Dr. Md Apel Mahmud

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Career Aspirations

Building an academic career as a world-renowned strategic leader in the field of electrical power, control and renewable energy engineering; where I will have the opportunity to utilise my potentiality, adaptability and leadership skills to do something innovative and from where I will be able to establish a strong and extremely productive team in the specific area of electrical power and energy systems.

Career Synopsis

Research and Scholarship

Over the last few years, I have been able to build a reputation at both national and international levels in the areas of electrical power and renewable energy engineering through my scholarly and research activities. To date, I have published more than *265 high quality refereed publications*, including *109 high impact journal papers (with more than 90% in Q1 journals)*, 2 edited books, 8 scholarly book chapters and more than 145 conference papers. The outcomes of my research have made significant contributions to the research community and since 2010, my research articles have been cited more than *5120 times with the H-index: 37* (according to Google Scholar). I have published *around 80% of my journal articles* as either a first author or a corresponding author. Around 20% of my journal articles were published with international collaborators, where I played very active role with significant contributions. I have maintained a strong research track record throughout and following the completion of my PhD, I have demonstrated proficiency in different working environments. In particular, my works on nonlinear control and optimisation schemes for modern power grids have been of interests to the power and energy community. I have made substantial contributions to advance the nonlinear controller design and implementation for electrical power and renewable energy systems. My fundamental contributions to the areas of control and optimisation have created opportunities for other researchers to make their own contributions to the field. I am collaborating with many colleagues from different parts of the University to conduct innovative research, publish the outcomes in high impact journals and attract external grants. Due to my research commitment and accomplishment, I have been successful in obtaining seven externally funded projects that attracted around *AUD13 million in total in Australia and £90,000 in the UK*. I was also invited to present my research at different national and international forums. I have led the development of algorithms for the fault detection and network balancing in power distribution networks, which is currently being used by AusNet Services (a major transmission and distribution service provider) in Victoria, Australia. The benefits of these algorithms have been acknowledged by AusNet Services in several instances, as these helped them to efficiently manage their distribution networks in bushfire prone areas. Furthermore, I have developed a new data extraction framework for the battery management system in collaboration with Zeco Energy in

Australia, which is helping to appropriately manage the battery of their newly developed product, *SolarOwl*, a mobile lighting tower widely adopted for construction, event management and mining industries. This product is significantly contributing to achieve net-zero in the relevant industry. Currently, I am developing an advanced and smart portable power systems using renewable energy sources with a UK-based company (VeroPower). This product will help different application (e.g. agriculture, construction, events) to reduce their carbon footprints, while assisting to achieve the net zero. Furthermore, I assisted BritishVolt to determine the optimal battery size for their plant so that they can effectively utilise the power generated from renewable energy sources. Hence, my research activities have provided significant benefits to the power industry and assisting to achieve the net-zero.

Teaching and Learning
I am a strong advocate of research-led teaching and I endeavour to maintain the balance between teaching and research as I believe that an outstanding researcher needs to be a teacher at the same level. While I am teaching, I think of myself as a co-learner along with students. I always think about what I would do in a similar situation to that of a student. In the current competitive and fast changing learning environments, teaching approaches need to be developed in a manner that diverse cohorts of students will have the opportunities to learn from different perspectives (theories and practices). In my teaching, I always encourage students to relate theoretical understanding with real-world problems. I create such learning environments that allow students to think critically, learn independently and solve problems both individually and in groups. Students have always appreciated the approach I undertake to share my research findings in the classroom. Furthermore, I have created a learning environment for students from both located and cloud cohorts, which have well been acknowledged by the students. I always believe in continuous improvement of my teaching and update the assessment tasks and learning activities to ensure that students are achieving the respective learning outcomes. I continue to promote the teaching style I believe in, where I create the environment for the students to learn themselves among the team and peers. I have played pivotal roles in promoting and ensuring the development and delivery of project-oriented design-based learning (PODBL) curriculum within the Electrical and Electronics Engineering discipline. Furthermore, I have led the development of a new course, Master of Energy Systems Management at Deakin and currently working to develop a new program, Master of Science in Net Zero Engineering at Northumbria University. I developed new course by optimally utilising the resources available within the Faculty, while using an interdisciplinary approach. I will strive my best in promoting student-centered learning based on the PODBL as I believe power companies will require engineers who can drive their businesses independently with sound technical and professional skills. I am a Senior Fellow of Higher Education Academy (SFHEA), which clearly demonstrates my leadership and commit in teaching and learning.

