Barun Kumar Nandi

Associate Professor
Department of Fuel Minerals and Metallurgical Engineering
Indian Institute of Technology (ISM) Dhanbad
Dhanbad-826004, Jharkhand
Email: barun@iitism.ac.in
Phone : 0326-2235139, Mobile: +91-9471192317

Educational Qualification

Ph.D. (Chemical Engineering): Indian Institute of Technology Guwahati

M.E. (Chemical Engineering): Jadavpur University, Kolkata

B.E. (Chemical Engineering): Jadavpur University, Kolkata

Professional Experience

Lecturer: Durgapur Institute of Advanced Technology and Management, Durgapur, West Bengal (11th Sep 2009 - 21st July 2010).

Assistant Professor: Jaypee University of Engineering and Technology, Guna, Madhya Pradesh (6th August 2010-20th December 2013).

Assistant Professor: Indian Institute of Technology (ISM) Dhanbad (30th December 2013-12 April 2022).

Associate Professor: Indian Institute of Technology (ISM) Dhanbad (13 April 2022 Onwards).

Specialization and Research Interest

Fuel and Mineral Processing, Coal combustion, Clean Coal Technology, Renewable Energy, Water Treatment Technologies, Membrane Separation Process, Advanced Separation Processes

Courses Taught at IIT (ISM) Dhanbad

Combustion Engineering, Clean Coal Technology, Power Plant Engineering, Fuel Technology, Liquid and Gaseous Fuels, Furnace and Refractories, Numerical Methods and Computer Applications, Alternate Energy Sources, Biofuels, Characterization of Materials.

Research and Development Project

1. Treatment of contaminated drinking water using a hybrid low-cost process. Funded by INNO INDIGO, through DBT. November 2015-May 2019. (PI, Sanctioned Amount: 33.882 Lakh)
2. Comparative assessment of coal combustion characteristics, Funded by Santaldih Thermal Power Station (WBPDCL) January 2019 to December 2020. (Co-PI, Sanctioned Amount: 4.72 Lakh)
3. Identification of optimum blending ratio of two coals for santaldih thermal power station, Funded by Santaldih Thermal Power Station (WBPDCL) January 2019 to December 2020. (Co- PI, Sanctioned Amount: 4.60 Lakh)
4. Development of empirical relationship between proximate analysis & heat value of Patherdih reject coal, Funded by BCCL, July 2019-December 2019 (Co- PI, Sanctioned Amount: 2.59 Lakh)

5. Development of modalities for fixation of import parity price for washed coking coal produced by BCCL, Jointly funded by BCCL-SAIL, January 2021 to July 2021. (Co- PI, Sanctioned Amount: 88.26 Lakh).

6. Effect of coal quality on the performance of JSL thermal power plant. Funded by Jindal Stainless Limited, February 2022 to January 2024 (PI, Sanctioned Amount: 22.06 Lakh).

7. Assessment of Properties of Coal Imported by Damodar Valley Corporation, Funded by Damodar Valley Corporation, April 2022 to March 2024 (PI, Sanctioned Amount: 68.83 Lakh).

8. Assessment of losses and improvement of efficiency of Jajpur thermal power plant, JSL. Funded by Jindal Stainless Limited, February 2022 to January 2024 (Co-PI, Sanctioned Amount: 12.39 Lakh).

9. Assessment of Imported Coal Properties of Damodar Valley Corporation, Funded by Damodar Valley Corporation, August 2023 to July 2024 (PI, Sanctioned Amount: 12.783 Lakh).

Major Consultancy Project

1. Heat auditing of coal handling plant of Southern Generating Station: Funded by CESC, Kolkata, September 2014 to July 2015, (Co-CI, Sanctioned Amount: 7.84 Lakh)

2. Physico-chemical characterization and combustibility studies of a Jhama coal, Funded by BCCL, November 2015-July 2015, (Co- CI, Sanctioned Amount: 5.72 Lakh).

3. Physico-chemical characterization and combustibility studies of selected coal from BCCL command area, Funded by BCCL, November 2015-July 2015, (Co- CI, Sanctioned Amount: 9.16 Lakh).

