

DR. NUR MOHAMMAD

(AS ON 17TH NOVEMBER, 2024)

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Address: Dept. of Electrical and Electronic Engineering (EEE), Chittagong University of Engineering and Technology (CUET), Chittagong 4349, Bangladesh

RESEARCH INTERESTS AND STATEMENT OF PURPOSE

I have 15 years of teaching and 5 years of post-PhD research experience in electrical power and energy systems. I have some interesting ideas and expertise on the techno-economic optimization of power system operation. Especially focusing on power system network economics and demand side management with renewable and energy storage.

Some of my areas of research expertise are: Electricity market model for the future smart grid and energy management systems; energy security; renewable energy integration; energy storage, intelligent demand-side management, electricity pricing, Numerical optimization for power system operation, transactive control policy for restructured power systems, mathematical programming, power system network economics, Modeling tools and platforms used in data-driven electrical power engineering and energy system research.

I have a good track record of student supervising and conducting classes, and research project proposal writing. Along with teaching-learning, now, I am interested in further investigating research problems on power and energy systems security facilitating solar PV generation and storage to achieve sustainable development goals. With this concern, I seek collaboration and support from KFUPM to contribute to its research and innovation.

EDUCATION

Ph.D.	Queensland University of Technology (QUT), Brisbane, Australia, Electrical Engineering and Computer Science School	Title: Competitive demand response trading in electricity markets: Aggregator and end-user perspectives Supervisor: Yateendra Mishra, Associate Professor, QUT. Co-Supervisor: Gerard Ledwich, Adjunct Professor, QUT.	Sept. 2018
MSc. Engg. in EEE	Chittagong University of Engineering & Technology, Chittagong	Title: Maximum Power Point Tracking Using DC/DC Coupled Inductor SEPIC for Photovoltaic Systems Supervisor: Mohammad Rafiqul Alam, Professor, CUET Co-Supervisor: Muhammad Quamruzzaman, Professor, CUET	May 2013
B.Sc. Engg. in EEE	Rajshahi University of Engineering & Technology, Rajshahi, EEE	Title: Investigating the Dispersion Compensation of the Fiber Optic Cables Supervisor: Abdul Guffer Khan, Professor, RUET	Feb. 2008

AWARDS, SCHOLARSHIPS AND RECOGNITION

Best Paper Award	2023
<i>“Impact of Transmission Line Capacity Expansion on Electricity Operation Cost and Selling Price”, presented at 3rd International Conference on Electrical, Computer and Communication Engineering (ECCE), May 2023.</i>	
“Optimal Energy Mix and Operation Cost in the Presence of Nuclear and Solar PV Generation,”	2023
<i>presented in 6th International Conference on Electrical Information and Communication Technology (EICT), Dec. 2023.</i>	
QUT Postgraduate Research Award	2014-2018
<i>The QUTPRA is an Australian PhD scholarship which QUT awards to students of exceptional research potential.</i>	
QUT Top Up Excellence Scholarship	2014-2018
<i>QUT Excellence Scholarships are the university's premier offering for PhD students with outstanding academic achievement</i>	
UGC Merit Scholarship	2005-2008
<i>Merit-based scholarship given by the University Grant Commission, Ministry of Education, Bangladesh</i>	
Bangladesh Secondary Education Scholarship	2003
<i>Merit-based scholarship given by the Board of Intermediate and Secondary Education, Ministry of Education, Bangladesh</i>	
Talent-pool Scholarship from District Commission	1998
<i>Achiever of Top 10 position in Bangladesh Junior Scholarship Examination in Pabna</i>	

TEACHING EXPERIENCE @ 17 NOV 2024

EMPLOYMENT RECORD - TEACHING EXPERIENCE

EMPLOYER	POST	DURATION		
		FROM	TO	Y M D
EEE, CUET	Professor	11/02/2021	Till Date	3 - 9 - 06
EEE, CUET	Associate Professor	13/03/2019	10/02/2021	1- 10 - 30
EEE, CUET	Assistant Professor	17/11/2011	04/11/2018	6 -11 - 17
EEE, CUET	Lecturer	02/09/2008	17/11/2011	3 - 2 - 15
			Total	15 -10 -08

COURSES CONDUCTED IN CUET

I have been conducting several postgraduate and undergraduate courses at least one course per semester as listed below. Some of the responsibilities are developing curriculum and course materials for theory and lab courses, development lecturing, assessment criteria, exams, and assignment, grading, developing the syllabus and curriculum.