Service
I am always willing to support the School and Discipline when and as needed. I have always been viewed as someone who can be reliable and get the job done. I was entrusted to undertake the roles of course director and course coordinator for my discipline. I have effectively navigated these responsibilities and supported the students and my colleagues. I believe that students are our future and the existence of the university is unimaginable without students. I always go beyond my assigned responsibilities and devote myself to cater our students' needs, either in their studies or social life. I have committed to establish my workplaces as one of the premium in both teaching and research and engaged myself with various national and international communities. I am involved with different professional

organisations. I am consistently serving the power engineering community by engaging in different roles such as the associate editor of reputed journals, HDR thesis examiner and program committee members of many international conferences. I am always eager to engage myself in any services required by the Centre/School/Faculty/University.

Research Interests

- Nonlinear control of power electronic interfaces for renewable energy applications
- Power system dynamics
- Resiliency of power grids
- Power system, modeling, stability, and control
- Power system fault analysis for bushfire mitigation
- Microgrids (AC, DC, and hybrid AC/DC)
- Grid integration of renewable energy sources (small- and large-scale solar and wind)
- Transactive energy management and optimization for microgrids
- Smart metering and smart grid data analytics
- Energy storage systems (small- and large-scale)
- Nonlinear control theory and applications

Core Educational Qualifications

1. Doctor of Philosophy (PhD) Electrical Engineering *with the best thesis Award*
The University of New South Wales, Canberra,
ACT 2600, Australia.
Date of Completion: **December 12, 2012**

Thesis Title: Robust Nonlinear Feedback Linearizing Control for Power Systems to Enhance Transient Stability

2. Bachelor of Science Electrical and Electronic Engineering (*1st Class 1st*)
University Gold Medalist
Rajshahi University of Engineering & Technology (RUET), Rajshai-6204, Bangladesh.
Duration: 4 yrs
Date of Completion: **February 19, 2008**

Major:
- Electrical power engineering

3. Graduate Cert. in Learning & Teaching Swinbune University of Technology
Hawthorn, VIC 3122, Australia.
Date of Completion: **July 27, 2015**

Completed Subjects:
- Design and Delivery of Online Learning
- Nature of Learning and Teaching
- Curriculum Design and Assessment

Additional Educational Qualifications

1. Master of Business Administration (MBA)   Australian Institute of Business (AIB)
Adelaide, SA 5000, Australia.
Date of Completion: **December 20, 2017**

Major:
- Leadership
- Strategic Management

Work Experiences

1. Associate Professor   Department of Mathematics, Physics & Electrical Engineering
Faculty Engineering & Environment,
Northumbria University,
Newcastle Upon Tyne, UK.
Period: October 2021 – Present

Key Responsibilities:
- Core member of the Department Management Group (DMG) for making strategic decisions
- Impact case study (ICS) lead for the Department
- Line management of academic staffs
- Leadership for the electrical power and energy systems research group
- Leadership for the development of the research lab
- Teaching undergraduate and postgraduate modules
- Leadership in developing new courses and curriculums (Master of Net-Zero Energy Systems)

Major Achievements:
- Framework for the impact case study at the Departmental and University level
- Development of brand new power engineering research lab
- Moderation of assessments in major engineering courses

2. Senior Lecturer   School of Engineering
Faculty of Science, Engineering & Built Environment,
Deakin University,
Waurn Ponds Campus, Geelong, VIC 3220, Australia.
Period: January 2018 – October 2021