4. Profiling of Heat Values along the Coal flow Chain in Vindhyachal STPP of NTPC, Funded by NTPC Vindhyachal, December 2015-November 2016. (Co- CI, Sanctioned Amount: 36.1 Lakh).

5. Profiling of Heat Values along the Coal flow Chain in Singrauli STPP of NTPC, Funded by NTPC Singrauli, December 2015-November 2016. (Co- CI, Sanctioned Amount: 37.83 Lakh).

6. Profiling of Heat Values along the Coal flow Chain in Rihand STPS of NTPC, Funded by NTPC Rihand, December 2015-November 2016. (Co- CI, Sanctioned Amount: 56.63 Lakh).

7. Effect of weathering on physico-chemical characteristics of coal at Vindhyachal STPP, Funded by NTPC Vindhyachal, December 2015-November 2016. (Co- CI, Sanctioned Amount: 4.13 Lakh).

8. Effect of weathering on physico-chemical characteristics of coal at Rihand STPP, Funded by NTPC Rihand, June 2016-May 2017. (Co- CI, Sanctioned Amount: 3.67 Lakh).

9. Coal quality evaluation for pricing purpose, Funded by PWC Limited, July 2019 to December 2019, (Co- CI, Sanctioned Amount: 18.7 Lakh).

10. Technical advice on suitability of limestone for flue gas desulphurization in thermal power plant, Funded by Balajee Steel Udyog, September 2023 to December 2023. (CI, Sanctioned Amount: 0.944 Lakh)

PhD Students:

Dr. Dibyajyoti Behera, Degree awarded March 2021

Dr. Daisy Das, Degree awarded April 2021

Dr. Aditi Agarwal, Degree awarded April 2022

Dr. Pritam Kumar, Degree awarded October 2022

Dr. Subhajit Aich, Degree awarded November 2022

Dr. Deepak Kumar, Degree awarded November 2022

Dr. Bhupendra Singh Ken, Degree awarded, April 2023

Dr. Ajay Kumar, Degree awarded September 2023

Dr. Prabhat Jaiswal, Degree awarded March 2024

Dr. Deepak Kumar Paswan, Degree awarded May 2024.

Mr. Kundan Kumar, Thesis Submitted November 2024.

Publications in International Journals

1. **B. K. Nandi**, A. Goswami, A. K. Das, B. Mondal, M. K. Purkait, Kinetic and equilibrium studies on the adsorption of crystal violet dye using kaolin as an adsorbent, **Separation. Science & Technology** 43 (2008) 1382–1403.
2. **B. K Nandi**., R. Uppaluri, M.K. Purkait, Preparation and characterization of low cost ceramic membranes for microfiltration applications, **Applied Clay Science** 42 (2008) 102-110.
3. **B. K Nandi**., R. Uppaluri, M.K. Purkait, Effects of dip coating parameters on the morphology and transport properties of cellulose acetate ceramic composite membranes, **Journal of Membrane Science**, 330 (2009) 246-258.
4. **B. K. Nandi**, A. Goswami, M. K. Purkait, Adsorption characteristics of brilliant green dye on kaolin, **Journal of Hazardous Materials**, 161 (2009) 387-395.
5. **B. K. Nandi**, A. Goswami, M. K. Purkait, Removal of cationic dyes from aqueous solution by kaolin: kinetic and equilibrium studies, **Applied Clay Science** 42 (2009) 583-590.
6. **B. K. Nandi,** B. Das, R. Uppaluri, M. K. Purkait, Microfiltration of mosambi juice using low cost ceramic membrane**, Journal of Food Engineering,** 95 (2009) 597-605.
7. **B. K. Nandi**, R. Uppaluri, M.K. Purkait, Treatment of oily waste water using low cost ceramic membrane: Flux decline mechanism and economic feasibility, **Separation Science & Technology,** 44 (2009) 2840 – 2869.
8. **B. K. Nandi,** B. Das, R. Uppaluri, M. K. Purkait, Preparation and characterization of inexpensive submicron range inorganic microfiltration membranes, **Membrane Water Treatment,** 1(2010) 121-137.
9. **B. K. Nandi**, A. Moparthi, R. Uppaluri, M.K. Purkait, Treatment of Oily Wastewater Using Low Cost Ceramic Membrane: Comparative Assessment of Pore Blocking and Artificial Neural Network Models, **Chemical Engineering Research and Design**, 88 (2010) 881–892.
10. **B. K. Nandi**, R. Uppaluri, M.K. Purkait, Microfiltration of Stable Oil-in-water Emulsions using Kaolin based Ceramic Membrane and Evaluation of Fouling Mechanism, **Desalination and Water Treatment,** 22 (2010) 133–145
11. **B. K. Nandi**, R. Uppaluri, M.K. Purkait, Identification of optimal membrane morphological parameters during microfiltration of mosambi juice using low cost ceramic membranes, **LWT - Food Science and Technology,** 44 (2011) 214-223.
12. **B. K. Nandi**, B. Das, R. Uppaluri, Clarification of Orange Juice using Ceramic Membrane and Evaluation of Fouling Mechanism, **Journal of Food Process Engineering** 35(2012) 403-423..
13. **B. K. Nandi**, K. Goyal, A. Yadav, S. Mishra, Treatment of colored domestic wastewater by electrocoagulation, **International Journal of Chemical Sciences** 10 (2012) 2127-2138.

