

## **Dr. Md Masudur Rahman**

Associate Professor in Electrical and Electronic Engineering

Faculty of Engineering and Technology

Pabna University of Science and Technology, Rajapur, Pabna-6600, Bangladesh

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### **Career Aspirations**

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Building an academic career as a renowned research leader in the field of earth, atmosphere, meteorology and environmental science; where I will have the scope to utilize my potentiality, adaptability, and leadership to do something innovative and contributive for the betterment of living on earth and from where I will be able to make me a strong and highly productive research team member in the specific area of planetary sciences and/or with interdisciplinary research.

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### **Career Synopsis**

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#### **Research and scholarship**

Over the last few years, I have been able to change my previous electronics engineering major and build a reputation at both national and international levels in my current dreaming research areas of earth, atmosphere, meteorological and environmental sciences. To date, I have published 6 high quality referred publications (Q1 and Q2) in my current research interests along with some previously published articles, and 2 more papers is under review in two high quality (Q1) journals. The outcomes of my research have made significant contribution to the research community since 2017, my research articles have been cited more than 100 times with *H-index: 4* (as per Google Scholar). I have published 95% of my high-quality journal articles as first author. I have maintained a good research track record throughout and following the completion of my PhD with CAS-TWAS President's Fellowship at Chinese Academy of Sciences (CAS) by demonstrating proficiency in different environments. In particular, my works on the energy balance closure (EBC) problem in the atmospheric energy have been of attention to the scientific communities of eddy flux measurements. I have some contributions in the satellite-based estimation and validation of earth surface fluxes. Moreover, I am collaborating with some colleagues from Chinese Academy of Sciences. All these can clearly indicate that I am performing upright in research and scholarship and looking forward to further growing my research.

#### **Teaching and learning**

Though our careers are research driven but I think the research and teaching are two faces of the same coin. I would like to say that teaching would be interesting and compelling if I have research-oriented knowledge and findings to share with students in the class. While I am teaching, I think 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. From the first day of my teaching, I always try to make the affection behind the techniques and theories being presented to draw the student's attention to the basic concepts underlying the material taught. In case of mathematical and scientific terms, I seek to recognize the potential applications of these terms and concepts in the real-world situations. I feel this way can attract and uphold student's interest, which can be a crucial element of effective teaching. A teacher is to get students think critically so that they want to take challenge in problem

solving situations. I always believe in accessible and interactive teaching which ensure student's participation.

### **Service**

I am always willing to support the faculty and department when, and as, needed. I have always been viewed as someone who can be reliable and get the job done. I have been entrusted to undertake the roles of course director and course coordinator for my department. I have effectively navigated these responsibilities and supported the students and my colleagues. I believe that students are our future and the university without students is unmeaningful. At all times of my teaching, I go beyond my assigned responsibilities to cater my students either in their studies or social life. I also have an experience to work as an assistant proctor in my university for the welfare of the students for more than 2 years. I am always eager to engage myself in any services required by the faculty/department/university.

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### **Research Interests**

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- Measurement and instrumentation of earth surface and atmospheric components
- Satellite-based estimation validation of earth surface and atmospheric components
- Cartography and Geographic information system (GIS)
- Radiative transfer in atmosphere
- Modelling of the relationship between air pollutants and meteorological parameters at local, regional and global scale
- Energy Meteorology
- Satellite and in-situ measurement of solar energy at local, regional and global scale

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### **Core Educational Qualifications**

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#### **1. Doctor of Philosophy (PhD)**

Cartography and Geographic Information System *with the excellent Award*

Aerospace Information Research Institute, University of Chinese Academy of Sciences, Beijing-100094, China

Duration: 4 Years

Date of Completion: **January 5, 2020**

**Thesis Title:** Analysis of Surface Fluxes in Terms of Energy Balance Closure and Energy Partitioning over Different Surfaces Using Instrumental and Satellite Remote Sensing Techniques

#### **2. Master of Science**

Electrical and Electronic Engineering

Pabna University of Science and Technology, Pabna-6600, Bangladesh

Duration: 2 Years

Date of Completion: **June 13, 2013**

**Thesis Title:** Multiband Microstrip Antenna Design for Different Communication Systems and Analysis of its Environmental Effects.