Key Responsibilities:
- Leadership in developing research group
- Leadership in research grant applications
- Supervising Master by Research and PhD students as a principal and associate supervisor
- Teaching undergraduate and postgraduate courses
- Design and delivery of online and project-oriented design-based learning
- Course coordination for Bachelor of Electrical & Electronics Engineering
- Supervising undergraduate and postgraduate project as well as research students

Major Achievements:
- Published high impact journal papers and attracted major industry/government sponsored grants
- Designed Cloud (Online) first learning for undergraduate courses

3. Lecturer   School of Engineering
Faculty of Science, Engineering & Built Environment,
Deakin University,
Waurn Ponds Campus, Geelong, VIC 3220, Australia.
Period: March 2015 – December 2017

Key Responsibilities:
- Conducting original research in the areas of current research interests
- Publishing research results in top-ranked journal papers and conference proceedings
- Supervising Master by research and PhD students
- Seeking grants from external organizations
- Teaching undergraduate and postgraduate courses
- Design and delivery of online and project-oriented design-based learning
- Course coordinator of Bachelor of Electrical & Electronic Engineering
- Supervising undergraduate and postgraduate project as well as research students

Major Achievements:
- Published high impact journal papers and attracted major industry grants
- Developed a new undergraduate unit in project-oriented design-based learning (PODBL)
- Developed curriculum and assessment structure for all power engineering units

4. Lecturer   School of Software and Electrical Engineering
Faculty of Science, Engineering & Technology,
Swinburne University of Technology,
Hawthorn, VIC 3122, Australia.
Period: August 2013 – March 2015

Key Responsibilities:
- Conducting original research in the area of current research interests
- Publishing research results in top-ranked journal papers and conference proceedings
- Supervising Master by research and PhD students
- Teaching undergraduate and postgraduate courses related to electrical power systems, control systems, smart grid and renewable energy
- Design and delivery of blended and online learning
- Major curriculum development for Master of Engineering (Electrical & Electronic) course with a main focus in power engineering
- Supervising undergraduate and postgraduate project students

Major Achievements:
- Received large research and teaching infrastructure grant from the faculty and the university
- Developed a microgrid research laboratory to facilitate latest power engineering research

- Develop curriculum and assessment structure for three new units related power systems and renewable energy
- Received very good student feedback from both undergraduate and postgraduate level for excellent teaching capability

5. Research Fellow
Future Grid Research Centre/ National ICT Australia,
The University of Melbourne, Parkville,
VIC 3010, Australia.
Period: January 2013 – July 2013

Key Responsibilities:
- Conducting original research in the area of renewable energy integration into victorian power grid
- Publishing research results in top-ranked journal papers and conference proceedings
- Supervising Master by research and PhD students

Major Achievements:
- Developed the power system model for whole Victoria to meet the industry standards.
- Published several journal papers which have impact factors of more than 3.

6. Research Publication Fellow
The University of New South Wales, Canberra,
ACT 2600, Australia.
Period: September 2012 – December 2012

Key Responsibilities:
- Conducting original research in the area of renewable energy and smart grid
- Publishing research results in top-ranked journal papers

Major Achievements:
- Submitted several papers to top-ranked journals
- Developed a new solar photovoltaic lab

7. Tutor and Lab Demonstrator
The University of New South Wales, Canberra,
ACT 2600, Australia.
Period: March 2009 – August 2012

Key Responsibilities:
- Lecturing and lab demonstration on casual basis
- Laboratory experiments for digital control
- Conducting experiments related to electrical power engineering

Major Achievements:
- Participated to develop the electrical machine and power laboratory
- Designed a simple controller for a real-time small-scale power system

8. Lecturer
Rajshahi University of Engineering & Technology (RUET), Rajshai-6204, Bangladesh.
Period: December 2008 – March 2009

Key Responsibilities:
- Teaching undergraduate students and supervising theses and projects related to instrumentations and measurements
- Conducting research and collaborating with industries

- Contributing to administrative work, such as preparing results, coordinating class, admissions, etc.
- Testing of different types of electrical equipment before installing at industries