Postgraduate (PhD/MSc) Courses

EEE 6211: OPTIMIZATION IN POWER SYSTEM OPERATION

[Average 20 – 30 students/semester]

EEE 6206: POWER SYSTEM OPERATION AND CONTROL

[Average 20 – 30 Students per semester]

EEE 6000: THESIS

[PhD, MSc] 4 PhD students are in Progress, 12 MSc degree awarded and 8 more MSc students are in Progress. Students research projects are related to electrical power engineering.

Under Graduate (BSc Engg.) Courses

[Average 55 – 65 students/section, 3 sections/batch/semester]

EEE 471: SWITCHGEAR AND POWER SYSTEM PROTECTION

EEE 481: POWER STATIONS

EEE 485: RENEWABLE ENERGY CONVERSION

EEE 351: ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

EEE 481: POWER ELECTRONICS

EEE 361: POWER SYSTEM ANALYSIS

EEE 363: CONTROL SYSTEMS

EEE 400: THESIS

[I have supervised 100 plus BSc Engineering thesis/projects]

RESEARCH EXPERIENCE

Skills and Area of Expertise

Electrical Power Engineering, Renewable Energy Technologies, Distributed Generation, Generation, Transmission and Distribution, Energy Storages, Multi-Microgrids Optimization, KKT optimality conditions, Power Systems Simulation, Day-ahead electricity markets, Balancing electricity markets, Ancillary Services, electricity pricing, Electricity market model, Power System Network Economics, Bi-level Optimization, Distribution electricity market modeling, Convex Optimization, Equilibrium constraint, Demand Side management, Demand Response, Transactive market clearing model, Optimization of Power System Operation, Mathematical Programming, Mathematical problem with equilibrium constraint (MPEC), Photo-voltaic and wind energy integration

Doctoral Students Supervision [On-going]

- [1] Syed Munimus Salam, [18PEE003P], "*Impacts of Demand Side Management on Power Grid Network with Different Power Saving Aspects*", since 2019.
- [2] Deepak Kumar Chowdhury, [18PEE005P], "*Optimization of Power System Operation for Cost Minimization: South-East Chottogram Power Grid Perspective*," since 2019.
- [3] Md. Manurul Gani, [19PEE005P] "*Fuel Saving aspect of Merit Order Dispatch and Automatic Generation Control*," since 2022.
- [4] Sk. Md. Golam Mostafa, "*Cross-Border Energy Trading Model for ASEAN countries to Minimize Emission*," since 2024.

MSc Students Supervision [Completed]

- [1] Md. Kamrul Hasan, [17MEE001P], "*Voltage Quality Management using Minimal Number of Transformers in CUET Distribution Network*," 2024.
- [2] Afsanul Haque, [17MEE017P], "*A Comprehensive Approach to Battery Management System Incorporating Dynamic Power Limiting with Thermal Management Algorithm*," 2024.
- [3] Abu Naser, [20MET009P], "*Stability & Control of Engine Based Power Plant/ Micro-Grid*," 2024.
- [4] Sancoy Barua, [18MEE005P], "*Optimization-based Energy Management System to Minimize Electricity Bill for Residential Customer*," 2023.
- [5] Abu Shufian, [19MET016F], "*Modeling and Analysis of Cost-Effective Energy Management for Integrated Microgrids*," 2022.
- [6] Moon Barua, [17MEE010P], "*Analysis of Load Following Strategies for Grid Connected Microgrid*," 2022.
- [7] Anik Nath, [17MEE003P], "*Economic Load Dispatch in Modified IEEE 5 bus System using the Matpower Optimal Scheduling Tool under Uncertainty*," 2021.
- [8] Mohammad Hanif [16MEE020P], "*Power-optimizing Scheduling Strategy in Elevator Group Control System using Metaheuristic Algorithm*," 2019.
- [9] Akramul Haque, [19PEE005P] "*Fuel Saving aspect of Merit Order Dispatch and Automatic Generation Control*," 2018.

