Name of the faculty: Dr Ashim Kumar Basumatary

Present position: Associate Professor

Educational details:

- Ph.D. in Chemical Engineering from Indian Institute of Technology, Guwahati, Assam
- M.Tech. in Petroleum Technology (Petroleum Refining and Petrochemical) from Dibrugarh University, Dibrugarh.
- B.E. in Chemical Engineering from Regional Engineering College (NIT) Durgapur, W.B., India

Areas of interest

- Ceramic Composite Membrane based Separations
- Petroleum Processing
- Environmental Pollution
- Renewable Energy
- Heat Transfer Operation
- Adsorption

List of publications

International Journals:

1. **Ashim Kumar Basumatary**, R. Vinoth Kumar, Aloke Kumar Ghoshal and G. Pugazhenthi, Synthesis and characterization of MCM-41-ceramic composite membrane for the separation of chromic acid from aqueous solution, Journal of Membrane Science, 475 (2015) 521-532.

2. R. Vinoth Kumar, **Ashim Kumar Basumatary**, Aloke Kumar Ghoshal and G. Pugazhenthi, Performance assessment of analcime-C zeolite-ceramic composite membrane by separation of Cr (VI) from aqueous solution, RSC Advances, 5 (2015) 6246-6254.

3. **Ashim Kumar Basumatary**, P. Vikram Singh, R. Vinoth Kumar, Aloke Kumar Ghoshal and G. Pugazhenthi, Development and characterization of MCM-48 ceramic composite membrane for the removal of Cr (VI) from aqueous solution, ASCE Journal of Environmental Engineering, 0733-9372 (2015) C4015013-11.

4. **Ashim Kumar Basumatary**, Aloke Kumar Ghoshal and G. Pugazhenthi, Performance assessment of MCM-48 ceramic composite membrane by separation of $AlCl_3$ from aqueous solution, Ecotoxicology and Environmental Safety, 134 (Part 2) (2016) 398-402.

5. **Ashim Kumar Basumatary**, Partha Pratim Adhikari, Aloke Kumar Ghoshal and G. Pugazhenthi, Fabrication and performance evaluation of Faujasite (FAU) zeolite composite ultrafiltration membrane by separation of trivalent ions from aqueous solution, Environmental Progress & Sustainable Energy,35 (2016) 1047-1054.

6. **Ashim Kumar Basumatary**, R. Vinoth Kumar, Aloke Kumar Ghoshal and G. Pugazhenthi, Cross flow Ultrafiltration of Cr (VI) using MCM-41, MCM-48 and Faujasite (FAU) zeolite ceramic composite membranes, Chemosphere, 153 (2016) 436-446.

7. **Ashim Kumar Basumatary**, Aloke Kumar Ghoshal and G. Pugazhenthi, Removal of $FeCl_3$ from aqueous solution by ultrafiltration using mesoporous MCM-48 ceramic composite membrane, Separation Science and Technology,51 (2016) 2038-2046.

8. **Ashim Kumar Basumatary**, R. Vinoth Kumar, Kannan Pakshirajan and G. Pugazhenthi, Removal of trivalent metal ions from aqueous solution via crossflow ultrafiltration system using zeolite membranes, Journal of Water Reuse Desalination, 6 (2017) jwrd 2016211.

9. **Ashim Kumar Basumatary**, R. Vinoth Kumar, Kannan Pakshirajan and G. Pugazhenthi, Iron(III) removal from aqueous solution using MCM-41 ceramic composite membrane, Membrane Water Treatment, 7(6) (2016) 495-505.

10. B. J. Das, S. Das, R. Boro, B. P. Nath and **Ashim Kumar Basumatary**, Study and Fabrication on Heat Efficient Stove of Low Smoke Emission, Journal of the Institution Engineers (India) Series E, 2021, https://doi.org/10.1007/s40034-020-00197-8.

11. **Ashim Kumar Basumatary**, Kakali Priyam Goswami, Madu Purnima, Bannya Deka, G. Pugazhenthi, Fabrication and characterization of low-cost tubular ceramic membrane for microfiltration of oily wastewater, Journal of Water Chemistry and Technology, 2022, Vol.44, No.3, pp.175 – 181.