Major Achievements:
- Upgradation of course materials for power engineering related subjects
- Development of new testing procedures for testing electrical equipments

9. Lecturer   Khulna University of Engineering & Technology
                                    (KUET), Khulna-9203, Bangladesh.
                                    Period: October 2008 – December 2008

Key Responsibilities:
- Teaching undergraduate students and supervising theses and projects related to microprocessors and instrumentations
- Conducting research and collaborating with industries
- Contributing to administrative work, such as preparing results, coordinating class, admissions, etc.
- Testing of different types of electrical equipment before installing at industries

Major Achievements:
- Completion of several exciting projects using solar development kits
- Produced several video tutorial notes for students

10. Electrical Engineer   Huawei Technologies (Bangladesh) Limited
  (Radio Network Planning)   Uday Tower, Gulshan-1, Dhaka, Bangladesh.
                                     Period: April 2008 – October 2008

Key Responsibilities:
- Planning of cellular network
- Real time data analysis for cell congestion
- Extensive planning using Huawei standard software U-Net and MapInfo
- Optimization of radio network using NASTAR.
- Planning team leader for Grameen Phone (BD) Ltd project
- Convincing customer, i.e., cellular network operator by providing satisfactory technical solutions

Major Achievements:
- Successfully planned and optimized over 70 cellular networks in different regional areas of Bangladesh
- Top position in the training assessment
- Employee of the month in June, 2008

Academic Leadership Roles

- Impact Case Study Lead (UoA12 & Department of Mathematics, Physical and Electrical Engineering @Northumbria): October 2021 – Present.
- Research Group Leader (Electrical Power and Energy Systems @Northumbria): October 2021 – Present.
- Member, Department Management Group @Northumbria: January 2022 – Present.

- Research Training Committee Member (School of Engineering @Deakin): July 2017 – October 2021.
- Director (Electrical Power and Energy Systems Research Lab @Deakin): January 2016 – October 2021.
- Course Team Committee Member (School of Engineering @Deakin): March 2015 – October 2021.
- International Coordinator (School of Engineering @Deakin): March 2018 – October 2021.
- Discipline Head and Course Coordinator (Electrical & Electronics Engineering): March 2015 – December 2020.

Personal Achievements/Awards

- **Outstanding Chapter Volunteer Award 2019,** IEEE PES Victorian Chapter
- **Australia–India Strategic Research Fund (AISRF) Early- and Mid-Career Fellowships 2019**, Australian Academy of Science
- **Earlier Career Researcher for 2017,** School of Engineering, Deakin University, Australia
- **The BAE Systems Australia PhD Engineering Prize- For the best performance by a graduating PhD student specializing in Engineering**
- Best paper awards from several IEEE conferences
- University International Postgraduate Award (UIPA)- Awarded by the University of New South Wales (UNSW) to continue PhD in Electrical Engineering
- Several travel grants from UNSW to attend different international conferences
- **University Gold Medal- For extra ordinary performance throughout the undergraduate studies**
- University Grant Commission (UGC) Scholarship- For the 1st position in the Faculty of Electrical and Computer Engineering at RUET
- Board of Intermediate & Secondary Education (BISE) Scholarship- For excellent performance at Secondary and Higher Secondary level

Successful External Research Projects

Project 8:
    Project Tittle: Smart Mobile Power System Design with Advanced Technologies
    Funding Amount: GBP50,000
    Funding Organisation: Vero Power Grid Ltd
    Role: Sole and Principal Investigator
    Project Duration: February 2022 to February 2025

Project 7:
    Project Tittle: Preliminary Studies for BritishVolt's Energy System
    Funding Amount: GBP40,000
    Funding Organisation: BritishVolt
    Role: Co-Investigator and Task Leader
    Project Duration: October 2021 to February 2022

Project 6:

Project Tittle: ARC Training Centre in Energy Technologies for Future Grids
Funding Amount: AUD5,000,000
Funding Organisation: Australian Research Council
Role: Chief Investigator and Theme Leader (Sole from Deakin)
Other Organisations: The University of Wollongong (Lead), The University of New South Wales, Curtin University, University of Tasmania, University of Queensland and more than 10 industry partners
Project Duration: June 2021 to Dec 2026

Project 5:

Project Tittle: Performance Analysis of Compensated Distribution Networks in Bushfire Prone Areas (Stage 1 and Stage 2)
Funding Amount: AUD340,355
Funding Organization: Department of Environment, Land, Water and Planning (DELWP) and AusNet Services
Role: Sole Chief Investigator
Project Duration: June 2021 to June 2023

Project 4:

Project Tittle: Robust Distributed Intelligent Controller Design for Distributed Energy Resources in Microgrids
Collaborators: MNIT-Jaipur and IIT-Bombay
Funding Amount: AUD15,600
Funding Organization: Australian Academy of Science through Australia–India Strategic Research Fund (AISRF) Early- and Mid-Career Fellowships 2019
Role: Sole Chief Investigator
Project Duration: June 2019 to September 2019

Project 3:

Project Tittle: New Australian performance standards for home battery storage systems
Collaborators: Deakin University, DNV-GL Australia, CSIRO, and Smart Energy Council
Total Funding Amount: AUD1,900,000 (ARENA: AUD1,400,000+Victorian Government: AUD500,00)
Funding Organization: Australian Renewable Network Agency (ARENA) and Victorian Government
Role: Deakin Chief Investigator
Other Deakin Investigators: M. E. Haque, S. Saha, and S. N. Islam
Project Duration: 2018 to 2020
Media Release: https://arena.gov.au/news/new-australian-performance-standards-for-home-battery-storage-systems/

Project 2:

Project Tittle: NOJA Power's intelligent network control device to capture real-time data on energy networks

Collaborators: Australian Energy Market Operator (AEMO), Deakin University, University of Queensland, AusNet Services and Energy Queensland, Noja Power
Total Funding Amount: AUD5,000,000
Funding Organization: Australian Renewable Network Agency (ARENA)
Role: Deakin Chief Investigator
Other Deakin Investigators: Amanullah M. T. Oo, S. N. Islam, S. Saha, M. A. Gargoom, M. E. Haque, and M. T. Arif
Project Duration: 2018 to 2020
Media Release: https://arena.gov.au/news/noja-powers-intelligent-network-control-device-capture-real-time-data-energy-networks/

Project 1:
Project Tittle: Transient Analysis and Bushfire Mitigation of Power Lines for AusNet Services
Total Funding Amount: AUD703,679
Funding Organization: AusNet Services
Role: Lead Chief Investigators
Other Investigators: Amanullah M. T. Oo, M. E. Haque, M. Subhani, and M. T. Arif
Chief Investigators: Project Leader
Project Duration: July 2015 to December 2020

Internal Grants (Total=AUD373,190)

- School of Engineering Small Research Grant (2019)- AUD7,000
- Social Science Network Fund (2019)-AUD5,000
- School of Engineering Small Research Grant (2018)- AUD14,000
- School of Engineering Large Research Grant (2018)- AUD50,000
- SEBE Research Grant (2018)-AUD17,000
- School of Engineering Small Research Grant (2017)- AUD7,000
- School of Engineering Large Research Grant (2017)- AUD22,000
- SEBE Research Grant (2017)-AUD30,000
- School of Engineering Research Grant (2016)- AUD20,000
- ECR Minor Equipment Grant (2016) (Funded by Deakin University)- AUD18,085
- PVC Funding Scheme (2015)- AUD41,825
- ECR Equipment Funding Scheme (2015)- AUD23,985
- Swinburne Research Infrastructure Investment Scheme (2013-2014)- AUD82,000
- Swinburne Teaching Infrastructure Grant (2013)- AUD19,000
- Swinburne Start Up Grant (2013-2015)- AUD10,000
- UNSW Conference Travel Grant (2009-2012)- AUD7,300