Some of the BSc Project Supervised [Completed]

- [1] *Investigating Supply-Demand Management in a Smart Power System Micro Grid Using Plug in Electric Vehicles, 2024.*
- [2] *Optimal Load Scheduling of Community Microgrid Based on Time of Use Tariff with Solar Power and Load Forecasting, 2024.*
- [3] *Cost Minimization of Electricity Supply System in Presence of Renewable and Energy Storages in Multi-Microgrids, 2023.*
- [4] *Optimization of Appliance Usage to Minimize Energy Consumption for Residential Customers, 2023.*
- [5] *Role of Power Sector Stakeholders in Peer to Peer Energy Trading in Bangladesh Distribution Network, 2023.*
- [6] *Power System Frequency Regulation by Using Thermostatically Control Load, 2022.*
- [7] *Optimal Solar Energy Penetration in South-East Zone of Bangladesh National Power System Grid, 2022.*
- [8] *Design of Residential Load Management System for Minimizing Energy Consumption Cost and Reducing Peak Demand in Bangladesh, 2022*
- [9] *Cost-effective Scheduling of Induction Furnaces in Steel Mills, 2021.*
- [10] *Power Profile Smoothing of PV Power Plant using Battery Storage System- Techno-economic Perspective, 2021.*
- [11] *Improving Primary Frequency Regulation by Using Energy Storage of Plug-in Electric Vehicles, 2021.*
- [12] *Power System Optimization Model Using Economic Load Dispatch, 2020.*
- [13] *Demand Side Management for Different Types of End User Customers Using Optimization Technique, 2020.*
- [14] *Demand Response of Industrial Boiler for Power System Frequency Response, 2020*
- [15] *A Solution to Economic Dispatch Problem for Reliable Electricity Supply, 2019.*
- [16] *Grid Connected Virtual Power Plant Considering Solar PV, Wind Power and Battery Energy Storage System for Optimal Energy Delivery, 2019.*
- [17] *Smart Grid Dynamic Pricing Algorithm for Benefit Maximization of Service Providers and Consumers, 2019.*
- [18] *Optimization of Thermostatically Controlled Appliances used by Residential Customer to Minimize Energy Consumption Cost Based on Real-Time Pricing, 2018.*
- [19] *Dynamic Economic Dispatch Model with Wind and Energy Storage System, 2018.*
- [20] *Demand Side Residential Load Scheduling for Smart Grid Power System Application, 2018.*

PUBLICATIONS

Interaction, communication and collaboration among researchers allows concept and resources share to produce impactful knowledge. I appreciate and acknowledge the co-author's contribution in my publications. Collaboratively, I have published over hundred papers on electrical power and energy management systems. Some of the publications are as follows:

Book Chapter

Nur Mohammad, Yateendra Mishra, "Demand-Side Management and Demand Response for Smart Grid," *Springer*, Singapore, 2019, ISBN: 978-981-13-1767-5, https://link.springer.com/chapter/10.1007/978-981-13-1768-2_6

Some of the Journal Publications

- [1]. **Nur Mohammad**, Aatur Rahman, "Transactive control of industrial heating-ventilation-air-conditioning units in cold-storage warehouses for demand response," *Sustainable Energy, Grids and Networks*, Vol. 18, 2020. <https://www.sciencedirect.com/science/article/abs/pii/S2352467718301784>
- [2]. **Nur Mohammad**, Yateendra Mishra, "Retailer's Risk-Aware Trading Framework with Demand Response Aggregators in Short-Term Electricity Markets," *IET Generation, Transmission & Distribution*, Vol. 13, No. 13, 2019, <https://digital-library.theiet.org/content/journals/10.1049/iet-gtd.2018.6294>
- [3]. **Nur Mohammad**, Yateendra Mishra, "Coordination of wind generation and demand response to minimise operation cost in day-ahead electricity markets using bi-level optimization framework," *IET Generation, Transmission & Distribution*, Vol. 11, No. 16, 2019. <https://digital-library.theiet.org/content/journals/10.1049/iet-gtd.2018.0110>
- [4]. **Nur Mohammad** and Y. Mishra, "The Role of Demand Response Aggregators and the Effect of GenCos Strategic Bidding on the Flexibility of Demand," *Energies*, vol. 11, no. 12, 2018. <https://doi.org/10.3390/en11123296>
- [5]. A. Haque, **Nur Mohammad**, S. Morsalin, N. Das, "Mitigation of transient effects due to partial shading in a grid-connected photovoltaic farm through controlled vehicle to grid operation," *Cleaner Energy Systems*, Vol. 7, 2024. <https://doi.org/10.1016/j.cles.2023.100097>
- [6]. Hanif, M., **Nur Mohammad**, "Metaheuristic algorithms for elevator group control system: a holistic review," *Soft Computing*, Vol. 27, 15905–15936, 2023. <https://doi.org/10.1007/s00500-023-08843-0>
- [7]. Abu Shufian, Md. Jawad-Al-Mursalin Hoque, Shaharier Kabir, **Nur Mohammad**, "Optimized Performance and Economic Assessment for Hybrid Island Microgrid System Considering Uncertainties," *Technology and Economics of Smart Grids and Sustainable Energy*, Vol. 7, No. 32, 2022. <https://doi.org/10.1007/s40866-022-00156-9>
- [8]. S. M. Salam and **Nur Mohammad**, "Cost-Centric Energy Management of a Test Grid System Considering Load Flexibility for DSM," *International Journal of Electrical and Electronic Engineering & Telecommunications* Vol. 13, No. 2, 2024. [10.18178/ijeetc.13.2.125-134](https://doi.org/10.18178/ijeetc.13.2.125-134)