14. S. K. Tripathi, R. Tyagi, **B. K. Nandi**, Removal of Residual Surfactants from Laundry Waste Water: A Review, **Journal of Dispersion Science and Technology,** 34 (2013) 1526–1534.
15. **B. K. Nandi**, S. Patel, Removal of pararosaniline hydrochloride (Basic red 9) dye from aqueous solution by electrocoagulation: Experimental, kinetics and modeling, **Journal of Dispersion Science and Technology**, 34 (2013) 1713–1724.
16. N. Sharma, **B. K. Nandi**, Utilization of Sugarcane Baggase, an Agricultural Waste to Remove Malachite Green Dye from Aqueous Solutions, **Journal of Materials and Environmental Science**, 4 (2013) 1052-1065.
17. D.K. Mondal, **B. K. Nandi**, M.K. Purkait, Removal of mercury (II) from aqueous solution using bamboo leaf powder: Equilibrium, thermodynamic and kinetic studies, **Journal of Environmental Chemical Engineering**, 1 (2013) 891–898.
18. **B. K. Nandi**, S. Patel, Removal of brilliant green from aqueous solution by electrocoagulation using aluminum electrodes: Experimental, kinetics and modeling, **Separation Science and Technology** Technology 49 (2014) 601-612.
19. N. Sharma, G.K. Agarwal, **B. K. Nandi**, Experimental studies on adsorption of malachite green dye by sugarcane bagasse, **International Journal of Environment and Waste Management**, 18 (2016) 239-252
20. **B. K. Nandi**, S. Patel, Effects of operational parameters on the removal of brilliant green dye from aqueous solutions by electrocoagulation, **Arabian Journal of Chemistry, 10 (2017)** S961-S968 **.**
21. S. Kumar, **B. K. Nandi**, C. Guria, A. Mandal, Oil removal from produced water by ultrafiltration using polysulfone membrane, **Brazilian Journal of Chemical Engineering**, 34 (2017) 583-596
22. B. S. Ken, **B. K. Nandi**, Cleaning of high sulfur Indian coal by oil agglomeration and leaching, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects**, 40 (2018) 1027-1034.
23. B. S. Ken, **B. K. Nandi**, Effect of some operational parameters on desulphurization of high sulphur Indian coal by KOH leaching, **Energy Exploration & Exploitation**, 36 (2018) 1674-1691.
24. B. S. Ken, S. Aich, V. K. Saxena, **B. K. Nandi**, Combustion behavior of KOH desulphurised coals assessed by TGA-DTG, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects**, 40 (2018) 2458-2466.
25. D. Das, **B. K. Nandi**, Defluoridization of drinking water by electrocoagulation: Process optimization and kinetic study, **Journal of Dispersion Science and Technology**, 40 (2019) 1136-1146.
26. D. Behera, **B.K.Nandi**, S. Bhattacharya, Chemical properties and combustion behavior of constituent relative density fraction of a thermal coal, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects,** 41 (2019) 654-664.
27. B. S. Ken, **B. K. Nandi**, Desulfurization of high sulfur Indian coal by oil agglomeration using Linseed oil, **Powder Technology**, 342 (2019) 690–697.
28. S. Aich, **B. K. Nandi,** S. Bhattacharya, Effect of weathering on physico-chemical properties and combustion behavior of an Indian thermal coal, **International Journal of Coal Science & Technology,** 6 (2019) 51–62 .
29. S. Aich, **B. K. Nandi,** S. Bhattacharya, Utilization of sal leaves and sal leaves char to improve the combustion performance of reject coal, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects,** 41 (2019) 2299-2312.
30. **B. K. Nandi**, S. Bhattacharya, Effect of weathering and stockpile design on physicochemical properties of an Indian thermal coal, International Journal of Coal Preparation and Utilization, 42 (2022) 275-285.
31. D. Das, **B. K. Nandi**, Removal of Fe (II) ions from drinking water using Electrocoagulation (EC) process: Parametric optimization and kinetic study, Journal of Environmental Chemical Engineering 7 (2019) 103116.
32. S. Aich, **B. K. Nandi,** S. Bhattacharya, Effects of eucalyptus leaves blending on combustion characteristics of an Indian reject coal, Energy Sources, **Part A: Recovery, Utilization, and Environmental Effects,** 44 (2022) 1437-1448.