12. R. Vinoth Kumar, **Ashim Kumar Basumatary**, G. Pugazhenthi, Fabrication of Industrially feasible zeolite membrane for the removal of hexavalent chromium, Int. Journal Environment and Sustainable development, January 2022, DOI: 10.1504/IJESD.2022.10047194.

13. Antaripa Deka, Akib Rasul, Ananya Baruah, Hirak Malakar, **Ashim Kumar Basumatary,** Treatment of Dairy Wastewater with Tubular Ceramic Membrane, Material Today: Proceeding, (Online available 1 November 2022) 72 (2023), 2773-2779.

14. Dhritiman Das, **Ashim Kumar Basumatary**, Experimental Investigation and optimization of municipal waste biomass for applicative approach in electrochemical energy storage, International Journal of Innovative Science and Research Technology, 16 Jan 2024, Article digital number IJISRT24AN868.

Conferences:

1. **Ashim Kumar Basumatary**, A. K. Ghoshal and G. Pugazhenthi, Fabrication and removal of $AlCl_3$ with FAU zeolite composite membrane from aqueous solution, National Conference on Challenges in Environmental Research, 4-6 June 2015, IIT Guwahati, Assam, India.

2. **Ashim Kumar Basumatary**, A. K. Ghoshal and G. Pugazhenthi, Performance Assessment of MCM-48 Ceramic Composite Membrane by Separation of $AlCl_3$ from Aqueous Solution, International Conference on Green Technology for Environmental Pollution Prevention and Control (ICGTEPC 2014), 27-29 September 2014, National Institute of Technology Tiruchirappalli (NITT), India.

3. **Ashim Kumar Basumatary**, Partha Pratim Adhikari, A. K. Ghoshal and G. Pugazhenthi, Development and Performance Evaluation of MCM-41-Ceramic Composite Membrane by Separation of $AlCl_3$ from Aqueous Solution, International Conference on Advances in Chemical Engineering & Technology (ICACE '14), 16-18 October 2014, Thangal Kunju Musaliar College of Engineering, Kollam, Kerala, India.

4. **Ashim Kumar Basumatary**, Partha Pratim Adhikari, R. Vinoth Kumar, A. K. Ghoshal and G. Pugazhenthi, Synthesis of FAU-type Inorganic Ultrafiltration Membrane, National Seminar on Recent trends in Fundamental and Applied Chemical Sciences (RTFACS-2014), 19-21 November 2014, Department of Chemistry, Dibrugarh University, Dibrugarh, Assam.

5. **Ashim Kumar Basumatary**, A. K. Ghoshal and G. Pugazhenthi, Preparation and Evaluation of MCM-48 Ceramic Composite Membrane by Separation of $FeCl_3$ from Aqueous Solution, Frontiers in Chemical Sciences (FICS 2014), 4-6 December 2014, IIT Guwahati, Assam.

6. **Ashim Kumar Basumatary**, R. Vinoth Kumar, Partha Pratim Adhikari, Aloke Kumar Ghoshal and G. Pugazhenthi, Ultrafiltration of $FeCl_3$ from aqueous solution using MCM-41 ceramic composite membrane, International Conference on Environment (ICENV 2015), Penang, Malaysia, 18-19 August 2015.

7. R. Vinoth Kumar**, Ashim Kumar Basumatary** and G. Pugazhenthi, Preparation of Faujasite (FAU) Zeolite Membrane on Low Cost Porous Tubular Ceramic Substrate for Removal of Chromium from Wastewater, International Conference on Waste Management - RECYCLE - 2016, ICWM-WWWT-24 118, 1-2 April 2016, Indian Institute of Technology Guwahati, Assam, India.

8. **Ashim Kumar Basumatary**, Kunal Pant, R. Vinoth Kumar, Aloke Kumar Ghoshal and G. Pugazhenthi, Ceramic supported Faujasite (FAU) zeolite composite membrane for the removal of Cr (VI) from aqueous solution, International Conference on Membrane Technology and its Applications (MEMSEP-2017), 21-23 February 2017, National Institute of Technology, Tiruchirappalli, India.