- [9]. M. Salam and **Nur Mohammad, Imtiaz Akber Chowdhury**, "Impact Assessment of an Intensive Base Demand Side Management Program for Telecommunication Load with Energy Storage Device in a Test Grid System Based on Bangladesh Perspective," *Journal of Advanced Engineering and Computation*, Vol. 7, No. 1, 2023. <http://dx.doi.org/10.55579/jaec.202371.396>.
- [10]. Abu Shufian, **Nur Mohammad**, "Modeling and analysis of cost-effective energy management for integrated microgrids," *Cleaner Engineering and Technology*, Vol. 8, No. 8, 2022. <https://doi.org/10.1016/j.clet.2022.100508>
- [11]. Ray, M., Kabir, M.F., Raihan, **Nur Mohammad**, "Performance evaluation of monocrystalline and polycrystalline-based solar cell," *International Journal of Energy Environ. Engineering*, Vol. 14, 2023. <https://doi.org/10.1007/s40095-023-00558-0>
- [12]. Anik Nath, **Nur Mohammad**, "Stochastic Economic Load Dispatch Under Supply and Load Uncertainty - A Case Study on Modified IEEE 5 BUS Power System," *Recent Advances in Electrical & Electronic Engineering*, Vol. 14, No. 5, 2021, doi: [10.2174/2352096514666210322154506](https://doi.org/10.2174/2352096514666210322154506)
- [13]. Bhuiyan, N., Ullah, W., Islam, R., Ahmed, T. and **Nur Mohammad**, "Performance optimisation of parabolic trough solar thermal power plants - a case study in Bangladesh," *International Journal of Sustainable Energy*, Vol. 39, No. 2, 2020. <https://doi.org/10.1080/14786451.2019.1649263>
- [14]. **Nur Mohammad**, Kowshik Debnath, Mahfuzur Rahman and Md. Shamsul Arifin, "Optimal Power Delivery from Hybrid Micro-grid to Provide Frequency Regulation," *Recent Advances in Electrical & Electronic Engineering*, Vol. 13, No. 6, 2020, [10.2174/2352096512666191111120050](https://doi.org/10.2174/2352096512666191111120050)
- [15]. Md. Shamsul Arifin, Nur Mohammad, Mohammad Ibrahim Khalil, Mohammad Jahangir Alam, "Input switched closed-loop single phase ĆUK AC to DC converter with improved power quality," *International Journal of Power Electronics and Drive Systems (IJPEDS)*, Vol. 10. No. 3, 2019. <http://doi.org/10.11591/ijped.v10.i3.pp1373-1381>
- [16]. Md. Shamsul Arifin, **Nur Mohammad**, Sheikh Alimur Razi, Rabiul Islam, Farhana Afroz, Sumiya Ferdhous, "A Scalable Power Factor Controller for Low-Voltage Distribution System," *WSEAS Transactions on Circuits and Systems*, Vol. 18, 2019. <https://wseas.com/journals/articles.php?id=1495>
- [17]. Khandker Tawfique Ahmed, Mithun Datta, **Nur Mohammad**, "A Novel Two Switch Non-inverting Buck-Boost Converter based Maximum Power Point Tracking System," *International Journal of Electrical and Computer Engineering (IJECE)*, Vol. 3, No. 4, 2013. <http://dx.doi.org/10.11591/ijece.v3i4.2772>
- [18]. **Nur Mohammad** and Tarequl Karim. "Design and implementation of hybrid automatic solar-tracking system." *Journal of Solar Energy Engineering*, Vol. 135, No. 1, 2013. <https://doi.org/10.1115/1.4007295>
- [19]. **Nur Mohammad**, Muhammad Quamruzzaman, M. R. Alam, "Parasitic Burden on the Performance of Coupled Inductor SEPIC Based Maximum Power Point Tracking in PV Systems," *WSEAS Transactions on Power Systems*, Vol. 8, 2013. <https://wseas.com/journals/articles.php?id=6054>

