CURRICULUM VITAE

DR. DEBIKA DEBNATH

SHIBNAGAR, NEAR RAM THAKUR ASHRAM, AGARTALA, TRIPURA – 799004
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Career Objective:

To work hard with full dedication for the achievement of organization objective under satisfying job contact, hence enhancing my skill and knowledge and ready to learn new things.

Personal:

Female, Indian, born on 24.04.1987.

Educational Qualification:

1. Ph.D. degree from NIT Agartala in January 2019.

   Ph.D. Project: - Cost and Reliability Analysis of Hybrid Off-grid Power System (HOPS).

2. Master of Technology (M. Tech.) in Power Electronics & Drives, 2011, 1st Class with Gold medal from NIT Agartala, India.

   M.Tech Project: - Performance Comparison between PID and State Feedback Controller with Integral Action in Position Control of DC Motor.

3. Bachelor of Technology (B.Tech.) in Electrical Engineering, 2009, 1st Class with distinction, from NIT Agartala, India.

4. Higher Secondary (10+2), 2005 in 1st Class from Maharani Tulsibati Girl's H.S School under Tripura Board of Secondary Education.

5. Madhyamik (10th), 2003 in 1st Class from Maharani Tulsibati Girl's H.S School under Tripura Board of Secondary Education.

Research Interests:

- Renewable Energy
- Power System
- Control System

List of publications:

A. International Journals:-

[1] **Debika Debnath**, Srimanta Ray, Ajoy Kumar Chakraborty, "Development of a statistical model for reliability analysis of hybrid off-grid power system (HOPS)", Energy Strategy Reviews, Vol. 13-14 (2016) pp: 213-221 **(Science Citation Index Expanded)**

[2] Rupak Roy, **Debika Debnath**, Srimanta Ray, "Comprehensive Assessment of Various Lignocellulosic Biomasses for Energy Recovery in a Hybrid Energy System", Arabian Journal for Science and Engineering (2021), https://doi.org/10.1007/s13369-021-05723-3 **(Science Citation Index Expanded)**

[3] Srimanta Ray, Ajoy Kumar Chakraborty and **Debika Debnath**, "Development of a Cost-Optimized Hybrid Off-Grid Power System for a Model Site in North-Eastern India involving Photovoltaic Arrays, Diesel Generators and Battery Storage", International Journal of ChemTech Research CODEN (USA): IJCRGG, ISSN: 0974-4290, Vol. 5, No. 2, pp: 771-779, April-June 2013 **(Scopus)**

[4] **Debika Debnath**, Shayan Bhowmik, "Economic and Environmental Impacts of Different Standalone Hybrid Power System (SHPS)", GIS SCIENCE JOURNAL, vol. 7(9), pp. 228-236 (2020) **(Scopus)**

[5] A. Chowdhury, and **D. Debnath**, "Performance Comparison between PID Controller and State-Feedback Controller with Integral action in Position Control of DC Motor", Applied Mechanics and Materials, Vol. 367, pp: 188-193, 2013.

[6] **Debika Debnath**, Srimanta Ray, and Ajoy Kumar Chakraborty, "Reliability and Economic Evaluation of Autonomous Hybrid Off-Grid Power System (AHOPS)", International Journal of Computational Intelligence & IoT, Vol. 2, No. 4, 2018.

[7] **Debika Debnath**, Shayan Bhowmik, "Comparative Study on different Types of Grid Independent Hybrid Power System", International Journal for Research in Applied Science & Engineering Technology, vol. 8, pp. 1945-1949 (2020).

[8] **Debika Debnath**, Dr. Ajoy Kumar Chakraborty and Dr. Srimanta Ray, "Optimization and Modeling of PV/FC/Battery Hybrid Power Plant for Standalone Application", International Journal of Engineering Research & Technology (IJERT), Vol. 1 Issue 3, ISSN: 2278-0181, pp: 1-10, May 2012.

