

## **Curriculum Vitae**

Dr Barnali Chowdhury,  
Assistant Professor, Mechanical Engineering  
Tezpur University, Napaam, Tezpur -784028.  
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- Currently working as an Assistant Professor in the Department of Mechanical Engineering, School of Engineering, Tezpur University, Tezpur- 784028, Assam.
- Total Experience: 14+ years in academics and 5 years 8 months in industry.

### **Teaching Experience: 12.5+ years**

Sl. No.	Name of the Institute	Designation	Period	Duration	Subjects Taught
1.	Tezpur University (Dept. of Mechanical Engg., School of Engineering)	Assistant Professor	02 Feb 2015 to till date	9.5 years	Advanced Engineering Thermodynamics, Theory of Machines, Applied Thermodynamics II, Thermodynamics, Applied Thermodynamics I, Project Management, Elements of Project management (CBCT), Internal Combustion Engines, Engineering Mechanics, LAB: Turbomachinery, Thermal Science.
2.	NERIST (Dept. of Mechanical Engg.), Arunachal Pradesh	Assistant Professor	15 - 23 January 2015	09 days	
3.	Assam Don Bosco University (School of Technology, Dept. of Mechanical Engg.)	Assistant Professor	8 July 2014 to 13 January 2015	06 months	Engg. Thermodynamics, Engg. Graphics, Machine Drawing, LAB: Engg. Mechanics
4.	Royal School of Engineering and Technology, Assam Royal Global University (Dept. of Mechanical Engg.)	Assistant Professor	14 July 2011 to 7 July 2014	03 years	Basic Thermodynamics, Engineering Mechanics I, Applied Thermodynamics I, Applied Thermodynamics II, Fluid Mechanics I, Operations Research and Engineering Graphics II. LAB: Basic Mechanical Engg. Lab, Thermodynamics and Fluid Mechanics I.
5.	Assam Textile Institute, Guwahati.	Lecturer	August 1999 to August 2000	01 year 05 days	Engineering Drawing, Elements of Mechanical Engineering.

## Industry Experience- 5 years 8 months

Sl. No.	Name of the Organization	Designation	Period	Duration
1.	Nucleus Software Exports Limited, Noida, UP and Singapore.	Senior Software Engineer	16 January 2001 to 15 September 2006	5 years 8 months

## Industry work profile and achievements:

- Role of a Project Manager with functions viz. Project management, senior management reporting and handling multiple projects. It also included ensuring productive and preventive maintenance.
- As the Project leader had the responsibilities to train the team, design the test strategy mapped with the test data, test plan and execution schedule. The responsibilities also included simulation testing with real time scenarios, ensuring effective regression, resolution meetings, day end status reporting, Project Analysis, managing and reporting defect statistics, preparation of Release Package and product roll outs with impact analysis of open issues.
- Performed On site testing of Core banking project at Citibank, Singapore.
- Received the prestigious 'Nucleite of the Month' Award for outstanding performances as a project lead on two terms.
- Many successful implementations of FinnOne, the flagship core banking product for stalwarts such as SBI, ICICI, HDFC, Arab National Bank, American Express, Citi Financials, State Bank Of Mauritius (Mauritius), United Finance Company (Riyadh), Tokyo Star Bank (Japan), General Motors (Italy), Shinsei Bank (Japan), Singapore Investments and Finance Limited (Singapore) to name a few.

## Publications and Conferences

### • **Book Chapter:**

Sl No.	Year	Book Series	Chapter	Impact factor
1	2021	Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering, Springer	Optimizing Thermoforming of Refrigerator Liners to Reduce Liner Rejection Rate-A Case Study Using Fractional Factorial Design of Experiments	0.554
3.	2022	Recent Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering, Springer	Modeling and analysis of defect data – A time series approach	0.554
4.	2022	Recent Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering, Springer	Modeling and optimization of the performance parameters of a single pass shell and tube heat exchanger – An approach using Response Surface Methodology	0.554