Some of the Conference Papers

- [1] **Nur Mohammad**, Shafiuul Hasan Raf, "Investigating Techno-Economic Benefits of Integrating a Microgrid in IEEE 14 Bus Test Power System Using Lagrangian Method," *6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, Dhaka, Bangladesh, May 2024, pp. 1445-1449, <https://ieeexplore.ieee.org/document/10534359>
- [2] M. E. Haque and **Nur Mohammad**, "Design and Performance Analysis of Neural Network-Based MPPT in PV System with Energy Storage Management," *6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, Dhaka, Bangladesh, May 2024, pp. 1378-1383, <https://ieeexplore.ieee.org/document/10534419>
- [3] M. M. Gani, N. S. Ritu, F. I. Mahi, J. Chakrabartty and **Nur Mohammad**, "Short-Term Residential Load Forecasting for Microgrid: Enhancing Performance through PCA and Clustering Techniques.," *3rd International Conference on Advancement in Electrical and Electronic Engineering (ICAEEE)*, Gazipur, Bangladesh, 2024, <https://ieeexplore.ieee.org/document/10561765>
- [4] M. S. Hassan, M. D. A. Siddique, **Nur Mohammad**, and A. I. Ikram, "Performance Analysis of Machine Learning-Based Traditional and Ensemble Techniques for Smart Grid Stability Prediction," *6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, 2024, pp. 1020-1025, <https://ieeexplore.ieee.org/document/10534560>
- [5] M. E. Haque and **Nur Mohammad**, "Design and Performance Analysis of Neural Network-Based MPPT in PV System with Energy Storage Management," in *2024 6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, 2024, pp. 1378-1383, <https://ieeexplore.ieee.org/document/10534419>
- [6] A. A. Khan, R. S. Niloy, and **Nur Mohammad**, "Role of Power System Operator in Initiating Peer-to-Peer Energy Trading in the Distribution Networks," *International Conference on Advances in Computing, Communication, Electrical, and Smart Systems (iCACCESS)*, 2024, <https://ieeexplore.ieee.org/document/10499599>
- [7] **Nur Mohammad** and D. K. Chowdhury, "Impact of Transmission Line Capacity Expansion on Electricity Operation Cost and Selling Price," *2023 International Conference on Electrical, Computer and Communication Engineering (ECCE)*, Chittagong, Bangladesh, 2023, <https://ieeexplore.ieee.org/document/10101541>
- [8] A. Shufian, M. Z. Hossain, S. Mazumder, S. Kabir, M. S. Rashid Mahin and **Nur Mohammad**, "Investigating Clean Energy Generation from Unoccupied Roof-top Space in University Premises," *2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM)*, Bhopal, India, 2023, <https://ieeexplore.ieee.org/document/10236170>
- [9] N. I. Udooy, M. G. Mortuza, M. I. Hossain, and N. Mohammad, "Rate of Change of Frequency (RoCoF) Improvement of Low Inertia Power System by Using Refrigerated Warehouse," *10th IEEE International Conference on Power Systems (ICPS)*, 2023, <https://ieeexplore.ieee.org/document/10428805>

