

Shekhar Jyoti Pathak

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Education:

Indian Institute of Technology Guwahati Guwahati, India Ph.D. in Chemical Engineering	July 2017 – PRESENT
University of Petroleum and Energy Studies Dehradun, India M.TECH in Chemical Engineering (Specialization – Process Design Engineering) CGPA = 8.26/10	June 2015 – June 2017
Bineswar Brahma Engineering College Kokrajhar, India B.E. in Chemical Engineering Percentage = 81.43/100	July 2010 – June 2014
Cotton College Guwahati, India HSSLC (Science) Percentage = 77/100	2010
Tihu Highschool Nalbari, India HSLC Percentage = 89.33/100	2008

Research Interest:

Waste to energy conversion, Direct liquefaction technology, Co liquefaction of coal, biomass and electronic waste plastics, Kinetics study of direct liquefaction process, Techno-Economical analysis of liquefaction process, Process simulation

Skills:

Software: Microsoft office , ASPEN PLUS, ORIGIN, MATLAB, MathType

Laboratory: Gas chromatography, Rheometer, Thermogravimetric analyzer,
Rotary evaporator, Cyclone separator, Autoclave reactor operation

Research Experience:

Ph. D Research Guwahati, India
Direct Liquefaction and co liquefaction studies of renewable and July 2017- PRESENT
non-renewable feedstock

M.TECH. Research Dehradun, India
Development of Kinetic Model for Residue Hydro-conversion July 2016 - June 2017
Process

Undergraduate Research Kokrajhar, India
Manufacture of Acetaldehyde July 2013-June 2014

Professional Experience:

Indian Institute of Technology Guwahati Guwahati, India
Teaching Assistant July 2017 - 2022

1. Theory course (Mass transfer, Thermodynamics, Chemical reaction engineering)
 2. Lab course (Petroleum, Mechanical Operation)
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Trainings and Internships:

Indian Oil Corporation Limited Guwahati, India
“Overview of the refinery units” June 2013 - July 2013

Tocklai Tea Research Institute Jorhat, India
“Chemical Processes in Tea Manufacturing” July 2012

Research output:

REFEREED JOURNAL PAPERS:

Pathak, S.J., Gangal, A., Prabu, V., 2022. **Direct liquefaction of Discarded Printer Cartridge Plastics and its Kinetic Modelling.** *Fuel Processing Technology* 228, 107147. <https://doi.org/10.1016/j.fuproc.2021.107147>

PATENT PUBLICATION:

“A system and method for treating waste biomass and plastics to produce transportable liquid-fuel”; Patent number- 437189; Patentee- Indian Institute of Technology Guwahati; **Inventors:** 1. Prabu Vairakannu 2. Shekhar Jyoti Pathak; **Patent granted** - 04/07/2023 by The Patent office, Government of India.

BOOK CHAPTER PUBLICATION

Bhui, B, Pathak, S.J., Prabu V., 2022. **“Effective Utilization of E-waste in Advanced Energy technology processes”**. In **Electronic Waste Management: Policies, Processes, Technologies and Impact**. (currently with editor, Wiley publications after final submission)

INTERNATIONAL CONFERENCE PROCEEDINGS

- Shekhar Jyoti Pathak, Prabu V., **“Thermal Treatment of the Electronic Waste Plastics with Printed Circuit Boards and Characterisation of the Liquefied Oil”**. PYROASIA SYMPOSIUM 2023, organised by University of Nottingham, Kuala Lumpur, Malaysia, 26-28 June 2023. (attended physically for oral presentation)
- Shekhar Jyoti Pathak, Prabu V., **“Thermal treatment of the High ash Coal with Electronic Waste plastics and characterization of the co-liquefied oil”**. CHANIA 2023, 10th International Conference on Sustainable Solid Waste Management, organized by National Technical University of Athens, Chania, Crete Island, Greece, 21-24 June 2023 (attended physically for oral presentation)
- Shekhar Jyoti Pathak, Prabu V., **“Direct Liquefaction Study of Discarded Printer Cartridge Plastics”**. 3rd Sustainable Waste Management Conference, organised by American Institute of Chemical Engineers (AIChE) and Institute for Sustainability (IfS), 4-6 August 2021. (attended virtually/online for oral presentation)

NATIONAL CONFERENCE PROCEEDINGS

- Shekhar Jyoti Pathak, Prabu V., **“Direct Liquefaction of Electronic Waste Plastics and Process Simulation using Aspen Plus Simulator”**. National Conference of Science for Society, Environment and Sustainability (SSES-2022), organised by CSIR-NEIST, Jorhat, Assam, 24-26 November 2022. (attended physically for oral presentation)
- Shekhar Jyoti Pathak, Prabu V., **“Co liquefaction study of High Ash Coal and E-waste plastics for transportable oil production”**, Taiwan-India 2022 Exchange Workshop and Symposium on Intensifying the Connection of Sustainable Technology, organised by IIT Guwahati, India, 4-6 September 2022. (Poster presentation)

Achievements & Awards:

- 1 Assistantship, Ministry of Human Resource Development (MHRD) Govt. of India for Ph.D. IIT Guwahati, India
July 2017 - 2022
- 2 Anundoram Borooah Award'2008, in HSLC examination, awarded by the Govt. of Assam Nalbari, India
- 3 Lower Primary Merit Scholarship awarded by Govt. of Assam Nalbari, India
- 4 Amul Vidya shree Award in 2008 Nalbari, India
- 5 "Player of the Tournament" award in Ph. D Premier League, organized by RSF-EEE, SAB Ph. D council and sports board, IIT Guwahati , 2020 IIT Guwahati, India

Extra-curricular Activity

- 1 One day workshop on "Advances in Petroleum and Petrochemicals" organized by Department of Chemical Engineering, UPES in association with IICHE UPES Student Chapter, University of Petroleum and Energy Studies, Dehradun, India, 16th April, 2016 Dehradun, India
- 2 One day workshop on "Personal Enhancement Programme" held by University of Petroleum and Energy Studies, Dehradun, India, July, 2015 Dehradun, India
- 4 Participated in the event "A HOPE SEASON 6" (A Donation cum Cricket League), conducted by SAMANVAYA, Guwahati, India, 2019 Guwahati, India
- 6 Participated in "Inter Hostel Sports Competition Spardha -2020", conducted by Gymkhana Sports, IIT Guwahati, 2019-2020 Guwahati, India
- 7 Participated in "Ph. D Premier League (Cricket)", IIT Guwahati, 2018-2022 Guwahati, India
- 8 Participated in "Inter IIT sports meet", conducted by IIT Roorkee, India, 2022 Roorkee, India