

## CURRICULUM VITAE

**Dr. Adarsh Kumar Arya**

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### PROFILE SNAPSHOT

- A competent professional with nearly 20 years of experience in Research and Development / delivering lectures to chemical engineering graduates and post graduates.
- Exercises judgment within generally defined practices in selecting methods & techniques for obtaining teaching solutions; ensuring compliance to quality measures and maintenance requisite documentation as well as records
- Skills in managing the administrative activities entailing student management, faculty appraisal/training and upholding of the institution's motto
- Proficiency in **teaching Oil and Gas Pipeline and core chemical engineering subjects** to Chemical Engineering Graduate and post graduate students.
- Experience in developing curriculum to accommodate different learning styles & maximize students' comprehension
- **Received Annual Research award in 2021 at University of Petroleum & Energy Studies**
- **Received Rs. 1 lakh Research Award for research contribution at University Of Petroleum and Energy Studies, Dehradun in 2022.**
- **Received Research Excellence Award in 2024 at HBTU Kanpur. The award was given by Hon'ble Governor Uttar Pradesh 'Smt. Anandiben Patel'.**
- Worked on live projects with **T.A.N.A.P. Gas Pipeline Project at Worley Parsons.**
- Exposure in planning and organizing day-to-day research activities and resolving the procedural problems as appropriate to the timely accomplishment of research objectives
- An effective leader with proven skills in leading teams during the project phase, training & guiding team members and enabling knowledge sharing among the team
- **Provided consultancy to Indraprastha Gas Grid Limited (IGGL) on Compatibility study on Transporting Hydrogen in Natural Gas Pipeline Networks.**
- **Handled project on ' Production of Anhydrous ethanol using salt'.**

### ORGANIZATIONAL EXPERIENCE

**\*Working as ' Associate Professor in the Department of Chemical Engineering at Harcourt Butler Technical University, Kanpur, India**

**\*Additional Responsibility:** Worked as Associate Dean in Incubation and Startups.

**\* Coordinator for Prime Minister- Uchhatar Siksha Abhiyan (Uttar Pradesh)**

**\*Worked Since Jul '08 to June 2022 with Petroleum University – University of Petroleum and Energy Studies, Dehradun Chemical Engineering Department as 'Assistant Professor(Selection Grade)'.**

**\* Worked at Worley Parsons Mumbai in TANAP Gas pipeline project.**

**\*Worked At IMSEC Ghaziabad as Lecturer.**

#### Key Result Areas:

- Fostering a healthy learning atmosphere in class and responding to all classroom queries spontaneously, empathic manner; ensuring discipline by observing students' work, behaviour and attendance.
- Guiding university subjects to undergraduate & postgraduate students; reviewing pre-set educational goals, objectives & classroom instructional programs, establishing academic/other performance

objectives

- Evaluating curriculum, teaching methods & programs for designing subjects to determine their effectiveness and efficiency, thereby ensuring that Institute activities
- Teaching as per academic curriculum to students, recognizing, respecting & nurturing the creative potential of each student; preparing exercises, questionnaires and assignments for students at various levels

#### **Highlight:**

- Project and Placement Coordinator **for M.Tech. Chemical & M.Tech. Pipeline Engineering (Spl. Process Design) at University of Petroleum & Energy Studies, Dehradun.**
- **Co-ordinator** M.Tech. Chemical Engineering, HBTU Kanpur.
- Teaching Design of 'Pipeline Transportation of Oil and Gas' to M.Tech. Pipeline students from last seven years.
- Taught Fluid Mechanics, Mass Transfer, Heat Transfer, Chemical Reaction Engineering, Material and Energy Flow Computation to graduate and post-graduate chemical Engineering students.
- Faculty Convenor-IIChE(Indian Institute of Chemical Engineers)

## **PUBLICATIONS**

### **Recent Major Publications**

- Arya, A. K. (2021). Optimal operation of a multi-distribution natural gas pipeline grid: an ant colony approach. *Journal of Petroleum Exploration and Production Technology*, 11(10). <https://doi.org/10.1007/s13202-021-01266-3>
- Arya, A. K. (2022a). A comparison of the MOGA and NSGA-II optimization techniques to reduce the cost of a biomass supply network. *Materials Today: Proceedings*. <https://doi.org/10.1016/j.matpr.2021.12.161>
- Arya, A. K. (2022b). A critical review on optimization parameters and techniques for gas pipeline operation profitability. In *Journal of Petroleum Exploration and Production Technology*. Springer Science and Business Media Deutschland GmbH. <https://doi.org/10.1007/s13202-022-01490-5>
- Arya, A. K. (2022c). Application and Challenges of “Blockchain Technology” in the Oil and Gas Industry. In *Blockchain Technology: Exploring Opportunities, Challenges, and Applications*. <https://doi.org/10.1201/9781003138082-11>
- Arya, A. K., Gautam, S., & Yadav, S. (2022). Impact of Hydrogen Embrittlement in Pipeline Structures—A Critical Review. In *Springer Proceedings in Materials* (Vol. 15). [https://doi.org/10.1007/978-981-19-2572-6\\_31](https://doi.org/10.1007/978-981-19-2572-6_31)
- Arya, A. K., Gautam, V., & Kumar, A. (2024). Comparative Studies of Stochastic Techniques to Minimize the Cost of Biomass Supply Networks. In *Communications in Computer and Information Science* (pp. 383–392). Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-53085-2\\_30](https://doi.org/10.1007/978-3-031-53085-2_30)
- Arya, A. K., & Honwad, S. (2016). Modeling, simulation, and optimization of a high-pressure cross-country natural gas pipeline: Application of an ant colony optimization technique. *Journal of Pipeline Systems Engineering and Practice*, 7(1). [https://doi.org/10.1061/\(ASCE\)PS.1949-](https://doi.org/10.1061/(ASCE)PS.1949-)