Higher Degree Research (HDR) Student Supevision

- **Supervision to Completion (Total: 13 research students including 8 PhD & 5 Master by Research)**:
  ✓ Principal Supervisor: 5 PhD and 2 Master by Research Students at Deakin
  ✓ Associate Supervisor: 1 PhD student at Deakin

- ✓ External Supervisor: 2 PhD & 1 Master by Research students from UNSW Australia and 2 Master by Research students from UTP Malaysia
- **Current Supervision**:
  - ✓ Principal Supervisor: 3 PhD Students (2 at Northumbria and 1 at Deakin)
  - ✓ Associate Supervisor: 2 PhD Students at Deakin
  - ✓ External Supervisor: 1 PhD and 1 Master by Research students from UTP Malaysia

Professional Affiliations

- Chartered Engineer (CEng)
- Senior Fellow of Higher Education Academy
- Senior Member- Institution of Electrical & Electronics Engineer (IEEE)
- Member- IEEE Power & Energy Society (IEEE-PES)
- Member- IEEE Control System Society (IEEE-CSS)
- Member-IEEE Industrial Applications Society (IEEE-IAS)
- Member- International Federation of Automatic Control (IFAC)
- Member- Asian Control Association (ACA)
- Member- Engineers Australia

Journal Editorial Activities

- **Associate Editor:** IEEE Transactions on Industry Applications – December 2020 to present
- **Associate Editor:** IEEE Industry Applications Magazine– December 2020 to present
- **Associate Editor:** Electronics – July 2020 to present
- **Associate Editor:** Energies – February 2021 to present
- **Deputy Subject Editor:** IET Renewable Power Generation – February 2021 to present
- **Associate Editor:** IET Renewable Power Generation – October 2018 to present
- **Associate Editor:** IET Generation, Transmission and Distribution- September 2018 to present
- **Associate Editor:** IEEE Access- January 2018 to present
- **Associate Editor:** IEEE Systems Journal- June 2020 to December 2022
- **Associate Editor:** Electronics- September 2020 to present
- **Associate Editor:** IEEE Access- January 2018 to present
- **Managing Editor:** Technology and Economics of Smart Grid and Sustainable Energy, Springer (2014 to June 2020)
- **Special Issue Editor:** Technology and Economics of Smart Grid and Sustainable Energy, Springer (June 2020-December 2022)

Scholarly Activities and External Engagement

- **Publication Chair:** 2019 Australasian Universities Power Engineering Conference (AUPEC2019)

- **Publication Chair:** 2019 International Conference on Smart Power & Internet Energy Systems (SPIES2019)
- **Publication Chair:** 2018 Australasian Universities Power Engineering Conference (AUPEC2018)
- **Immediate Past Chair:** IEEE PES VIC Chapter (2018-2019)
- **Publication Chair and Secretary**: 2017 Australasian Universities Power Engineering Conference (AUPEC2017)
- **Chair:** IEEE PES VIC Chapter (Elected for the period of 2016-2017)
- **Treasurer:** IEEE PES VIC Chapter (Elected for the period of 2014-2015)
- **International Program Committee Member:** IEEE Power and Energy Society Innovative Smart Grid Technology-Latin America 2015 (ISGT-LA 2015) Conference, Uruguay.
- **International Program Committee Member:** 1st International Conference on Industrial Networks and Intelligent Systems (INISCom 2015).
- **Session Co-Chair:** IFAC World Congress (IFAC 2014), Cape Town, South Africa.
- **Reviewer:** Almost all IEEE Transactions and Journals sponsored by IEEE Power and Energy Society, IEEE Industry Applications Society, IEEE Industrial Electronic Society, and IEEE Power Electronics Society. All reviewers for all top power, energy, and control engineering journals.