- [10] A. Bhowmic, M. Modak, M. J. Chak, and **Nur Mohammad**, "IoT-Based Home Energy Management System to Minimize Energy Consumption Cost in Peak Demand Hours," *10th IEEE International Conference on Power Systems (ICPS)*, 2023, <https://ieeexplore.ieee.org/document/10428752>
- [11] Md. Manjurul Gani, **Nur Mohammad**, "Investigation of Fuel Saving for Merit Order Based Load Curtailment Profile in 5 Bus Power System Network," *10th IEEE International Conference on Power Systems (ICPS)*, 2023, <https://ieeexplore.ieee.org/document/10428905>
- [12] F. Hossain and **Nur Mohammad**, "Operation Cost Minimization Planning in South Eastern PGCB Grid with Increasing Solar PV Energy," *6th International Conference on Electrical Information and Communication Technology (EICT)*, 2023, <https://ieeexplore.ieee.org/document/10427653>
- [13] A. M. Zobayer, B. A. Shuvo, and **Nur Mohammad**, "Power Profile Smoothing of PV Power Plant with a Fuzzy Logic Controlled Battery Energy Storage System," *7th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)*, 2023, <https://ieeexplore.ieee.org/document/10423481>
- [14] A. Shufian, S. Kabir, M. S. Rashid Mahin, R. Chowdhury, M. M. Rahman, and **Nur Mohammad**, "Optimized Energy Management of Grid Connected Solar/Battery-dependent Smart Microgrid," *IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM)*, 2023, <https://ieeexplore.ieee.org/document/10236346>
- [15] S. M. Salam and Nur Mohammad, "A Comprehensive Analysis of Load Shedding with DSM in a Power Grid with IEEE 14 Bus System Adoption of Chittagong Zone," *International Conference on Electrical, Computer and Communication Engineering (ECCE)*, 2023, <https://ieeexplore.ieee.org/document/10101510>
- [16] **Nur Mohammad**, A. Islam, and O. Das, "Optimal Solar Energy Penetration in South-East Zone of Bangladesh National Power System Grid," *4th International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE)*, 2022, pp. 261-266, <https://ieeexplore.ieee.org/document/10114560>
- [17] A. Shufian, M. J. -A. -M. Hoque, S. Kabir and **Nur Mohammad**, "Modeling & Economical Analysis of Hybrid Solar-Wind-Biomass-H₂-based Optimal Islanding Microgrid in Bangladesh," *IEEE 10th Region 10 Humanitarian Technology Conference (R10-HTC)*, Hyderabad, India, 2022, pp. 61-66, <https://ieeexplore.ieee.org/document/9929601>
- [18] A. Shufian, R. Chowdhury, **Nur Mohammad** and M. A. Matin, "Renewable Energy of Bangladesh for Carbon-free Clean Energy Transition (C2ET)," *International Conference on Advancement in Electrical and Electronic Engineering (ICAEEE)*, Gazipur, Bangladesh, 2022, <https://ieeexplore.ieee.org/document/9836378>
- [19] M. K. Hasan and **Nur Mohammad**, "Different Scenario Analysis of PJM 5-Bus Test System by Changing Load Demand," *International Conference on Innovations in Science, Engineering and Technology (ICISSET)*, Chittagong,

- Bangladesh, 2022, pp. 163-168,
<https://ieeexplore.ieee.org/document/9775892>
- [20] S. M. Salam and **Nur Mohammad**, "Analyze the Impact of Demand Side Management on Grid Power for an Isolate Zone in a Sustainable IEEE 14 Bus System," *International Conference on Information and Communication Technology for Sustainable Development (ICICT4SD)*, 2021, pp. 16-20,
<https://ieeexplore.ieee.org/document/9396975>
- [21] S. Barua and **Nur Mohammad**, "Optimization-based Energy Management System to Minimize Electricity Bill for Residential Customer," *3rd International Conference on Electrical & Electronic Engineering (ICEEE)*, 2021, pp. 105-108, <https://ieeexplore.ieee.org/document/9718575>
- [22] M. A. Rahman, I. Rahman and **Nur Mohammad**, "Implementing Demand Response in The Residential Energy System to Solve Duck Curve Problem," *2nd International Conference on Advanced Information and Communication Technology (ICAICT)*, Dhaka, Bangladesh, 2020, pp. 466-470,
<https://ieeexplore.ieee.org/document/9333449>
- [23] M. A. Rahman, I. Rahman and **Nur Mohammad**, "Demand Side Residential Load Management System for Minimizing Energy Consumption Cost and Reducing Peak Demand in Smart Grid," *2nd International Conference on Advanced Information and Communication Technology (ICAICT)*, Dhaka, Bangladesh, 2020, pp. 376-381,
<https://ieeexplore.ieee.org/document/9333451>
- [24] S. M. Salam and **Nur Mohammad**, "Load Flow Analysis of a Six Bus System for a Bulk Scale Replacement of Conventional Lighting Loads in a Distributed Network," *2020 IEEE Region 10 Symposium (TENSYP)*, Dhaka, Bangladesh, 2020, pp. 831-834, <https://ieeexplore.ieee.org/document/9230818>
- [25] B. Das, A. M. M. Reza, **Nur Mohammad** and S. H. Razo, "Smart Grid Dynamic Pricing Algorithm for Benefit Maximization of Service Providers and Consumers," *2020 IEEE Region 10 Symposium (TENSYP)*, Dhaka, Bangladesh, 2020, pp. 206-209,
<https://ieeexplore.ieee.org/document/9230702>
- [26] M. Sadiq, **Nur Mohammad**, and A. Nadeem, "Optimized Energy Generation Model and Pricing Strategy to Solve Economic Load Dispatch," *IEEE International Conference on Power, Electrical, and Electronics and Industrial Applications (PEEIACON)*, 2019, pp. 74-78,
<https://ieeexplore.ieee.org/document/9071952>
- [27] S. Hossain, M. Rahaman, I. Tasnim, and **Nur Mohammad**, "Optimal Energy Mix and Operation Cost in the Presence of Nuclear and Solar PV Generation," *International Conference on Electrical, Computer and Communication Engineering (ECCE)*, 2019, <https://ieeexplore.ieee.org/document/8679472>
- [28] M. K. Hasan and **Nur Mohammad**, "An Outlook over Electrical Energy Generation and Mixing Policies of Bangladesh to Achieve Sustainable Energy Targets -Vision 2041," *International Conference on Electrical, Computer and Communication Engineering (ECCE)*, 2019,
<https://ieeexplore.ieee.org/document/8679446>