B. Book Chapters:-

[1] Srimanta Ray, **Debika Debnath** and Ajoy Kumar Chakraborty, "Cost Optimization of an Off-Grid Hybrid Power System - A Statistical Model", Progress in Clean Energy, Vol. 2 Novel Systems and Applications, DOI: 10.1007/978-3-319-17031-2_46, ISBN: 978-3-319-17030-5, pp. 639-667, 2015, Springer International Publishing **(Scopus)**

[2] **Debika Debnath**, Srimanta Ray, "Sizing And Assessment of Different Architectures of Micro Integrated Hybrid Power System - A Case Study", Energy and exergy for Sustainable and Clean environment, Volume-I, Green Energy and Technology, https://doi.org./10.1007/978-981-16-8278-0_16, 2022, Springer Nature, Springer International Publishing **(Scopus)**

[3] **Debika Debnath**, Srimanta Ray, "Hybrid Energy System for an Academic Institution: A Case Study", Renewable Energy Optimization, Planning and Control, Studies in Infrastructure and Control, https://doi.org/10.1007/978-981-16-4663-8_3, pp-31-39, 2021, Springer International Publishing **(Scopus)**

[4] **Debika Debnath**, Anirban Debbarma, "Study of the Electrochemical Behaviour of Proton Exchange Membrane (PEM) Fuel Cell in MATLAB/Simulink", International Conference on TECHNOLOGICAL INTERVENTIONS FOR SUSTAINABILITY (CHEM-CONFLUX 22), April 14-16, 2022, ISBN: 978-93-94086-16-6, pp. 367-368 **(Scopus)**

[4] **Debika Debnath**, Srimanta Ray, and Ajoy Kumar Chakraborty, "Cost and Reliability Analysis of Biomass Based Hybrid Power System as Alternative Energy Solution", Proceeding of International Conference on Advances in Chemical Engineering and Technology - ICACE TKMCE 2014, ISBN: 9789351072843, pp: 224-229.

[5] **Debika Debnath**, Shayan Bhowmik and Chinmay Banik, "Techno-economic and Atmospheric Impacts of Diesel and Fuel Cell Based Grid-Independent Hybrid Power System (GIHPS)", Online International Conference on Electrical Systems and Technologies (ICEST-2021), 19th - 20th March, 2021, ISBN: 978-81-952445-1-5, pp. 77-80.

C. <u>International Conferences:</u>

[1] **Debika Debnath**, Srimanta Ray, and Ajoy Kumar Chakraborty, "Sizing of a grid independent hybrid energy system using a power reliability approach", 6th IEEE International Conference on Power Systems, 2016 (ICPS 2016), March 4-6, 2016, DOI: 10.1109/ICPES.2016.7584191 **(Scopus)**

[2] **Debika Debnath**, Piyali Malla, Sanchita Roy, "Position control of a DC servo motor using various controllers: A comparative study", Materials Today Proceedings, vol. 58, pp. 484-488, 2022. **(Scopus)**

[3] **Debika Debnath**, Gopa Laskar, "Economic Analysis of Hydrogen Fuel Cell Based Hybrid Power System as Alternative Energy Solution", 2021 IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC), 26-28 November 2021, DOI: 10.1109/AESPC52704.2021.9708472 **(Scopus)**

[4] **Debika Debnath**, Bibek Baidya, Shubhrajit Ghosh, "Performance analysis of Arduino processor based hybrid power generation system (HPGS)", Materials Today Proceedings, vol. 72, pp. 3023-3028, 2023, https://doi.org/10.1016/j.matpr.2022.08.375 **(Scopus)**

[5] Anindita Deb, **Debika Debnath** and Joy Saha, "Design & Analysis of a PV-Piezoelectric based Off-grid Energy Harvester in Tripura", Journal of Physics: Conference Series, vol. 2286, International Conference on Smart Technologies for Sustainable Development 2021 (ICSTSD 2021), 28/10/2021 - 29/10/2021, doi:10.1088/1742-6596/2286/1/012025 **(Scopus)**

[6] **Debika Debnath, Srimanta Ray, "**Sizing of Micro-Grid Hybrid Power System (MHPS) for Optimum Cost and Reliability: Comparison of the Selected Optimization Techniques, 3rd International Conference on Smart Grid Energy Systems and Control "Green and Sustainable Energy Systems" (SGESC-2025), 21st Feb to 23rd Feb 2025.

