

Publications:

Publications in International Journals (SCI/SCIE/ESCI/SCOPUS):

1. Singh, Biri, and Anubhav Rawat , “Computational Fluid Dynamics-Based Analysis of Seepage Flow Through Concrete Dam” **Progress in Computational Fluid Dynamics, Inderscience (SCIE, IF=0.6) (Accepted 03/02/2025)**
2. Kumar, Vipin, Ravi Prakash Tewari, and Anubhav Rawat. "Machine learning-based investigations of the effect of surface texture geometry on the wear behaviour of UHMWPE bearings in hip joint implants." *Biosurface and Biotribology* (24/10/2024). <https://doi.org/10.1049/bsb2.12085>
3. Vipin Kumar, , R P Tewari, and Anubhav Rawat, “Triboinformatics modelling of ultrahigh molecular weight polyethylene wear rate in total hip replacement using machine learning approaches” **Jurnal Tribologi**, Malaysian Tribology Society (MYTRIBOS) (Accepted for Publication 18/03/24, IF=1.5)
4. A. K. Sethi, A. K. Sharma, S. Chandra, Anubhav Rawat, The Photovoltaic (PV) Module Performance Analysis using Artificial Neural Network (ANN), EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 11, Issue 02, pp1273-1278, June, 2024 (Scopus)
5. V. Kalra, Abhishek Tiwari, Anubhav Rawat and Dharmendra Tripathi "In Silico Modelling of Mechanical Response of Breast Cancer Cell to Interstitial Fluid Flow” Proceedings of the royal society A-Mathematical physical and engineering sciences (Accepted for Publication 25/03/24, SCIE IF=3.5).
6. Vipin Kumar, , R P Tewari, and Anubhav Rawat “Tribological Evolution of Ultra-High Molecular Weight Polyethylene and Its Composites for Hip and Knee Replacement Implants: A Review” **Jurnal Tribologi**, Malaysian Tribology Society (MYTRIBOS) (Accepted for Publication 18/03/24, IF=1.5)
7. Prakash, Ankit, A. K. Upadhyay, and Anubhav Rawat. "Optimization of specific energy consumption in the high concentration slurry disposal pipelines for coal ash in thermal power plants." *International Journal of Coal Preparation and Utilization* (2024): 1-33. Taylor & Francis (Accepted 15/02/24, SCIE, IF=2.1). doi.org/10.1080/19392699.2024.2321362
8. K. Siwach, H. Kumar, N. Rawal, K. Dagar, and Anubhav Rawat, ' Prediction of Energy Performance of Residential Buildings Using Regularized Neural Models', Energy (Proceedings of the ICE) (09/10/2023, SCIE, IF 1.1).
9. Vipin Kumar, , R P Tewari, and Ramesh Pandey, Anubhav Rawat , 'Prediction of Wear in Total Knee Replacement Implants Using Machine Learning Techniques', Journal of Materials and Engineering, Accepted for publication (Scopus) (September 2023).
10. Pandey, Anuradha, Vipin Kumar, Anubhav Rawat, & Nekram Rawal, ' Prediction of Effect of Wind Speed on Air Pollution Level using Machine Learning Technique' Chemical Product and Process modelling-De Gruyter (Accepted , IF=0.9, 6/02/2023).
11. Kumar Vipin, Anubhav Rawat, & R P Tewari “Prediction of Wear in Total Knee Replacement Implants Using Artificial Neural Network” **International Journal of Biomedical Engineering and Technology** (Accepted, ESCI, Web of Science, 2023)
12. Rawat, Anubhav, S N Singh & V. Seshadri, ‘Computational Investigation on the Flow of High Concentration Fly Ash Slurries through Converging-Diverging Bends’, *International Journal of Coal Preparation and Utilization*. 42 (2022) , No.3, 623-643. (SCIE, Impact Factor: 2.697).