33. D. Behera, **B. K. Nandi**, S. Bhattacharya, Studies on combustion characteristics of density by density analyzed coal, **Journal of Energy Resources Technology**, 2020, 142(1):012301.
34. D. Das, **B. K. Nandi**, Simultaneous removal of fluoride and Fe (II) ions from drinking water by electrocoagulation, **Journal of Environmental Chemical Engineering** 8 (2020) 103643.
35. D. Behera, **B. K. Nandi**, S. Bhattacharya, Variations in combustion properties of coal with average relative density and functional groups identified by FTIR analysis, I**nternational Journal of Coal Preparation and Utilization**, 42 (2022) 1695-1711.
36. S. Aich, D. Behera, **B. K. Nandi,** S. Bhattacharya, Relationship between proximate analysis parameters and combustion behavior of high ash Indian coal, **International Journal of Coal Science & Technology**, 7 (2020) 766–777.
37. D. Das, **B. K. Nandi**, Removal of hexavalent chromium from wastewater by electrocoagulation (EC): Parametric evaluation, kinetic study and operating cost, **Transactions of the Indian Institute of Metals, 73 (**2020) 2053-2060.
38. A Agarwal, A Samanta, **B. K Nandi,** A Mandal, Synthesis, characterization and performance studies of kaolin-fly ash-based membranes for microfiltration of oily waste water, **Journal of Petroleum Science and Engineering**, 194 (2020) 107475
39. D. Das, **B. K. Nandi**, Arsenic removal from tap water by electrocoagulation: Investigation of process parameters, kinetic analysis and operating cost, **Journal of Dispersion Science and Technology,** 42 (2021) 328-337.
40. D. Das, **B. K. Nandi**, Treatment of iron ore beneficiation plant process water by electrocoagulation, Arabian Journal of Chemistry (2021) 14, 102902
41. D. Behera, **B. K. Nandi**, Effect of coal particle density on coal properties and combustion characteristics, **Powder Technology** 382 (2021) 594–604.
42. S. Aich, **B. K. Nandi,** S. Bhattacharya, Combustion characteristics of high ash Indian thermal, heat affected coal and their blends, **International Journal of Coal Science & Technology** 8 (2021) 1078–1087.
43. P. Kumar, **B. K. Nandi**, Effect of rice husk blending on combustion characteristics of high ash Indian coal analyzed in TGA, **International Journal of Coal Preparation and Utilization,** 42 (2022) 3698-3711.
44. P. Kumar, **B. K. Nandi**, Combustion characteristics of high ash Indian coal, wheat straw, wheat husk and their blends, **Materials Science for Energy Technologies** 4 (2021) 274–281.
45. P. Kumar, **B. K Nandi,** Combustion characteristics of coal, petroleum coke, biomass, and their ternary blends, **Journal of Energy Resources Technology** 144 (2022) 012302-1.
46. P. Kumar, **B. K Nandi,** Effects of Mustard Husk, Wheat Straw, and Flaxseed Residue Blending on Combustion Behavior of High Ash Coal and Petroleum Coke Blends, **Journal of Energy Resources Technology** 144(9) (2022) 092101.
47. P. Kumar, **B. K Nandi,** Effect of rice husk and petroleum coke blending on combustion characteristics of high ash Indian coals, **Biomass Conversion and Biorefinery** 13 (2023) 13065-13079.
48. D. Kumar, V. K. Saxena, H. P. Tiwari, **B. K. Nandi**, A. Verma, V. K. Tiwary, Variability in Metallurgical Coke Reactivity Index (CRI) and Coke Strength after Reaction (CSR): An Experimental Study, **ACS Omega** 7, 2 (2022) 1703–1711.
49. D. Das, **B. K. Nandi**, Removal of co-existing Fe (II), As (V) and fluoride ions from groundwater by electrocoagulation, **Groundwater for Sustainable Development**, 17 (2022) 100752.
50. D. K. Paswan, A. Anand, **B.K. Nandi,** S. Gautam, Drying Characteristics and Kinetics Behavior of Indian Coal Slurries Using Natural Draft Tray Dryer, **International Journal of Coal Preparation and Utilization**, 43 (2023) 1313-1334.
51. A. Kumar, V.K.Saxena, R.Thangavel, **B. K. Nandi**, A dual effect of surface roughness and photocatalysis of crystalline TiO2-thin film for self-cleaning application on a photovoltaic covering glass, **Materials Chemistry and Physics**, 289 (2022), 126427.