- Arya, A. K., & Honwad, S. (2017). Multiobjective optimization of a gas pipeline network: an ant colony approach. *Journal of Petroleum Exploration and Production Technology*, 8(4), 1389–1400. <https://doi.org/10.1007/s13202-017-0410-7>
- Arya, A. K., Jain, R., Yadav, S., Bisht, S., & Gautam, S. (2022). Recent trends in gas pipeline optimization. *Materials Today: Proceedings*, 57, 1455–1461. <https://doi.org/10.1016/J.MATPR.2021.11.232>
- Arya, A. K., Katiyar, R., Senthil Kumar, P., Kapoor, A., Pal, D. B., & Rangasamy, G. (2023). A multi-objective model for optimizing hydrogen injected-high pressure natural gas pipeline networks. *International Journal of Hydrogen Energy*. <https://doi.org/10.1016/j.ijhydene.2023.04.133>
- Arya, A. K., Kumar, A., Pujari, M., & Pacheco, D. A. d. J. (2023). Improving natural gas supply chain profitability: A multi-methods optimization study. *Energy*, 282, 128659. <https://doi.org/10.1016/j.energy.2023.128659>
- Arya, D. A. K., & Honwad, D. S. (2019). Optimal Operation of a Multi Source Multi Delivery Natural Gas Transmission Pipeline Network. In *energyo*. De Gruyter. <https://doi.org/10.1515/energyo.0022.00029>
- Gupta, S. S., Arya, A. K., & Vijay, P. (2019). Designing a model for optimization of maintenance and inspection efforts against third party damage to cross country Pipelines in India. *International Journal of Innovative Technology and Exploring Engineering*, 8(12). <https://doi.org/10.35940/ijitee.L3209.1081219>
- Pujari, M., P, R., Manyam, S. R., & Arya, A. K. (2023). Lead Adsorption by Fly Ash Geopolymer: Isotherm, Kinetic, and Thermodynamic Studies. *Chemical Engineering & Technology*, 47(2), 283–288. <https://doi.org/10.1002/ceat.202300259>
- Pujari, M., Srikanth, K., Sunil, K., & Arya, A. K. (2022). Equilibrium, kinetic, and thermodynamic study on biosorption of indigo carmine using *Hypnea musciformis* algae. *Environmental Progress & Sustainable Energy*, 42(2). <https://doi.org/10.1002/ep.13990>
- Sarkar, A., & Arya, A. K. (2022). A Survey on Optimization Parameters and Techniques for Crude Oil Pipeline Transportation. In *Smart Innovation, Systems and Technologies* (Vol. 292). [https://doi.org/10.1007/978-981-19-0836-1\\_43](https://doi.org/10.1007/978-981-19-0836-1_43)
- Thakur, A. K., Arya, A. K., & Sharma, P. (2020). The science of alternating current-induced corrosion: a review of literature on pipeline corrosion induced due to high-voltage alternating current transmission pipelines. *Corrosion Reviews*, 38(6). <https://doi.org/10.1515/corrrev-2020-0044>
- Thakur, A. K., Arya, A. K., & Sharma, P. (2021). Corrosion of pipe steels under alternating currents. *International Journal of Electrochemical Science*, 16. <https://doi.org/10.20964/2021.12.22>
- Thakur, A. K., Arya, A. K., & Sharma, P. (2022a). Analysis of cathodically protected steel pipeline corrosion under the influence of alternating current. *Materials Today: Proceedings*, 50, 789–796. <https://doi.org/10.1016/j.matpr.2021.05.548>