9. B. J. Das, S. Das, R. Boro, B. P. Nath, **Ashim Kumar Basumatary**, Study and fabrication of Heat Efficienet Stove with Low Smoke Emission, National Conference on Advances in Chemical Engineering and Science (ACES-2019), 07 – 08 March 2019, Dept. of Chemical Engineering, IISER, Bhopal, India.

10. K. Das, P. Bharali, D. Nath, G. Bharadwaj, **Ashim Kumar Basumatary**, G. Pugazhenthi, Fabrication and design of heat efficient low smoke stove, National Conference on Issues and Challenges in Water treatment and Allied Research for Sustainable environment water 2020, 23 – 25 January, Centre for Environment, IIT Guwahati, Assam.

11. B. Deka, I. Noon, P. Chakhap, T. K. Boro, **Ashim Kumar Basumatary**, An inexpensive Tubular Ceramic Membrane Development and Characterization, 3rd National Conference on Recent Advances in Science and Technology (NCRAST 2020), 17-19 August 2020, Assam Science and Technology University under TEQIP-III.

12. K. Das, P. Bharali, D. Nath, G. Bharadwaj, **Ashim Kumar Basumatary**, Design and Comparison of a Heat Efficient Stove with Reduced Smoke, 3rd National Conference on Recent Advances in Science and Technology (NCRAST 2020), 17-19 August 2020, Assam Science and Technology University under TEQIP-III.

13. S. Buragohain, D. J. Barman, M. Borah, S. Brahma, **Ashim Kumar Basumatary**, D. Talukdar, Synthesis and Modification of Epoxy Resin, National Conference on Advances in Chemical Engineering and Science (ACES-2019), 07 – 08 March 2019, Dept. of Chemical Engineering, IISER, Bhopal, India.

14. **Ashim Kumar Basumatary**, Kakali Priyam Goswami, Madu Purnima, Bannya Deka, G. Pugazhenthi, Fabrication of low cost tubular membrane for the treatment of synthetic oily wastewater, National Conference on Recent Innovations in Chemical Engineering, 8 - 9 February 2021 (RICE-2021), Maulana Azad National Institute of Technology, Bhopal.

15. **Ashim Kumar Basumatary**, Parthajit. Bharali, Design of a Heat Efficient Stove with Reduced Smoke, National Conference on Recent Innovations in Chemical

Engineering, 8 - 9 February 2021 (RICE-2021), Maulana Azad National Institute of Technology, Bhopal.

16. Bharlin Sonowal, Naima Anjum Choudhury, Rajdeep Khersa, Sayeda Begum, **Ashim Kumar Basumatary,** Construction, experimental and comparative study of improved chulhas, Advances in Chemical Engineering and Science, 25-26 March 2022 (ACES-2022), Maulana Azad National Institute of Technology, Bhopal.

17. Antaripa Deka, Akib Rasul, Ananya Baruah, Hirak Malakar, **Ashim Kumar Basumatary**,Treatment of dairy wastewater with tubular ceramic membrane, Advances in Chemical Engineering and Science, 25-26 March 2022 (ACES-2022), Maulana Azad National Institute of Technology, Bhopal.

18. Rupranjan Hazarika, Arindam Duarah, Stella Gautam, Meghna Phukan, Chiranjib Das, **Ashim Kumar Basumatary**, Fabrication of low-priced clay tubular membrane for the treatment of rice beer wastewater, International Conference on Trends in Energy and Environmental Research for Sustainable Development (TEERSD-2023) November 02-03, 2023, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India.

19. **Ashim Kumar Basumatary**, Kunal Pant, Kakali P. Goswami, Vinoth Kumar R., G. Pugazhenthi, Chromium ion separation from aqueous solution using low cost FAU zeolite composite ceramic membrane, 3rd International Conference on Material Science and Engineering (ICMSE) November 23-25, 2023, Dr. B R Ambedkar National Institution of Technology, Jalandhar, Punjab, India.

Conference Proceeding:

Technical Volume cum Souvenir for Seminar:

1. A.B. Adhikary, S. Dolai, S. Baruah, I. Sharma, R. Das, A. K. Basumatary, Extraction of Bio-Diesel from Rubber Seed, All India Seminar on Bio-fuels, Bio-energy & Bio-economy, 2019.
2. A. Hazarika, H. S. Das, K. Mali, R. Deka, T. J. Sarma, A. K. Basumatary, Preparation of Biodiesel from Waste Mustard Oil, All India Seminar on Bio-fuels, Bio-energy & Bio-

economy, 2019.