52. P Kumar, **B. K. Nandi**, Assessment of combustion characteristics of high ash Indian coal, petroleum coke and their blends for cement industry using TGA, **Cleaner Chemical Engineering** 5 (2023), 100091.
53. P. K. Jaiswal, **B. K. Nandi**, V. K. Saxena, Potential of coal fly ash as low-cost culture medium for cultivation of microalgae chlorococcum and sustainable nutrient recovery from CFA culture medium, **Environment, Development and Sustainability**, 26 (2024) 8045–8063.
54. P Kumar, **B. K Nandi**, Effect of coal particle density on combustion kinetics of Indian coal, **International Journal of Coal Preparation and Utilization**, 44 (2024) 432-450
55. P Kumar, **B. K Nandi**, Impact of wheat straw and petroleum coke blending on combustion behavior of high ash coal, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects** 45 (2023) 3125-3137.
56. A. Kumar, D. Nayak, P. Sahoo, **B. K. Nandi**, V. K. Saxena, R. Thangavel, Fabrication of porous and visible light active ZnO nanorods and ZnO@TiO2 core–shell photocatalysts for self-cleaning applications, **Physical Chemistry Chemical Physics**, 25 (2023) 16423-16437
57. D. Das, **B. K. Nandi,** Simultaneous removal of coexisting Fe(II) and Cr(VI) from wastewater by electrocoagulation (EC) process Using Different types of Connection modes, **Water Conservation Science and Engineering** 8 (2023) 25.
58. A Kumar, D Nayak, **B. K Nandi,** V. K Saxena, R Thangavel, Visible light active and self-cleaning SiO2/N-TiO2 heterostructure surface with high transmittance for solar module glass cover: Experimental and DFT insights, **Journal of Environmental Chemical Engineering** 11 (2023) 111117.
59. A. Sengupta, S. K. Das, **B. K. Nandi**, P. Sharma, Characterizing pulverized coal combustion for high-ash content Indian coal, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects** 46 (2024) 244-261.
60. S. Aich, **B. K. Nandi,** A. Sengupta, P. Sharma, Modeling the co-combustion of bi-fuel blends in a drop tube furnace: A numerical approach, Proceedings of the Institution of Mechanical Engineers, Part A: **Journal of Power and Energy**, 238 (2024) 661-675.
61. D. Behera, P. Kumar, **B. K. Nandi,** Effect of Mean Specific Gravity on Combustion Characteristics of Selected High Ash Indian Coal, **Natural Resources Research**, 33 (2024) 727-741.
62. A. Kumar, D. Nayak, P. Sahoo, **B. K. Nandi**, R. Thangavel, Synthesis of type-II TiO2 nanoparticle/ZnO nanorods heterostructure for enhanced photocatalytic activity, **Materials Letters** 367 (2024) 136672.
63. K. Kumar, **B. K. Nandi**, V. K. Saxena, R. Kumar, Experimental studies of thermal behavior, engine performance and emission characteristics of biodiesel / diesel / 1 pentanol blend in diesel engine, **Alexandria Engineering Journal** 106 (2024) 411–421.
64. S. Aich, **B. K. Nandi,** Identification of combustion characteristics of high ash Indian coal, rice straw, rice straw char and their blends, **Process Safety and Environmental Protection** 193 (2025) 1243–1260.
65. K. Kumar, R. Kumar, **B. K. Nandi,** A thermodynamic approach to assess the sustainability of third-generation sunflower waste cooking oil in DICI engine along with exergoeconomic and enviroeconomic perspective, **Biofuels,** https://doi.org/10.1080/17597269.2024.2429051

