2021. Evaluating production behaviour of CBM wells from Raniganj Coalfield through reservoir characterization under constrained field data conditions. *Journal of Natural Gas Science and Engineering*. Volume 92, 2021, 103969. https://doi.org/10.1016/j.jngse.2021.103969
14. Kumar, A., **Upadhyay, R.**, 2021. A New Two-Parameters Cubic Equation of State with Benefits of Three-Parameters. *Chemical Engineering Science*. Volume 229, 2021,116045. https://doi.org/10.1016/j.ces.2020.116045
15. **Upadhyay, R.**, Laik, S., 2017. An alternative approach to predict reservoir performance in a Coalbed Methane (CBM) well flowing under the dominant matrix shrinkage effect. *Transport in Porous Media*. Volume 119, Issue 3, 649-672. https://doi.org/10.1007/s11242-017-0904-2
16. **Upadhyay, R.**, Laik, S., 2017. A Computational Approach to Determine Average Reservoir Pressure in the CBM Well Flowing Under Dominant Matrix Shrinkage Effect. *Transport in Porous Media*, Volume 116, Issue 3, 1167-1188. https://doi.org/10.1007/s11242-016-0816-6

Conferences, Workshops, and Webinars:

1. Parida, B., **Upadhyay, R.,** Dixit, M., Sinharay, R., Mishra, A., Patel, A., Patel, S., Chand, J., Fife, D. (2024). Quantification of Relative Permeability in Coal Bed Methane

Reservoirs Through Production Data Analysis and Material Balance for Reliable Forecasting, Evaluation, and Optimize Field Development. Paper presented at the ADIPEC, Abu Dhabi, UAE, November 2024. SPE-222095-MS. doi: https://doi.org/10.2118/222095-MS

2. **Upadhyay, R.,** Gupta, S.D., Kumar, A., Kiran, R., Rajak, V.K. (2024). A preliminary study of quantification of CO2 sequestration potential and associated incremental methane recovery from Jharia Coalbed Methane (CBM) field considering the flow dynamics that prevail in CBM reservoirs. Paper presented at the UrjaVarta-2024 Conclave organised by Directorate General of Hydrocarbons (DGH), New Delhi, July 2024
3. Parida, B. P., Sinharay, R., Dixit, M., **Upadhyay, R.,** Chand, J. C., and D. Fife. "Pseudo-Isotherm: A Revised Concept of Desorption Phenomena of Coal Bed Gas Reservoirs Integrating Isotherm, Material Balance, and Pressure for Optimized Field Development." Paper presented at the GOTECH, Dubai, UAE, May 2024. doi: https://doi.org/10.2118/219177-MS
4. Kumar, A., **Upadhyay, R.**, Raj Kiran, Rajak, V.K. (2024), Reliable Estimation of CO2 Storage Capacity in Geological Structures of India, Presented at India Energy Week 2024, Goa, India
5. **Upadhyay, R.**, 2021. "Webinar on Sustainable Solutions for Upstream Petroleum Industry" organized by ONGC on 7th May 2021 as part of activities planned by Minitry of Petroleum and Natural Gas (MoPNG) under Bharat Ka Amrut Mahotsav to Celebrate 75 years of India's Independence.
6. Chattaraj, S., **Upadhyay R.**, Mohanty D., Singh, A.K., 2019. Reservoir Modeling for Prediction of Coalbed Methane Production – A Case Study from Raniganj Block, India. Presented in: MAS-2019 Department of Mathematics & Computing, IIT(ISM) Dhanbad
7. **Upadhyay, R**; Rai, S, "Extraction of CBM and CMM from coal bed and coal mine (opportunities and challenges) - A review", Presented in: National Seminar on Mining Industry: Challenges & Opportunities (MICO-2018) organized by Indian Mine Managers' Association during 1st – 2nd December 2018 at Dhanbad, India.
8. **Upadhyay, R.**, 2018. "Workshop on Coalbed Methane (CBM)" conducted for executives of Reliance Industries Limited from 19th – 20th December 2018 at Mumbai, India.