Invited or Keynote Talks/Seminars/Presentations/Workshops

1. Invited talk:
   Title: Resonant Grounded Power Distribution Networks: Challenges and Solutions
   Organizer: IEEE PES Day, IEEE PES Bangladesh Chapter
   Month and Year: October 2022
2. Keynote talk:
   Title: Local Energy Trading Frameworks for Residential Microgrids: A Game Theoretic Approach
   Organizer: 2nd International Conference on Innovations in Power and Advanced Computing Technologies (i-PACT-2019), Vellore, India
   Month and Year: March 2019
3. Invited seminar:
   Title: Opportunities for Higher Studies in Abroad and Ways of Conducting Research
   Organizer: Department of Electrical and Electronic Engineering, Bangladesh Army University of Science and Technology (BAUST), Bangladesh
   Month and Year: February 2019
4. Invited seminar:
   Title: Opportunities for Higher Studies in Abroad and Ways of Conducting Research
   Organizer: Department of Electrical and Computer Engineering, Rajshahi University of Engineering and Technology (RUET), Bangladesh
   Month and Year: February 2019
5. Invited seminar:
   Title: Nuts & Bolts for Higher Degree Research (HDR) Opportunities in Australia
   Organizer: Faculty of Engineering and Applied Sciences, Bangladesh University of Business and Technology (BUBT), Bangladesh
   Month and Year: February 2019
6. Invited seminar:

Title: Opportunities for Higher Studies and Current Research Trends in Australia
Organizer: Faculty of Engineering, Mawlana Bhashani Science and Technology University (MBSTU), Bangladesh
Month and Year: February 2019

7. Invited seminar:
   Title: Opportunities for Higher Studies in Abroad
   Organizer: Department of Computer Science and Engineering, Varendra University, Bangladesh
   Month and Year: January 2019

8. Invited seminar:
   Title: Nuts & Bolts for Higher Degree Research (HDR) Opportunities in Australia
   Organizer: Faculty of Computer Science and Engineering, Hajee Mohammad Danesh Science & Technology University (HSTU), Bangladesh
   Month and Year: January 2019

9. Invited Talk:
   Title: Deakin EPESRL and Publishing High in Impact Journals
   Organizer: School of Electrical Engineering, VIT University Vellore, India
   Month and Year: December 2019

10. Invited Talk:
    Title: Solar Energy Integration and Power Quality
    Organizer: School of Electrical Engineering, VIT University Vellore, India
    Month and Year: December 2019

11. Workshop:
    Title: Nonlinear Controller Design for Conventional and Modern Power Networks
    Organizer: School of Electrical Engineering, VIT University Chennai, India
    Month and Year: December 2019

12. Invited Talk:
    Title: Future Career Prospects for Research Scholars after Completing PhD
    Organizer: School of Electrical Engineering, VIT University Chennai, India
    Month and Year: December 2019

13. Invited talk:
    Title: A transactive energy management framework for energy trading in a residential microgrid cluster
    Organizer: Department of Electrical & Electronics Engineering, University Technology Petronas, Malaysia
    Month and Year: September 2018

14. Invited talk:
    Title: A transactive energy management framework for energy trading in a residential microgrid cluster
    Organizer: School of Information Technology and Electrical Engineering, The University of Queensland, Australia
    Month and Year: November 2017

15. Invited talk:
    Title: A transactive energy management framework for energy trading in a residential microgrid cluster
    Organizer: School of Electrical Engineering, VIT University Chennai, India
    Month and Year: November 2017

16. Invited talk:
    Title: A hierarchical transactive energy management framework for residential microgrids

Organizer: IEEE IUB Student Branch and Independent University Bangladesh (IUB), Bangladesh
Month and Year: January 2017

17. Invited talk:
    Title: A hierarchical transactive energy management framework for residential microgrids
    Organizer: IEEE Power & Energy Society (PES) Bangladesh Section, IEEE AUST Student Branch, and Ahsanullah University of Science and Technology (AUST), Bangladesh
    Month and Year: January 2017

18. Invited seminar:
    Title: What to do to publish high impact journal papers?
    Organizer: IEEE RUET Student Branch, Rajshahi University of Engineering and Technology (RUET), Bangladesh
    Month and Year: January 2017