### • **Journal:**

Sl No.	Year	Journal	Paper	Impact factor	Citation
1	2022	ADB- Journal of Engineering Technology (UGC CARE), ISSN: 2348-7305, Volume 11, Issue2, June, 2022, 0110203505(8PP)	Harjeet Kumar, Barnali Chowdhury, 'An application of design of experiments approach to statistically model and optimize performance parameters of a single cylinder four-stroke diesel engine'.		
2	2017	International Journal of Engineering Technology Science and Research, 4(1), 166-170, 2017. (ISSN: 2394-3386)	B. Chowdhury and SK Deb, 'Cause-Effect Diagram Versus System Dynamic Model- A case study of Manufacturing Defects Analysis'	2.120	
3	2016	International Advanced Research Journal in	S. Biswas and B. Chowdhury, 'Industrial	1.198	09

		Science, Engineering and Technology, pp. 176-179, March 2016. ISSN (Online) 2393-8021 ISSN (Print) 2394-1588. DOI 10.17148/IARJSET.2016.3337	Applications and Practices of Six Sigma: A Literature Review'		
4	2015	Journal of Material Science and Mechanical Engineering (JMSME) p-ISSN: 2393-9095; e-ISSN: 2393-9109 Vol 2, Issue 14, Oct- Dec 2015 32-34	S. Borah B. Chowdhury S. Gogoi and Z. Askary (2015). 'A Theoretical Study of Design Parameters of an Archimedean Screw Turbine'		03
5	2014	International Journal of Precision Technology, Inderscience publishers, ISSN :1755-2079, DOI: 10.1504/IJPTTECH.2014.060618 2014 Vol. 4 No. 1 2 69-80	Chowdhury B. Deb S. K. and Das PC 'Computer Aided Measurement System Analysis of Attribute Data: A Case of Liner Manufacturing'		01
6	2014	International Journal of Current Engineering and Technology, Inpressco, USA DOI: http://dx.doi.org/10.14741/ijcet/spl.2.2014.11 Special issue – 2, (2014) 54-61	Chowdhury B. Deb S. K. and Das PC 'Managing And Analyzing Manufacturing Defects—A Case Of Refrigerator Liner Manufacturing'	7.151	04

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- **Conference papers:**

Sl. No.	Year	Name of paper
1	2012	Chowdhury B. Deb S. K. and Das PC "Computer Aided Measurement System Analysis of Attribute Data: A Case of Liner Manufacturing" 4th International & 25th All India Manufacturing Technology, Design and Research Conference (AIMTDR), December 14 - 16, 2012.
2	2014	Chowdhury B. Deb S. K. and Das PC "Managing And Analyzing Manufacturing Defects—A Case Of Refrigerator Liner Manufacturing." International Conference on Advances in Mechanical Sciences (ICAMS2014), January 9-11 2014.
3	2014	Chowdhury B. Deb S. K. and Das PC "System Dynamics Model in the Analysis of Manufacturing Defects and Process Improvements." 5th International & 26th All India Manufacturing Technology, Design and Research (AIMTDR), IIT, Guwahati, December 12- 14, 2014, ISBN: 978-8-19274-612-8, pp 542 – 1 to 7
4	2014	Chowdhury B. and Deb S. K. "Comparative Analysis of Manufacturing System Using Cause – Effect Diagram and System Dynamics Model". 5th International & 26th All India Manufacturing Technology, Design and Research (AIMTDR), IIT, Guwahati December 12- 14, 2014. ISBN: 978-8-19274-612-8, pp 620- 1to 5
5	2015	S. Borah B. Chowdhury S. Gogoi and Z. Askary "A Theoretical Study of Design Parameters of an Archimedean Screw Turbine." National Conference On Recent Trends in Mechanical, Electrical, Electronics, Civil, Computer Science and Information Technology (MECIT-2015) held at Jawaharlal Nehru University, New Delhi. November 21-22, 2015 p-ISSN: 2393-9095; e-ISSN: 2393-9109
6	2015	S. Biswas and B. Chowdhury, "Industrial Applications and Practices of Six Sigma: A Literature Review." 3rd International Conference on Industrial Engineering (ICIE-2015) & 57th National Convention of Indian Institution of Industrial Engineering at Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat. November 26-28, 2015. ISBN: 978-93-84935-56-6.,
7	2017	Chowdhury, B. and Deb S.K. Analysis of manufacturing defects using FMEA – A step towards defect prevention. Proceedings of the National Conference on Sustainable Mechanical Engineering: Today And Beyond, SMETB at Mechanical Engineering Department, Tezpur University, Tezpur, 2017, March 25-26, 2017, ISBN: 978-93-84388-11-9
8	2017	Chowdhury, B. and Deb S.K. Cause-Effect Diagram Versus System Dynamic Model- A case study of Manufacturing Defects Analysis. Proceedings of the 2nd International Conference on Engineering Technology, Science and Management Innovation (ICETSMI – 2017), January 15, 2017 at NITRR, Chandigarh. ISSN: 2394-3386.
8	2017	Chowdhury, B. and Nath, K. K., Use of lean manufacturing for minimization of waste in a tea processing plant – A feasibility study. Proceedings of the National Conference on Sustainable Mechanical Engineering: Today And Beyond, SMETB at Mechanical Engineering Department, Tezpur University, Tezpur, 2017, March 25-26, 2017. ISBN: 978-93-84388-11-9
9	2019	Chowdhury, B. and Deb S.K. Application of Design of Experiments in the analysis of thermoforming process parameters that affect rejection rate of thermoformed refrigerator liners. Proceedings of the 5th International Conference on Industrial Engineering (ICIE-2019) & 61st National Convention of Indian Institution of Industrial Engineering, SVNIT, Surat, December 12-14, 2019. pp 292-297, vol 1. ISBN: 978-93-86238-81-8
10	2020	D. P. Bhuyan , S. Borthakur, B Chowdhury, J. Das. Effect of blade length and material on the performance of a wind turbine – An experimental study. National conference on Advances in Mechanical Engineering. Assam Engineering College, Guwahati, 6th march, 2020.