13. Anil Sethi, Anubhav Rawat and Vaibhav Srivastava, 'Artificial Neural Network Models for wall parameters on plug-1 flow characteristics through pipelines' *Journal of Engineering Research , ICMET (2022) (DOI: <https://doi.org/10.36909/jer.ICMET>) (SCIE, Impact Factor :0.64).*
14. Prakash, Ankit, Nishant Sati, Piyush Pratap Singh, Sajal KB Degala, Anubhav Rawat, Ramesh Pandey, and R. P. Tiwari. "Design of economic PODS to safeguard against contagious diseases using computational fluid dynamics (CFD)." In *Journal of Physics: Conference Series*, vol. 1849, no. 1, p. 012006. IOP Publishing, 2021.(Scopus)
15. Rawat, Anubhav, S. N. Singh, and V. Seshadri. "CFD analysis of the performance of elbow-meter with high concentration coal ash slurries." *Flow Measurement and Instrumentation* 72 (2020): 101724. (SCIE, Impact Factor 2.037).
16. Rawat, Anubhav, and Haim Kalman. "Particle velocity and stationary layer height analysis for modification and validation of particulate Plug-2 pressure drop model." *Powder Technology* 361 (2020): 867-879. (SCIE, Impact Factor: 5.134)
17. Kalman, Haim, and Anubhav Rawat. "Flow regime chart for pneumatic conveying." *Chemical Engineering Science* 211 (2020): 115256. (SCIE, Impact Factor 4.311).
18. Baghel Yatish Kumar, Jitendra Kumar, Brij Kishore, Anubhav Rawat, and Vivek Kumar Patel, 'Effect of Hot Forging on the Slurry Erosion Wear of AISI316 and AISI410 Steel' **Materials Today: Proceedings. Volume 26, Part 2**, 2020, Pages 1740-1745. (Scopus)
19. Kumar Jitendra, Gyanendra Tiwari, Yatish Kumar Baghel, Anubhav Rawat, and Vivek Kumar Patel 'Effect of Swirl Vanes Angle on Erosion Behavior of AISI 316 Pipe Bend' **Materials Today: Proceedings. Volume 26, Part 2**, 2020, Pages 781-786. (Scopus)
20. Rawat, Anubhav and Haim Kalman, 'Modification and Validation of Particulate plug-I pressure drop models' **Powder Technology (Elsevier)** 347 (2019):243-254 (SCIE, Impact Factor: 5.134)
21. Rawat, Anubhav, and Haim Kalman. "Detachment velocity: A borderline between different types of particulate plugs." *Powder Technology* 321 (2017): 293-300. (SCIE, Impact Factor: 5.134).
22. Rawat, Anubhav, S. N. Singh, and V. Seshadri. "Variation of physical and rheological properties of fly ash slurries with particle size and its effect on hydraulic transportation at high concentrations." *Particulate Science and Technology* 37, no. 2 (2019): 151-160. (SCIE, Impact Factor: 2.356)
23. Rawat, Anubhav, S. N. Singh, and V. Seshadri. "Erosion wear studies on high concentration fly ash slurries." *Wear* 378 (2017): 114-125. (SCIE, Impact Factor: 3.892)
24. Rawat, Anubhav, S. N. Singh, and V. Seshadri. "Computational methodology for determination of head loss in both laminar and turbulent regimes for the flow of high concentration coal ash slurries through pipeline." *Particulate Science and Technology* 34, no. 3 (2016): 289-300. (SCIE, Impact Factor: 2.356)
25. Kumar, Jitendra, Pankaj Israni, Anubhav Rawat, Vivek Kumar Patel 'Computational Investigation of Erosion Wear on Industrial Centrifugal Pump Handling Solid-Water Flows', **Tribology in Industry**, Serbian Tribology Society. Volume 42, No 3, 2020, Pages 382-399 (Scopus).

Publications in Conference Proceedings:

1. Prakash, Ankit, and Anubhav Rawat. "Computational Fluids Dynamics based Studies on Entrance length characteristics for High Concentration Particulate Coal Ash-Water Mixture Disposal." In *EPJ Web of Conferences*, vol. 340, p. 08018. EDP Sciences, 2025.
2. Sapna Gautam, N.R. Rawal, Anubhav Rawat, " studies on deposition characteristics of high concentrations-ash slurries at different ash and ash pond surface properties" Recycle-2025, IIT Guwahati, June 5-6, 2025.
3. Sapna Gautam, N.R. Rawal, Anubhav Rawat, " Characteristics of Thermal Power Plant Ash in Slurry form using Treated Waste Water from STP" HABIT-2025,28/02/2025 to 02/03/2025, MNNIT Allahabad. (Best paper Award)