D. National Conferences:

[1] **Debika Debnath**, Srimanta Ray, Ajoy Kumar Chakraborty, "Hybrid Energy System for an Academic Institution of North-Eastern India: An Optimized Model", Proceedings of the 30th National Convention of Chemical Engineers' on the Theme "Recent Trends in Research, Development and Innovations in Chemical Industries" (RTRDICI 2014), 6-7 September, 2014.

Workshop Attended:

- One day workshop on "Intellectual Property Rights", 10th August, 2012.
- Two days workshop on "MATLAB and its Application in ANN, Fuzzy Logic & Genetic Algorithm", March 20-21, 2014.
- Two days workshop on "Recent Advances on Applied Mathematics", September 20-21, 2014.
- Two-week ISTE STTP on Electric Power System, 12th June to 15th July, 2017.
- Online workshop on Basics of Machine Learning, 9th May, 2020.
- Online training program on Electronic System design Flow-Architecture & Schematic Design Capture using OrCAD PSpice, 4th June 2020.
- Online training program on Block/System Level Functional Verification and Design Optimization using OrCAD PSpice, 5th June 2020.
- Online FDP on "Electric Vehicles" from 24-08-2020 to 28-08-2020 Organized by AICTE Training And Learning (ATAL) Academy at PSG COLLEGE OF TECHNOLOGY.
- Online FDP on "Sustainability Engineering" from 11-1-2021 to 15-1-2021 Organized by AICTE Training And Learning (ATAL) Academy at IIT Jammu.
- Online AICTE Faculty Development Programme on "Development of Residential Micro grid" (in collaboration with Typhoon) from 07/06/2021 to 11/06/2021.
- Online FDP on "AI Driven Next GenerationWearable Technologies" Organized by Centre for Innovation and Product Development (CIPD) from 13th to 15th March 2023.
- Participated in a 5 days FDP on "RECENT ADVANCEMENTS IN ELECTRIC VEHICLE TECHNOLOGY" organized by Ballari Institute of Technology & Management from 24th - 28th July 2023.
- Participated in a 5 days FDP on "3D PRINTING AND RAPID PROTOTYPING", organized by Department of Mechanical Engineering of Techno Colege of Engineering Agartala during 26th -30th June, 2023.
- Participated in a 5 days FDP on "Recent Trends and Research Oppurtunities in Engineeing and Technology" from 10th July to 14th July 2023 organized by Department

of Electrical Engineering and Department of Electrical and Computer Engineering, Techno Colege of Engineering Agartala during 26th -30th June, 2023.

- Participated in 8th Student Project Programme organized by Tripura State Council for Science & Technology, November 5-6, 2025.
- Online AICTE Faculty Development Programme on "Energy, Sustainability & Climate Change" from 16/01/2025 to 22/01/2025.
- Participated in a 5 days online FDP on "Recent Trends in Electrical and Electronics & Communication Technology" from 10th July to 14th July 2023 organized by Department of Electrical Engineering and Electronics & Communication Engineering, Tripura University during 17th -21st March, 2025.

Awards and Honors:

- Departmental Gold Medalist in M.Tech
- Institute Research Scholarship (NIT Agartala), July, 2011 to July 2015.

Work Experience:

- Associate Professor, Department of Electrical Engineering in Techno College of Engineering Agartala from 28/11/2022 to till date.
- Assistant Professor, Department of Electrical Engineering in Techno College of Engineering Agartala from 11/09/2015 to 27/11/2022.

Membership:

- Associate member of Institution of Energineers (India) (IEI), Tripura State Centre.

Professional Training:

Undertaken Vocational Training on Transmission Sub-Station and Overhead Line at Saltlake 132/33 KV Sub-Station (West Bengal State Electricity Board) in 2008.

Computer Knowledge:

- MATLAB
- HOMER
- MINITAB

Language Known:

Bengali, Hindi and English

Date: 28/01/2026
Place: Agartala

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