- [29] **Nur Mohammad** and Y. Mishra, "Transactive market clearing model with coordinated integration of large-scale solar PV farms and demand response capable loads," *Australasian Universities Power Engineering Conference (AUPEC)*, 2017, <https://ieeexplore.ieee.org/document/8282496>
- [30] **Nur Mohammad** and Y. Mishra, "Competition Driven Bi-Level Supply Offer Strategies in Day Ahead Electricity Market," in *Australasian Universities Power Engineering Conference, Brisbane Australia, 2016*, <https://ieeexplore.ieee.org/document/7749349>

PRESENTATIONS AND INVITED LECTURES

Paper Presentation

Nur Mohammad, Shafiul Hasan Raf "Investigating Techno-Economic Benefits of Integrating a Microgrid in IEEE 14 Bus Test Power System Using Lagrangian Method," *6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*, May 2024 in (MIST), Mirpur, Dhaka

- Organized by Military Institute of Science and Technology

Aitijya Bhowmic, Mrinmoy Modak, Mongkya Jai, **Nur Mohammad**, IoT-Based Home Energy Management System to Minimize Energy Consumption Cost in Peak Demand Hours, "10th International Conference on Power Systems (ICPS), December 2023 in Coxsbazar".

- Jointly organized by IEEE Bangladesh Section and RUET.

Nur Mohammad, Anfaj Islam, Opy Das, "Optimal Solar Energy Penetration in South-East Zone of Bangladesh National Power System Grid," *4th International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE)*, 29-31 December 2022, Rajshahi-6204, Bangladesh

- Jointly organized by IEEE Bangladesh Section; Industrial Applications Society (IAS), IEEE Power and Energy Society (PES) Bangladesh Chapter.

Keynote Address

Micro-Grid Design and Operation: Power Market Challenges & Opportunities ,"
October 2023.

- Jointly organized by Canadian University of Bangladesh (CUB), and Sheikh Kamal IT Business Incubator, CUET

Workshop

"Energy Efficiency and Rebound Effect: Rebound Effect in Energy Economics Classification of Rebound Effect and How to Minimize Rebound in Energy Consumption," February 2021

- Organized by Training Academy, Bangladesh Power Development Board (BPDB), Cox's Bazar

PROFESSIONAL TRAINING

Seminar/ Workshop

- **Training on Power Hardware in the Loop and Real-Time Simulation,**” jointly organized by ICONIC Engineering Limited and Chittagong University of Engineering and Technology (CUET), Bangladesh, 26-29 May, 2024.
- **Training on Familiarization with Bangladesh Standard (BDS) and Training on Parameter Measurement for Solar PV System Equipment,** Dept. of EEE, BUET, Dhaka, Bangladesh, 26-28 June, 2018
- **Training on Skill Development Competition Arrangement on Divisional Level, Divisional Commissioner Office,** Chittagong, Bangladesh, 22 February, 2018
- **Training on It’s all about Energy - Dealing with Australia’s Energy Future, Does Coal have a Future?** Australian Energy Market Operator, Brisbane, Australia, 18 August, 2017
- **Seminar on Renewable Energy: What Difference Wills Storage Really Make? Power, Energy and Clean Technologies (PECT),** Seminar Series in Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia, 2 September 2016