4. Ankit Prakash A K Upadhyay and Anubhav Rawat, '**Analysis and Modelling of Specific Energy consumption Using CFD for Transportation of Coal Ash Slurries in Thermal Power Plants**' Oral presentation in NTPC O&M Conference (IPS 2024) held on 13th -14th Feb 2024 at Raipur.
5. Ankit Prakash, Mayank Srivastava, Biri Singh and Anubhav Rawat, 'Analysis of High Concentration Slurry Pipe Distribution Network using EPANET' 10th International and 50th (Golden Jubilee) National Conference on Fluid Mechanics and Fluid Power (**FMFP 2023**), **IIT Jodhpur**.
6. Singh, Biri, Upma Singh Parihar, Ankit Prakash , and Anubhav Rawat, 'The 2D Analysis of Seepage flow in Concrete Dam by CFD', 10th International and 50th (Golden Jubilee) National Conference on Fluid Mechanics and Fluid Power (**FMFP 2023**), **IIT Jodhpur**.
7. Pandey, Anuradha, Anubhav Rawat, and Nekram Rawal, 'Prediction of PM2.5 levels using ANN and MLR machine Learning Models for Lucknow in India', **International Conference on Technologies and Innovations for Sustainable Development (TISD-2023)**, Central Library, Motilal Nehru National Institute of Technology Allahabad, Prayagraj 27/10/2023-29/10/2023 .
8. Vipin Kumar, , R P Tewari, and Ramesh Pandey, Anubhav Rawat , 'Prediction of Wear in Total Knee Replacement Implants Using Machine Learning Techniques (**In SERBIATRIB '23, Kragujevac (Serbia)-(MAY 2023)**).
9. Anubhav Rawat and Haim Kalman, **Exploring suitability of plug flow mode pneumatic conveying for bottom ash disposal in thermal power plants**' Oral presentation in NTPC O&M Conference (IPS 2023) held on 13th -14th Feb 2023 at Raipur.
10. Ankit Prakash, Y.S.A.Venkataram, Kuldeep Singh, Anubhav Rawat, Ashutosh Kumar Upadhyay 'Energy Optimization of High Concentration Fly Ash Slurry Disposal through Pipelines in Laminar Regime' **AIR2022 held at MNNIT Allahabad during 6-7 May 2022**
11. Kumar, Vipin, Anubhav Rawat, R P Tewari 'Prediction of wear rate of polyethylene bearing in total hip replacement implants using linear regression model' Communicated to **AIR2022 held at MNNIT Allahabad during 6-7 May 2022**.
12. Pandey, Anuradha, Anubhav Rawat, Nekram Rawal, Debolina Basu, 'Prediction of Effect of Wind Speed on Air Pollution Level using Machine Learning Technique' International Conference on Technological Interventions for Sustainability jointly organized by Department of Chemical Engineering, (**CHEM CONFLUX2022**) MNNIT, Allahabad and Universiti Sains Malaysia during **April 14 -16, 2022**.
13. Ankit Prakash, Kuldeep Singh, Nishant Sati, Piyush Pratap Singh, R. P. Tewari, Anubhav Rawat, 'Performance evaluation of axial blood pump using computational fluid dynamics', **In Proc. 2nd National and 1st International Conference on Advances in Fluid Flow and Thermal Sciences (ICAFFTS-2021), SVNIT Surat, September 24-25, 2021, Paper Id: CMs-124**.
14. V. Srivastava, A. Prakash and A. Rawat 'To Predict Fictional Pressure-Drop of Turbulent Flow of Water Through a Uniform Cross-Section Pipe Using an Artificial Neural Network' **In Proceedings of VSAM-2021, 4-5 June ,2021, MNNIT-Allahabad**.
15. Ashwin Pandey, Ankit Prakash, Ramesh Pandey, Anubhav Rawat, 'Simulation and Analysis of Natural Gas Pipe Network for MNNIT (Allahabad) Staff Colony', **In Proceedings of VSAM-2021, 4-5 June ,2021, MNNIT-Allahabad**.
16. Rawat, Anubhav, and Haim Kalman, 'Velocities and Pressures Related to Single Plug Flow in Horizontal Pipe' **In Proc. 13th International Conference on Bulk Material Storage, Handling and Transportation (ICBMH 2019), 9-11 July 2019, Gold Coast, Australia**.
17. Rawat, Anubhav, and Haim Kalman, 'Modification of particulate plug models for dense phase plug conveying through pipelines' **35th Israeli Conference on Mechanical Engineering, Ben Gurion University of the Negev, Beer-Sheba, Israel. (9th -10th October 2018)**.
18. Rawat, Anubhav, S.N. Singh and V. Seshadri, 'Measurement of uneven wear in a rotary wear test rig for slurry flows', **In Proc. of 9th International Conference on Conveying and Handling of Particulate Solids (CHoPS-2018), 10th -14th September 2018, Greenwich, London**.