11	2020	B. Saikia and B Chowdhury. Heat transfer performance analysis of a shell and tube heat exchanger using Design of Experiments. National conference on Advances in Mechanical Engineering. Assam Engineering College, Guwahati, 6th march, 2020.
12	2020	B. Saikia and B Chowdhury. Analysis of Performance Parameters of a Shell and Tube Heat Exchanger using Design of Experiments. International Virtual Conference on 'Applied Science, Technology, Management and Language Studies, ASTMLS-2020, organized by Sona College of Technology, Salem - 636 005, December 11-12, 2020. Pp- 42
13	2020	Chowdhury, B and Deb SK. Time Series Analysis of Manufacturing Defects – A Case of Refrigerator Liner Manufacturing. Proceedings of the International Virtual Conference on 'Applied Science, Technology, Management and Language Studies, ASTMLS-2020, organized by Sona College of Technology, Salem - 636 005, December 11-12, 2020. Pp- 57
14	2020	Chowdhury B. & Deb SK. Optimizing Thermoforming of Refrigerator Liners to Reduce Liner Rejection Rate-A Case Study Using Fractional Factorial Design of Experiments, International Congress on Advances in Material Science and Engineering (CAMSE 2020), Shobhit University, Gangoh, 28-30 December 2020.
15	2020	Saikia B. & Chowdhury B. Analysis of heat transfer rate and overall heat transfer coefficient of a shell and tube heat exchanger using Design of Experiments, International Congress on Advances in Material Science and Engineering (CAMSE 2020), Shobhit University, Gangoh, 28-30 December 2020.
16	2021	Chowdhury B, Maitra S, Das M & Krishna K, Design and analysis of a water pumping device - A solution for hilly terrains, International Conference Sustainable Approaches In Food Engineering And Technology (SAFETy), Department of Food Engineering and Technology, Tezpur University, 24-25 June 2021.
17	2021	Chowdhury B and Borah M. Modeling and optimization of the performance parameters of a single pass shell and tube heat exchanger – An approach using Response Surface Methodology, 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE 2021), NIT Jalandhar, 17-19 July 2021.
18	2021	Chowdhury B. & Deb SK., Modeling and analysis of defect data – A time series approach, 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE 2021), NIT Jalandhar, 17-19 July 2021.