PROFESSIONAL AFFILIATIONS

- **Member:** Institute of Engineers Bangladesh, **IEB**, 2009 – Till Date
Responsibilities: *To ensure the professional excellence and continuous professional development. To establish co-operation and collaboration with the other professional bodies.*
- **IEEE Member,** Institute of Electrical and Electronic Engineers (**IEEE**), 2014– Till Date
Responsibilities: *As an IEEE student Branch Councilor in CUET, I have to provide giddiness and sponsoring enthusiastic ideas coming from the student. Promoting student awareness of awards, contests, conferences, IEEE membership. Attending Executive Committee meetings, as well as, the meetings which are called by the Student Branch Coordinator and help the branch in its activities.*

PROFESSIONAL SERVICE

- **Organizing Co-Chair:** 4th International Conference on Electrical, Computer and Communication Engineering (ECCE), February 2025 in CUET, Bangladesh. Organized by Faculty of Electrical and Computer Engineering, CUET.
- **Technical Program Secretary:** 10th International Conference on Power Systems (ICPS), December 2023 in Coxsbazar, Bangladesh.
 - Jointly organized by IEEE Bangladesh Section; IEEE Industrial Applications Society (IAS) Bangladesh Chapter and IEEE Power and Energy Society (PES) Bangladesh Chapter.

Peer-Reviewed Articles for the

- IET Generation, Transmission & Distribution
- IET renewable power generation
- IET Smart Grid
- Renewable and Sustainable Energy Reviews
- IEEE Industrial Informatics
- IEEE Transactions on Smart grid
- IEEE transactions on Sustainable Energy.
- IEEE Access
- IEEE Systems Journal
- International Journal of Renewable Energy Technology
- International Journal of Energy Technology and Policy
- Journal of Solar Energy Engineering

ADDITIONAL RESPONSIBILITIES IN THE UNIVERSITY

AFFILIATION	ACTIVITIES	TENURE
Head, EEE, CUET	<ul style="list-style-type: none"> ✓ Running academic and administrative works. ✓ Conducting research committee meeting ✓ Sanctioning authority for the expenditure and account management. ✓ In charged with the development, implementation, and assessment of better academic environment, services and policies. 	April 2023 to Till Date
Member, Academic Council, Research Committee, Planning Committee, and Recruitment Cell	<ul style="list-style-type: none"> ✓ Recommends the educational policies and standards. ✓ Suggest for the planning and development of teaching and research. ✓ Cooperate budget officers regarding operation of budget units and expenditure as per the university constituencies and ordinance. ✓ Help the recruitment cell to find and promoting teaching and academic staff. 	Sept. 2021 to Sept. 2023
Chairman Academic Committee for Postgraduate Studies (ACPGS)	<ul style="list-style-type: none"> ✓ Mentoring and guiding postgraduate students and supervisors. ✓ Enhancing research skills for postgraduate students. ✓ Establishing policy guidelines for effective research dissemination. 	April 2023 to Till Date
Chairman, Bureau of Research, Testing and Consultancy (BRTC)	<ul style="list-style-type: none"> ✓ Convene meetings with members, treasurer, and secretary of the Bureau of Research Testing and Consultancy (BRTC) ✓ Coordinating consultancy and testing activities. ✓ Enhancing relationship between the university and the local industry, which is important for techno-economic development as a whole. 	April 2023 to Till Date
Member, Treasurer (BRTC)	<ul style="list-style-type: none"> ✓ Testing and prepare compliance test procedure. ✓ Professional consultancy services, provide expert opinion, prepare, specification. ✓ Oversee the financial administration 	Sept. 2009 to Oct. 2020

LANGUAGES

Bangla: Native Language

English: Fluent, Advanced Reading and Writing

Arabic: Intermediate Listener, Novice Speaker

COMPUTER SKILLS

Programming: Numerical Optimization, Mathematical programming, Network model, Lagrange method for solving constraint optimization, Power system simulation, MATLAB/SIMULINK, MATPOWER, GAMS, Python, PYPISA, Analytics, data visualization and automation.

Applications: Office suites (Microsoft Office, G Suite), Technical skills (Grammarly, Mendely Desktop), Presentation skills/soft skills ((PowerPoint, Keynote), Spreadsheets (Excel, Google Spreadsheets)

Platforms: Windows

FIND FURTHER DETAILS OF MY PUBLICATION

Research Gate Profile:

<https://www.researchgate.net/profile/Nur-Mohammad-8>

Google Scholar Profile:

<https://scholar.google.com.au/citations?user=pxlYgNYAAAAJ&hl=en>

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Scopus Profile:

<https://www.scopus.com/authid/detail.uri?authorId=56365853900>

Web of Science Profile:

<https://www.webofscience.com/wos/author/record/943998>

CUET Profile:

<https://www.cuet.ac.bd/members/191>

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