19. Rawat, Anubhav and Haim Kalman, 'Transverse and axial void fraction distribution across particulate plugs', **In Proc. of 9th International Conference on Conveying and Handling of Particulate Solids (CHoPS-2018), 10th -14th September 2018, Greenwich, London.**
20. Shishodia, B.S. and A., Rawat, "Design and Optimization of Cryogenic Transfer line for Tokamak", **In Proc. International Conference On Quality, Productivity, Reliability, Optimization and Modeling, IEEE, 2017, Manav Rachna International University, Faridabad, India.**
21. Rawat, Anubhav, S.N., Singh and V. Seshadri, 'Effect of Ageing, Unburnt Coal and Wetting Time on the Rheological Properties of Fly Ash Slurries at High Concentrations', **In Proc. Reliable flow of Particulate Solids (RELPOWFLO-V), 13th-15th June 2017, RELPOWFLO-V, Skien, Norway.**
22. Rawat, Anubhav and Haim Kalman, 'Detachment Velocity Analysis of Particulate materials for Static Plugs in Circular Pipes' **In Proc. Reliable flow of Particulate Solids (RELPOWFLO-V), 13th-15th June 2017, Skien, Norway.**
23. S N Singh, V Seshadri, Anubhav Rawat, Sunil Chandel 'High Concentration Slurry Disposal for Thermal Power Plants', **In Proc. of International Operation and Maintenance Conference (Organized by NTPC), (IPS)-2016, 13-15 February 2016, Noida, India.**
24. Rawat, Anubhav, S N Singh & V. Seshadri, 'A. Rawat, S N Singh, V. Seshadri,' Rheological Characteristics of Indian Coal Ash Slurries in Relevance to High Concentration Slurry Disposal Systems', Ref No.112, **In Proc. The 8th International Conference for Conveying and Handling of Particulate Solids (CHoPS-2015), 3-7th May 2015, Tel Aviv, Israel.**
25. Rawat, Anubhav, S N Singh & V. Seshadri, 'CFD Analysis of the Flow of High Concentration Coal Ash Slurries through Pipeline in both Laminar and Turbulent Regimes', Paper No.138, **Proc. 5th International and 41st National Conference on Fluid Mechanics & Fluid Power, 12-14 Dec 2014, IIT Kanpur, India.**
26. R.P., Singh, Anubhav Rawat, S. C. Gupta, and S. C. Sarkar, 'Recent Development in Shielded Metal Arc Welding Process', **In proc. of Recent advances in Mechanical engineering, RAME-2011, 25-26 March 2011, BSACET, Mathura, India.**

Books/Book Chapters:

1. Pandey, Anuradha, Anubhav Rawat, and Nekram Rawal, 'Prediction of PM2.5 levels using ANN and MLR machine Learning Models for Lucknow in India', **(TISD-2025), Taylor & Francis**
2. V. Srivastava, A. Prakash and A. Rawat 'To Predict Fictional Pressure-Drop of Turbulent Flow of Water Through a Uniform Cross-Section Pipe Using an Artificial Neural Network' **Recent advances in Applied Mechanics.2022**
3. Ashwin Pandey, Ankit Prakash, Ramesh Pandey, Anubhav Rawat, 'Simulation and Analysis of Natural Gas Pipe Network for MNNIT (Allahabad) Staff Colony', **Recent advances in Applied Mechanics.2022**
4. Adaption of *Engineering Fluid Mechanics, 12e* by Donald F. Elger, Barbara A. LeBret, Clayton T. Crowe, John A. Roberson (Wiley India)2022)
5. Adaption of Munson, Young and Okiishi's *Fundamentals of Fluid Mechanics*, 9e by Philip M. Gerhart, Andrew L. Gerhart, John I. Hochstein (Wiley India).(2021)
6. Rawat, Anubhav, and Bhagwat Singh Shishodia. "Onsite Technical and Economic Performance Evaluation of PWT (Pipeline Welding Technology): A Comparative Analysis with CRC-Evans Welding Technology." In *Advances in Interdisciplinary Engineering*, pp. 85-95. Springer, Singapore, 2019.
7. Rawat, A., S. N. Singh, and V. Seshadri. "Effect of radius ratio on pressure drop across a 90 bend for high concentration coal ash slurries." *WIT Transactions on Engineering Sciences* 105 (2016): 65-74., U.K.

1. Research Poster Presentation:

- 1 Presented Research Poster entitled '**Transportation Characteristics of High Concentration Coal Ash Slurries through Pipelines**' in *Open House 2014* at IIT Delhi, India.