- Thakur, A. K., Arya, A. K., & Sharma, P. (2022b). Prediction and mitigation of AC interference on the pipeline system. *Corrosion Reviews*, 40(2). <https://doi.org/10.1515/corrrev-2021-0061>
- Tiwari, A. K., Prasad, N., Kapoor, A., Arya, A. K., & Pal, D. B. (2023). Sustainable valorization of Cascabela thevetia fruit peel and seed waste biomass: characterization and thermo-kinetic analysis. *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-023-05066-z>
- Arya, A. K., Shreya, Ponnuchamy, M., Pal, D. B., & Kapoor, A. (2024). Algae Biomass Valorization for Wastewater Remediation. In *Clean Energy Production Technologies* (pp. 251–271). Springer Nature Singapore. [https://doi.org/10.1007/978-981-97-0840-6\\_10](https://doi.org/10.1007/978-981-97-0840-6_10)
- Kapoor, A., Kumar, S., Arya, A. K., Nishad, V., Fatma, H., Gupta, A., & Singh, S. (2024). Microfluidic biosensors for the detection of foodborne pathogens. In *Biosensors for Foodborne Pathogens Detection* (pp. 223–246). Elsevier. <https://doi.org/10.1016/b978-0-323-95586-7.00010-1>
- Pal, D. B., Kapoor, A., Arya, A. K., Arya, R. K., & Tiwari, A. K. (2024). Characterization and sustainable utilization of Punica granatum and Citrus limetta peels: Insights for biomass valorization. *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-024-05553-x>
- Arya, A. K., Kapoor, A., Pal, D. B., Awasthi, A., Sastry, S. V. A. R., & Kumar, S. (2024). Molten Salt Thermal Storage Systems for Solar Energy Concentrators. *Solar Energy Concentrators: Essentials and Applications*, 219-234.
- Arya, A. K., & Kapoor, A. (2024). Environmental Consequences of Wind Energy Technologies. *Wind Energy Storage and Conversion: From Basics to Utilities*, 17-32.
- Arya, A. K., Shreya, Ponnuchamy, M., Pal, D. B., & Kapoor, A. (2024). Algae Biomass Valorization for Wastewater Remediation. In *Sustainable Clean Energy Production Using Waste Biomass: Sustainable Energy Production and Utilization* (pp. 251-271). Singapore: Springer Nature Singapore.
- Shingan, B., Pujari, M., Arya, A. K., & Singh, V. (2024). Optimizing Air Separation and LNG Cold Utilization: Energy Savings, Exergy Efficiency, and System Reliability. *Chemical Engineering and Technology*. <https://doi.org/10.1002/ceat.202400085>
- Arya, A. K., Sastry, S. V. A. R., Sneha, S., Gupta, B., & Pujari, M. (2024). Recent Developments in Leak Detection Techniques for Pipelines: A Critical Evaluation. In *Sustainability in Chemical Processes through Digitalization and Green Chemistry Approaches*.

No. of Patents: 5

**No. of Consultancies: 1**

#### ACADEMIC DETAILS

- Ph.D (Chemical Engineering/ Natural Gas Pipeline Optimization) from University of Petroleum & Energy Studies, Dehradun in 2015 (**Phd Topic: Multi-objective Optimization of A Multi-nodal Gas Pipeline**).
- Piping Engineering from I.I.T. Mumbai, 2008
- M.Tech. (Chemical Engineering) from H.B.T.I., Kanpur in 2005. (First Division with Honors)
- GATE qualified with Percentile 93.31 (A.I.R. 381) in 2004.
- B.Tech. Chemical Engineering from B.I.E.T., Jhansi in 2002.(First Division)
- 12<sup>th</sup> from J.I.C. Lucknow in 1997 (First Division).

- 10<sup>th</sup> from J.I.C. Lucknow in 1995 (First Division)
- Guided scholar for PhD (**As Main Supervisor**) -SS GUPTA . PhD Thesis Topic-Optimizing Maintenance and Inspection Practices to minimize 3rd Party Damage Probability in Liquefied Petroleum Gas Pipeline (LPG) In INDIA(**PhD COMPLETED**)
- Guided PhD (**As main Supervisor**)- Ajit Thakur. PhD Topic. Aletrnating Current Induced Corrosion In pipelines(**PhD completed**)
- Guiding One PhD scholar (As Single Supervisor); Topic: Computational Studies in Hydrogen Blend Natural Gas Transportation
- Guiding one student from Oil India Limited- Guwahati (Topic- Optimization of multicrude pipeline networks)

## CERTIFICATIONS

- Attended a workshop on 'Defect Assessment & Maintenance in pipelines' organized by PETROFED from July 26-28 July 2010.
- Obtained certificate on regional workshop and brainstorming session on water quality management and river bank certification, organized by U.C.O.S.T. on 4 Feb 2012.
- Obtained certificate of attending one week short term program on retail management practices in Indian industries at I.M.S. Ghaziabad from April 2008 to ay 2, 2008.
- Attended Complimentary seminar on MATLAB and Simulink for engineering education on 20 July 2012.
- Certification for successfully attending certificate courses on petroleum refining and petrochemicals organized by Petrotech and I.I.P.M. Gurgaon.
- Certificate for poster presentation on the production of anhydrous ethanol using salt at I.M.S. Ghaziabad.
- Certification for participating as a committee member at I.M.S., Ghaziabad from 18-19 January.
- Certification on organizing INTERFACE-2004 at H.B.T.I. Kanpur.
- Certification course on 'Transportation of Oil and Gas Through Pipelins' organized by the Petroleum Federation of India from 08-10 July 2009.
- Internship at Shriniwas Fertilizers Limited from 25/06/2001 to 02/08/2001.
- Member and Faculty Advisor of Indian Institute of Chemical Engineers at University of Petroleum & Energy Studies, Dehradun.
- Attended. Faculty Development program from NTTR Bhopal

## PERSONAL DETAILS

Marital Status:	Married
Languages Known:	Hindi, English
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