### Workshops / Conferences Attended:

Sl. No.	Seminar/ Workshop	Date	Title	Location
1	Industry Training	2004	<i>Six Sigma White Belt</i>	Nucleus Software Exports Limited, NOIDA
2	National Conference	December 23-24, 2011	<i>National Conference on Statistics and its Practices (NCSAP)</i>	GU, Guwahati
3	Regional Conference	March 16, 2012	<i>57th Annual Technical Session, Assam Science Society</i>	GU, Guwahati
4	FDP	May 19, 2012	<i>Conducting Effective Research and Development in Science and Technology</i>	RGI, Guwahati
5	International Conference	December 14- 16, 2012	<i>4th International &amp; 25th All India Manufacturing Technology, Design and Research (AIMTDR)</i>	Jadavpur University, Kolkata
6	International Workshop	February 21-22, 2013	<i>Wind Disaster Problems-Challenges Ahead</i>	RGI, Guwahati
7	Regional Seminar	April 4, 2013	<i>Workshop on Pedagogy “Challenges of Engineering Education in the NE and Role of Institutions and Teachers”</i>	AEC, Guwahati
8	National workshop	April 29-30, 2013	<i>National workshop on ‘Deployment and Use of NPTEL Courses’</i>	RGI, Guwahati
9	National Conference	May 9-10, 2013	<i>National Conference on Pure and Applied Mathematics (NCPAM)</i>	RGI, Guwahati
10	Quality Improvement Program	May 20-24, 2013	<i>‘Role of Numerical Methods in Scientific Computing’</i>	IIT, Guwahati
11	National Seminar	October 5, 2013	<i>“High Performance Computing (HPC) in academia and beyond “organized by CDAC</i>	AEC, Guwahati
12	International Conference	January 9-11, 2014	<i>1st International Conference on Advances in Mechanical Sciences 2014</i>	Vardhaman College of Engg., Hyderabad.
13	National Workshop	May 20-30, 2014	<i>Two- Week ISTE Main Workshop on “Fluid Mechanics”</i>	IIT Kharagpur
14	Workshop	June 5-6, 2014	<i>Enhancing Professionalism: Discover, Learn, Grow.</i>	RGI, Guwahati
15	Professional Development	July 15-16, 2014	<i>Transformation through reflection and critical Thinking</i>	ADBU, Guwahati