List of R & D and consultancy projects handled:

1. Development and Fabrication of Tubular Ceramic membrane of Rs 10.6 Lakhs under NEQIP Project. Completed
2. Award of Collaborative Research Scheme for the project titled "Separation of Industrial Oil Wastewater with Tubular Ceramic membrane" under TEQIP-III of Rs. 2,25,000.00/- (Two Lakhs twenty thousand only. No.: ASTU/TEQIP-III/Collaborative Research/2019/2360. Completed
3. Award of Collaborative Research Scheme for the project titled "Modification and Enhancement of the low Smoke Heat Efficient Stove" under TEQIP-III of Rs.3,00,000.00/- (Three lakhs only). No.: ASTU/TEQIP-III/Collaborative Research/2019/2361. Completed.

Invited Talk:

- Dr. Ashim Kumar Basumatary delivered an Invited talk on Ceramic Composite Membrane processes for Wastewater at Short term course on Advance Materials for Engineering Applications in Assam Engineering College, 2016.
- Dr. Ashim Kumar Basumatary delivered an Invited talk on Wastewater treatment with Ceramic membrane at National Symposium cum workshop on Effectiveness of using natural filtration in water treatment in Bineswar Brahma Engineering College, 2018.
- Dr. Ashim Kumar Basumatary delivered an Invited Lecture on Pedagogy at Faculty Development Program (FDP) on Teaching Mathematics, Physics and Chemistry in Bineswar Brahma Engineering College, 2019.
- Dr. Ashim Kumar Basumatary delivered an Invited Lecture on Pedagogy at Faculty Development Program (FDP) on Engaging Today's Learner in GMIT, 2019.
- Dr. Ashim Kumar Basumatary delivered an Invited Lecture on Pedagogical Approaches OBE System at AICTE-ISTE Sponsored Refresher Programme on Outcome based Education and National Board of Accreditation in Assam Textile Institute, Guwahati, Assam, 2021
- Dr. Ashim Kumar Basumatary delivered an Invited Lecture on the topic **'Purification and Treatment of Industrial Wastewater with inexpensive inorganic Tubular**

Membrane' at *International Workshop and Conference on Membrane Assisted Water Purification Processes (ICMW-2023)*, March 9, 10, 11 and 12, 2023 Organized by International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala, India.

- Dr. Ashim Kumar Basumatary delivered an Invited Lecture on " Nano Structural Material and Polymers (ICNP2023)'' in the international Hybrid Conference held at Mahatma Gandhi University, Kottayam, Kerala, India from 12^{th} – 14^{th} May 2023.
- Dr. Ashim Kumar Basumatary delivered as an Invited Distinguished Speaker in 2^{nd} Global Summit on Advance in Earth Science and Climate Changes held on September 15-18, 2023 in London, UK.

List of courses Taught:

1. Heat Transfer Operation
2. Energy Engineering
3. Chemical Process Industries
4. Introduction to Unit Operation
5. Chemical Engineering Thermodynamics
6. Mechanical Operations
7. Process Dynamics and Control
8. Process Equipment Design
9. Environmental Pollution Control Engineering
10. Petroleum Production Technology
11. Advance Separation Techniques
12. Chemical Process Design and Drawing
13. Environmental Science
14. Mass Transfer Operation-I

Professor in charge: Training and Placement Cell, Assam Engineering College

Professional Membership:

Life membership of Indian Institute of Chemical Engineering (IICHE)

Coordinator of student chapter IICHE, Assam Engineering College, Jalukbari.

Life membership to Indian Membrane Society, LM- 234

Industrial Training: Have undergone one year indutrial training in Bongaiagoan Refinery and Petrochmicals (BGR), Dhaligaon

Others:

Achieved best oral presentation award for the paper entiled Ceramic supported Faujasite (FAU) zeolite composite membrane for the removal of Cr (VI) from aqueous solution in the International Conference on Membrane Technology and its Applications held in NIT Trichy.