#### **3. Bachelor of Science**

Electronics and Communication Engineering

Khulna University of Engineering & Technology (KUET), Khulna-9203, Bangladesh

Duration: 4 Years

Date of Completion: **February 22, 2008**

Major:

- Measurement and Instrumentation
- Electromagnetic Field and Wave
- Electronics
- Communication Engineering

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## Work Experiences

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- 1. Associate Professor**                      Department of Electrical and Electronic Engineering  
Pabna University of Science and Technology, Pabna-6600, Bangladesh  
**Period: December 2020- Present**

**Key Responsibilities:**

- Leadership in developing research group and fund applications
- Supervising undergraduate project/thesis students
- Teaching undergraduate courses
- Conducting classes and corresponding Labs
- Preparing assignments and examination questions
- Marking assignment and exam scripts, and exam invigilation

- 2. Assistant Professor**                      Department of Electrical and Electronic Engineering  
Pabna University of Science and Technology, Pabna-6600, Bangladesh  
**Period: June 2013 - November 2020 (On PhD study leave from March 2016 to March 2020)**

**Key Responsibilities:**

- Supervising undergraduate project/thesis students
- Teaching undergraduate and postgraduate courses
- Conducting classes and corresponding Labs,
- Preparing assignments and examination questions
- Marking assignment and exam scripts, and exam invigilation

- 3. Lecturer**                                      Department of Electrical and Electronic Engineering  
Pabna University of Science and Technology, Pabna-6600, Bangladesh  
**Period: October 2010 – June 2013**

**Key Responsibilities:**

- Supervising undergraduate project students
- Teaching undergraduate courses

- Conducting classes and corresponding Labs,
- Preparing assignments and examination questions
- Marking assignment and exam scripts, and exam invigilation

**4. Lecturer** Department of Electronics and Communication Engineering  
Sylhet International University, Sylhet-3100, Bangladesh  
**Period: May 2009 – September 2010**

#### Key Responsibilities:

- Supervising undergraduate project students
- Teaching undergraduate and postgraduate courses
- Conducting classes and corresponding Labs,
- Preparing assignments and examination questions
- Marking assignment and exam scripts, and exam invigilation

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#### Personal Achievements/Awards

- President’s International Fellowship Initiative (PIFI) Award 2020, Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences, China.
- Excellent International Student Award 2020- For excellent research work in PhD study at University of Chinese Academy of Sciences, China.
- CAS-TWAS President’s Fellowship Award (2016 to 2020)- For PhD study at Chinese Academy of Sciences, University of Chinese Academy of Sciences, Beijing, China.
- University Research Project Grant-2012- For MSc study at PUST, Pabna, Bangladesh.
- Undergraduate Merit order Scholarship (2004 to 2008)- For BSc study at KUET, Bangladesh.
- Board of Intermediate & Secondary Education (BISE) Scholarship- For excellent performance at secondary and higher secondary level

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#### Professional Affiliations

- Member- Institution of Electrical and Electronics Engineer (IEEE)
- Member-The Institution of Engineers, Bangladesh (IEB)
- Counselor- IEEE Student Branch at Pabna University of Science and Technology, Bangladesh

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#### List of Key Publications

1. **M.M. Rahman**, W. Shuo, W.Zhao, X. Xu, W.Zhang, A. Arshad, “Investigating the Relationship between Air Pollutants and Meteorological Parameters Using Satellite Data over Bangladesh”, *Remote Sens.* 14, 2757, 2022, **Q1**
2. F. Saleem, A. Arshad, A. Mirchi, T. Khaliq, X. Zeng, **M.M. Rahman**, A. Dilawar, Q.B. Pham, K. Mahmood, “Observed Changes in Crop Yield Associated with Droughts Propagation via Natural and Human-Disturbed Agro-Ecological Zones of Pakistan”, *Remote Sensing*, Vol. 14, 2152, 2022. **Q1**
3. **M. M. Rahman**, W. C. Zhang, & A. Arshad, “Regional Distribution of Net Radiation over Different Ecohydrological Land Surfaces,” *Atmosphere*, vol. 11, 1229(1-18), 2020. **Q2**
4. **M. M. Rahman**, & W. C. Zhang, “Validation of Satellite Derived Sensible Heat Flux for TERRA/MODIS Images over Three Different Landscapes Using Large Aperture Scintillometer and Eddy Covariance Measurements”, *IEEE Journal of Selected Topics on Applied Earth Observation and Remote Sensing*, vol. 12, no. 9, pp. 3327 – 3337, 2019. **Q1**

5. **M. M. Rahman**, W. C. Zhang, & K. Wang, “Assessment on surface energy imbalance and energy partitioning using ground and satellite data over a semi-arid agricultural region in north China,” *Agricultural Water Management*, vol. 213, pp. 245–259, 2019. **Q1**
6. **M. M. Rahman**, & W. C. Zhang, “Review on estimation methods of the Earth’s surface energy balance components from ground and satellite measurements”, *Journal of Earth System Science*, vol. 128, no. 84, pp. 1–22, 2019. **Q2**

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## Referees

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1. **Dr. Wanchang Zhang**

Professor

Aerospace Information Research Institute

Chinese Academy of Sciences (CAS), Beijing 10094, China

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2. **Dr. Dilip Kumar Sarker**

Professor

Electrical and Electronic Engineering

Pabna University of Science and Technology, Pabna-6600, Bangladesh

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3. **Dr. A. B. M. Aowlad Hossain**

Professor

Electronics and Communication Engineering

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