	Program			
16	Short Term Course	December 9-13, 2014	<i>Introduction to experimental, computational Mechanics</i>	AEC, Guwahati
17	International Conference	December 12- 14, 2014	<i>5th International &amp; 26th All India Manufacturing Technology, Design and Research (AIMTDR)</i>	IIT, Guwahati
18	Orientation Program	April 20-21, 2015	<i>Induction cum Orientation Program in 'Professional qualities in Education'</i>	IQAC, TU
19	Workshop cum training	March 26-29, 2015	<i>Six Sigma Green Belt Certification Program</i>	SOM, TU, Tezpur
20	National Workshop	June 2-12, 2015	<i>Two- Week ISTE Main Workshop on "Environmental Science"</i>	IIT Bombay
21	Short Term Course	20-24 July 2015	<i>Advances in Mechanical Engineering and Industrial Applications</i>	Mechanical Engineering, SOE, TU
22	Workshop cum Training	November 21, 2015	<i>Patent Search and Analysis</i>	TU IPR cell
23	Workshop	February 15-24, 2016	<i>Research Methodology</i>	Education Department, TU
24	Yoga Fest	May 13-14, 2016	<i>TU Yoga Fest</i>	Yoga center, TU
25	Workshop	November 24-25, 2016	<i>Massive open Online courses (MOOCs)</i>	Teaching Learning Center, TU
26	International Conference	January 15, 2017	<i>2<sup>nd</sup> International Conference on Engineering Technology, Science and Management Innovation (ICETSMI – 2017)</i>	NITTTR, Chandigarh
27	Workshop	January 31, 2017	<i>SWAYAM MOOCs and HACKHATHON</i>	AICTE at GU Institute of Science and Technology, 2017, GU
28	Workshop	March 15-27, 2017	<i>Application of Statistical Techniques in Environmental Science</i>	ISI, North East Centre, Tezpur
29	National Conference	March 25-26, 2017	<i>Sustainable Mechanical Engineering: Today And Beyond</i>	MED, SOE, TU
30	FDP (AICTE-NEQIP sponsored)	December 11-15, 2017	<i>Recent Trends in Computational and Experimental Mechanics</i>	Mechanical Engineering, SOE, TU
31	FDP - AICTE approved two week equivalent.	8 March - 12 April 2018	<i>Foundation Program in ICT for Education</i>	IIT Bombay
32	One day seminar	8 October 2018	<i>Aeronautical Systems</i>	DRDO at SOE, TU
33	One Day Workshop	21 May 2019	<i>Water: Issues, Challenges and Future Technologies for North East India</i>	Defense Research Laboratory (DRL), DRDO, Tezpur
34	International Conference	December 12-14, 2019	<i>5th International Conference on Industrial Engineering (ICIE-2019) &amp; 61st National Convention of Indian Institution of Industrial Engineering</i>	Mechanical Engineering, NIT, Surat
35	NPTEL AICTE FDP	Jan-Jun 2020	<i>NPTEL AICTE FDP on Six Sigma</i>	NPTel
36	One week FDP	19-23 June 2020	<i>Pedagogy of Scientific Writing, Reporting and Scholarly Networks</i>	Feroze Gandhi Institute of Engineering And Technology, Raebareli
37	International Conference	11-12 December 2020	<i>International Virtual Conference on Applied Science, Technology, Management and Language Studies (ASTMLS 2020)</i>	Sona College of Technology, Salem and IEEE
38	International Conference	28-30 December 2020	<i>Shobhit University Gangoh, STEM Research Society and NIT Jalandhar</i>	Shobhit University Gangoh, STEM Research Society and NIT Jalandhar
39	One week FDP	01-05 February 2021	<i>Research Methodology: Tools and Techniques - II</i>	Mechanical Engineering Department, SVNIT, Surat
40	One week FDP	01-05 March 2021	<i>Recent Development in Biomass to Energy</i>	NIT, Itanagar
41	International Conference	24-25 June 2021	<i>International Conference Sustainable Approaches In Food Engineering And Technology (Safety)</i>	Department of FET, Tezpur University
42	International Conference	17-19 July 2021	<i>2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE 2021)</i>	Department of Instrumentation and Control Engineering

				and Department of Chemical Engineering NIT Jalandhar
43	FDP - Short Term Course	27-31 October 2021	<i>Applications of Vibration and Heat Transfer in Mechanical Engineering (AVHTME 2021).</i>	NIT Manipur
44	One Week online Workshop	22-26 November 2021	<i>Statistical Techniques for Data Analysis</i>	NIT Jalandhar
45	One week short term course	28March-1April 2022	<i>Emerging Trends and Modeling in Advanced Functional Materials and Devices</i>	NIT Jalandhar
	5-day workshop	26-30 September 2022	<i>Innovation, Entrepreneurship and Start-Up for Young</i>	NIT Mizoram
46	UGC Sponsored online Faculty Induction Programme	06 February-14 March 2023	<i>Online Faculty Induction Programme</i>	UGC Human Resource Development Centre, Aligarh Muslim University, Aligarh
47	One-Week National Workshop	20-24 November 2023	<i>Emerging Tools and Technologies in Research</i>	Tripura University
48	Short Term Course	19- 28 February 2024	<i>NEP Orientation &amp; Sensitization Programme</i>	MMTTC, Tezpur University
49	01 day Industry-Academia Conclave	2 March 2024	<i>Recent trends and future perspectives in the Energy sector: Way forward for Engineering Education</i>	Department of Mechanical Engineering, Tezpur University
50	1-day Workshop	3 February 2024	<i>Elements of style in Technical Communication</i>	Department of Mechanical Engineering, Tezpur University

### Talks delivered:

- Invited lecture on 'Powerless water pumping device – A future for hill dwellers' in the workshop on '**Water: Issues, Challenges and Future Technologies for North East India**' under programme 'ARUNODAYA' on 21<sup>st</sup> May 2019 at Defense Research Laboratory (DRL), DRDO, Tezpur

### Resource Person:

- As an External Expert for Techno-Commercial Evaluation by DRL, DRDO, Tezpur.
- As Reviewer of manuscripts, 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE 2021), 17-19 July 2021, NIT Jalandhar.
- As Session Chair, 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE 2021), 17-19 July 2021, NIT Jalandhar.