19. Invited seminar:
    Title: Nuts & Bolts for Higher Degree Research (HDR) Opportunities in Australia
    Organizer: RUET Career Forum, Rajshahi University of Engineering and Technology (RUET), Bangladesh
    Month and Year: January 2017

20. Invited talk:
    Title: What to do to publish high impact journal papers?
    Organizer: School of Electrical Engineering, VIT University Chennai, India
    Month and Year: July 2016

21. Invited seminar:
    Title: A hierarchical transactive energy management framework for residential microgrids
    Event: National Seminar on Current Research Trends in Power Engineering
    Organizer: VIT University Chennai, India.
    Month and Year: July 2016

22. Invited seminar:
    Title: Analysis of voltage rise effects on minigrid due to the interconnection of distributed energy resources (DERs)
    Event: International Minigrid Workshop
    Organizer: CSIRO Energy Centre, Newcastle, Australia.
    Month and Year: November 2010

List of Publications (Total=268)

Edited Books (Total=2):

1. M. J. Hossain and **M. A. Mahmud** (Ed.), "Renewable Energy Integration: Challenges and Solutions," Springer-Verlag: Singapore, February, 2014.
2. M. J. Hossain and **M. A. Mahmud** (Ed.), "Large Scale Renewable Power Generation: Advances in Technologies for Generation, Transmission and Storage," Springer-Verlag: Singapore, March, 2014.

Book Chapters (Total=8):

1. A. Saxena, R. Kumar, R. C. Bansal, and **M. A. Mahmud**, "Bidding strategies of a power producer in power market: measurement indices and evaluation," in Uncertainties in Modern Power Systems, Ahmed F. Zobaa and Shady H.E. Abdel Aleem, Eds. Elsevier, 2021, pp. 635-652.
2. S. Lynden, M. E. Haque, and **M. A. Mahmud**, "Maximum Power Point Tracking Methods for PV Systems," in *Advances in Solar Photovoltaic Power Plants*, R. Isalm and F. Rahman, Eds. Springer-Verlag: Berlin Heidelberg, 2016, pp. 79-105.
3. A. Anwar, **M. A. Mahmud,** M. J. Hossain, and H. R. Pota, "Distributed Generation Capacity Planning for Distribution Networks to Minimize Energy Loss: An Unbalanced Multi-Phase Optimal Power Flow Based Approach," in *Handbook of Research on Emerging Technologies for Electrical Power Planning, Analysis, and Optimization*, S. Shandilya, T. Thakur, and A. K. Nagar, Eds. IGI Global: Hershey, USA, 2016, pp. 76-95.
4. **M. A. Mahmud**, "Power conversion technology in the smart grid and EV," in *Vehicle-to-Grid: Linking Electric Vehicles to the Smart Grid*, J. Lu and M. J. Hossain, Eds. IET: London, 2015, pp. 81-106.
5. **M. A. Mahmud**, H. R. Pota, and M. J. Hossain, "Worst case voltage variation on microgrid," in *Smart Power Grids 2011*, A. Keyhani and M. Marwali, Eds. Springer-Verlag: Berlin Heidelberg, 2012, pp. 305-318.
6. M. J. Hossain, H. R. Pota, and **M. A. Mahmud**, "Decentralized STATCOM/ESS control for wind generators," in *Smart Power Grids 2011*, A. Keyhani and M. Marwali, Eds. Springer-Verlag: Berlin Heidelberg, 2012, pp. 401-437.
7. **M. A. Mahmud**, H. R. Pota, and M. J. Hossain, "Stability analysis of grid-connected photovoltaic systems," in *Global Sustainable Development and Renewable Energy Systems*, P. Olla, Ed. IGI Global: Hershey, USA, 2012, pp. 254-270.
8. M. J. Hossain, H. R. Pota, and **M. A. Mahmud,** "Impacts of wind generators on the dynamic performance of power systems," in *Global Sustainable Development and Renewable Energy Systems*, P. Olla, Ed. IGI Global: Hershey, USA, 2012, pp. 189-208.

Refereed International Journals (Total=109):

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