Publications in International Conference

1. S. Aich, **B. K. Nandi,** S. Bhattacharya "Combustion Characteristics of Coal Blends" in 2017 SME Annual Conference at Denver, USA, February 19-22, 2017.
2. D. Behera, **B. K. Nandi,** A. Anupam, S. Bhattacharya, "Combustion characteristics of a low volatile thermal coal" in Impacts of Fuel Quality on Power Production and the Environment. Venue: Lake Louise, Alberta, Canada, September 24-28, 2018.

3. S. Aich, **B. K. Nandi,** S. Bhattacharya, "Combustion characteristics of co-fired high ash Indian coal and biomass" in Impacts of Fuel Quality on Power Production and the Environment. Venue: Lake Louise, Alberta, Canada, September 24-28, 2018.
4. D. Das, **B. K. Nandi,** Removal of hexavalent chromium from synthetic and real wastewater by Electrocoagulation (EC): Parametric evaluation, kinetic study and operating cost, Advances in Process Metallurgy (APM2019), July 4-5, 2019, Indian Institute of Science, Bangalore, India.
5. S. Aich, **B. K. Nandi,** S. Bhattacharya, Co-Combustion characteristics in blending of segun leaves with high ash cleaning plant reject, International Conference on Energy and Sustainable Development 2020 (ICESD – 2020), February 14-15, 2020. Jadavpur University, Kolkata
6. D. Behera, **B. K. Nandi,** Effect of petrographic constituents on combustion properties of coal, International Conference on Energy and Sustainable Development 2020 (ICESD – 2020), February 14-15, 2020. Jadavpur University, Kolkata
7. A Das, S. Aich, **B. K. Nandi,** S. Bhattacharya, Production and characterization of biochar from different tree leaves, International Conference on Energy and Sustainable Development 2020 (ICESD – 2020), February 14-15, 2020. Jadavpur University, Kolkata.
8. P. Kumar, **B. K. Nandi,** S. Bhattacharya, Utilization of petroleum coke to improve the combustion performance of high ash coal, International Conference on Energy and Sustainable Development 2020 (ICESD – 2020), February 14-15, 2020. Jadavpur University, Kolkata.
9. D. Das, **B. K. Nandi,** Removal of As(V) from ground water by electrocoagulation (EC), International Conference on Energy and Sustainable Development 2020 (ICESD – 2020), February 14-15, 2020. Jadavpur University, Kolkata.
10. P. Kumar, **B. K. Nandi,** Effect of rice husk, wheat straw and wheat husk blending on combustion behavior of reject coal, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela
11. D. K. Paswan, **B. K. Nandi**, S. Gautam, Effect of temperature on drying behavior of coal slurry in natural and forced draft tray dryer, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela
12. S. Aich, **B. K. Nandi,** S. Bhattacharya, Influence of rice straw blend on the combustion performance during oxyfuel co-combustion of high ash plant reject, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela
13. A. Das, **B. K. Nandi**, Pyrolysis of peepal tree leaves for the production of biofuels, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela
14. S. Aich, **B. K. Nandi,** Washability characteristics study of high ash reject of Pathardih coal washery, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela.
15. D. Das, **B. K. Nandi,** Electrocoagulation (EC) process for removal of coexisting fluoride and iron from groundwater: Operating parameters and kinetic study, 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-2020) March 5-7, 2020, NIT Rourkela.
16. S. Aich, **B. K. Nandi,** "Effect of segun leaves and torrefied segun leaves on the combustion characteristics of a high ash Indian coal" International Conference on Bioprocess for Sustainable Environment and Energy, NIT Rourkela, Rourkela, India, June 20-24, 2022.
17. D. K. Paswan, **B. K. Nandi**, S. Gautam, "Effect of temperature and sample size on drying behavior of Gujarat Kutch lignite in natural draft tray dryer" International Conference on Bioprocess for Sustainable Environment and Energy, NIT Rourkela, Rourkela, India, June 20-24, 2022

18. S. Aich, **B. K. Nandi,** Computational modeling of co-combustion of eucalyptus leaves and eucalyptus leaves char with reject coal in a drop tube furnace, 29th International conference on the Impact of Fuel Quality on Power Production and Environment, Garmisch-Partenkirchen, Germany, September 02-06, 2024.
19. P. Kumar, **B. K. Nandi,** Combustion characteristics of high ash coal, petroleum coke, jackfruit leaves char and their ternary blends" 29th International conference on the Impact of Fuel Quality on Power Production and Environment, Garmisch-Partenkirchen, Germany, September 02-06, 2024.
20. S. Aich, **B. K. Nandi,** Numerical Modelling of Co-Combustion of Segun Leaves and Segun Leaves Char with High Ash Indian Coal, Advances in Sustainable Solutions for Energy Transitions (ASSET 2025), IIT Guwahati, 2-4 January 2025.

Book Chapter

1. D.Ghosh, B. K. Nandi, M. Rahaman, M. K. Purkait, Treatment of Fluoride-Contaminated Water by Electrocoagulation Followed by Microfiltration Technique, Advanced Nanomaterials for Wastewater Remediation, CRC Press: Taylor and Francis, Chapter 2, Page 19-59.

2. B. K. Nandi, M. Rahaman, R. Singh, M. K. Purkait, Microfiltration Membranes: Fabrication and Application, Membrane Technology Sustainable Solutions in Water, Health, Energy and Environmental Sectors. ISBN: 9781138095427, CRC Press : Taylor and Francis, 2018: Chapter 9; Page 191-212.

3. K. Hardya, V.K. Chandaliya, P. S. Dash, B. K. Nandi, D. Kumar, B. Choudhury, V. Kuntal, Simulation of Sulfur Recovery Unit Using Aspen Plus, New Materials; Processing and Manufacturability: Fabrication and Processing of Advanced Materials, John Wiley & Sons, Inc., 2024, Chapter 11; Page 207-225.

Invited Lecture Delivered

1. **Co-firing characteristics of coal and biomass,** Specialized Hands-on-Training cum Workshop on Agro-biomass Sampling and Characterization Techniques for Thermal Power Plant Applications, SSS NIBE, Jalandhar, 4-5 July 2024.