### Awards and Accolades:

- Best Paper award:

Time Series Analysis of Manufacturing Defects – A Case of Refrigerator Liner Manufacturing, International Virtual Conference on 'Applied Science, Technology, Management and Language Studies, ASTMLS-2020, organized by Sona College of Technology, Salem - 636 005, December 11-12, 2020.

- STEM Research Society award:

Optimizing Thermoforming of Refrigerator Liners to Reduce Liner Rejection Rate-A Case Study Using Fractional Factorial Design of Experiments, International Congress on Advances in Material Science and Engineering (CAMSE 2020), Shobhit University, Gangoh, 28-30 December 2020.

## Organizational Activities:

- Senior Warden, Kopili Women's Hostel, TU. (Dec 2018 to Jan 2023)
- Associate Warden, Kopili Women's Hostel, TU. (Oct 2015 to Dec 2018)
- Webmaster, ME Department. (Feb 2015 – Jul 2017)
- Convenor, Departmental Grievance Redressal cell.
- Exam Coordinator, ME Department, Spring 2016.
- Member- Anti Ragging Cell, ME Department.
- Member- Students' Appeal Committee, ME Department.
- Students' Mentor
- MOOCs Coordinator (Jul 2017 – to till date)
- Observer, TUEE 2017.
- Member – Anti Ragging Squad, TU (Jul 2016-Jun 2017, Jul 2017 to till date)
- Marshal, TU Convocation 2017.
- Coordinator – IQAC report Preparation
- Coordinator – Class Time Table Preparation
- Coordinator – PhD and Mtech Admission
- Member – GSAT Team, **Gender Advancement for Transforming Institutions** (GATI), Pilot Project launched by the Department of Science and Technology (DST).

## PhD Thesis:

- A Critical Study of Enhancing Six Sigma Practice in Refrigerator Liner Manufacturing.

## Areas of Interest/Research:

- Thermal Engineering, Six Sigma, Statistical Optimization, Data Analysis.

## Projects Guided:

### • **M.Tech**

- Application of Six Sigma methodology to reduce Breakdown hours in a thermal power generation unit.
- Use of lean manufacturing in reducing wastes in a tea processing plant.
- Performance Analysis of an Induced Mechanical Draft Cooling Tower.
- Mathematical modeling and analysis of heat transfer parameters of a shell and tube heat exchanger using Design of Experiments (DOE).
- Mathematical Modelling, Analysis and Optimization of the Heat Transfer Parameters of a Shell and Tube Heat Exchanger Using Response Surface Methodology.
- Statistical Investigation and Optimization Of Performance and Emission Characteristics of a Diesel Engine Fueled with Koroch Seed Oil Blended Biodiesel.
- Numerical And Experimental Investigation Of A Solar Dryer Incorporated With Sensible Heat Storage Comprising Black-Coated Stones And Black-Coated Mild Steel Chips

### • **B.Tech**

- Construction of a portable wind turbine and study of its performance.
- Fabrication of a shell and tube Heat Exchanger and analysis of its performance.
- Design and fabrication of an Archimedean Screw turbine.
- Design and fabrication of an Integrated Roti Making Machine.
- Design, Analysis and Fabrication of a ram pump.
- Design, Analysis and Fabrication of a Vertical Bicycle Stand.
- Design, Fabrication and Analysis of Kinetic Energy Recovery System for A Bicycle Using Flywheel.
- Numerical Investigation of the Aerodynamic Characteristics of the NACA0018 Airfoil for a Vertical-Axis Wind Turbine using the k- $\epsilon$  Turbulence Model.
- Development of cost effective solution for e-commerce inventory management using autonomous system of mobile robots
- Experimental evaluation of water harvested in an Atmospheric Water Generator.

### Educational Qualifications:

- Ph.D. (Mechanical Engineering): Assam Engineering College, Gauhati University (AEC, GU).
- M.E. (Thermal Engineering): AEC, GU.
- B.E. (Mechanical Engineering, **Honors**): AEC, GU.

Dr Barnali Chowdhury.