

# Dr. Md. Najmul Hossain

## Associate Professor

Dept. of Electrical, Electronic and Communication Engineering (EECE)  
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and

## Editor

Journal of Engineering Advancements, SciEn Publishing Group

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## Area of Research Interests

Wireless Communications and Corresponding Signal Processing for OFDM, OTFS, MIMO and Future-Generation Wireless Communication Networks; Antenna Design and Wave Propagation.

## Academic Credentials

- 2020 Ph.D. in Information and Computer Sciences (ICS), Graduate School of Science and Engineering, Saitama University, Saitama, Japan.
- 2008 M.Sc. in Applied Physics and Electronic Engineering (APEE) with First Class from the University of Rajshahi, Rajshahi-6205, Bangladesh.
- 2007 B.Sc. (HONOURS) in Applied Physics and Electronic Engineering (APEE) with First Class from the University of Rajshahi, Rajshahi-6205, Bangladesh.
- 2002 HIGHER SECONDARY CERTIFICATE (HSC) in Science Group with First Division from Jamira College, Puthia, Rajshahi, Bangladesh.
- 2000 SECONDARY SCHOOL CERTIFICATE (SSC) in Science Group with First Division from Jamira High School, Puthia, Rajshahi, Bangladesh.

## Ph.D. Thesis

**Title:** Reduction of Peak-to-Average Power Ratio and Out-of-Band Power Emission for OFDM and OTFS Systems.

## M.Sc. Thesis

**Title:** Study of the SIR-based Power Control Algorithms in Code Division Multiple Access Networks.

## Undergraduate (B.Sc. Honours) Thesis

**Title:** Medical Signal Processing on a PC for ECG using a Sensor.

## Publications

### JOURNAL ARTICLES (II)

- 2022 **Md. Najmul Hossain.** "Performance Evaluation of MIMO DFT-Spread WR-OFDM System for Spectrum Efficiency and Power Efficiency." *Journal of Information and Telecommunication*, Vol. x, No. x (2022): xx-xx. Published Online: 11 May 2022. **Scopus Indexed**  
DOI: <https://doi.org/10.1080/24751839.2022.2066847>
- 2022 **Md. Najmul Hossain**, Liton Chandra Paul, Md. Abdur Rahim, and Jungpil Shin. "Multiband Slotted Crescent-shaped Patch Antenna for K-band Satellite and mmWave Communications." *IEIE Transactions on Smart Processing & Computing*, Vol. x, No. x (2022): xx-xx. **Scopus Indexed**  
[Accepted]
- 2021 **Md. Najmul Hossain**, and Heung-Gyoon Ryu. "Advanced OTFS Communication System with Compact Spectrum and Power Efficiency Improvement." *International Journal of Communication Systems*, Vol. 34, No. 16 (2021): e4959. **SCIE Indexed**  
DOI: <https://doi.org/10.1002/dac.4959>
- 2020 **Md. Najmul Hossain**, Yosuke Sugiura, Tetsuya Shimamura, and Heung-Gyoon Ryu. "DFT-Spread OTFS Communication System with the Reductions of PAPR and Nonlinear Degradation." *Wireless Personal Communications*, Vol. 115, No. 3 (2020): 2211-2228. **SCIE Indexed**

DOI: <https://doi.org/10.1007/s11277-020-07678-4>

- 2019 **Md. Najmul Hossain**, Tetsuya Shimamura, and Heung-Gyoon Ryu. “Nonlinear Characteristics of DFT-Spread WR-OFDM System for Spectrum-efficient Communications.” *IEIE Transactions on Smart Processing & Computing*, Vol. 8, No. 6 (2019): 490-498. **Scopus Indexed**  
DOI: <https://doi.org/10.5573/IEIESPC.2019.8.6.490>
- 2014 Iffat Ara, **Md. Najmul Hossain**, and SM Yahea Mahbub. “Baseline Drift Removal and De-Noiseing of the ECG Signal using Wavelet Transform.” *International Journal of Computer Applications*, Vol. 95, No. 16 (2014): 15-17.  
DOI: <https://doi.org/10.5120/16678-6783>
- 2014 Iffat Ara, **Md. Najmul Hossain**, and Md. Abdur Rahim. “ECG Signal Analysis using Wavelet Transform.” *International Journal of Scientific & Engineering Research*, Vol. 5, No. 5 (2014): 1509-1515.
- 2013 Md. Rashedul Islam, Md. Babul Islam, Md. Firoz Ahmed, **Md. Najmul Hossain**, and Md. Abdur Rahim. “MEL-LP based Generalized Cepstral Analysis for Noisy Speech Recognition using HMM.” *International Journal of Scientific Research and Management (IJSRM)*, Vol. 1, No. 9 (2013): 466-470.
- 2013 **Md. Najmul Hossain**, Md. Abdur Rahim, and Iffat Ara. “SIR-based Power Control Algorithms in CDMA Networks.” *Global Journal of Computer Science and Technology, Network, Web & Security*, Vol. 13, No. 10 (2013): 41-45.
- 2013 **Md. Najmul Hossain**, Md. Abdur Rahim, Md. Rashedul Islam, and Md. Shafiul Azam. “Performance Analysis of Nash and Power Balancing Algorithms for SIR-Based Power Control in CDMA Networks.” *International Journal of Scientific & Engineering Research*, Vol. 4, No. 5 (2013): 2121-2125.
- 2013 Md. Abdur Rahim, **Md. Najmul Hossain**, Tanzillah Wahid, and Md. Shafiul Azam. “Face recognition using local binary patterns (LBP).” *Global Journal of Computer Science and Technology, Graphics & Vision*, Vol. 13, No. 4 (2013): 1-7.

#### INTERNATIONAL CONFERENCES (08)

- 2022 Md. Maticul Islam, Md. Ashraful Islam, and **Md. Najmul Hossain**. “Channel Estimation and Signal Detection in OFDM system using Deep Learning and its performance on Digital Modulation.” *International Conference on Physics-2022*, Atomic Energy Centre, Dhaka, Bangladesh, 19-21 May 2022.

- 2022 Md. Ashraful Islam, Md. Maticul Islam, Md. Firoz Ahmed, **Md. Najmul Hossain**, and Md. Hasnat Kabir. "Validate the Improvement of Footprint of the Female Connector on PCB Surface by Using HFSS." *International Conference on Physics-2022*, Atomic Energy Centre, Dhaka, Bangladesh, 19-21 May 2022.
- 2021 Sajeeb Chandra Das, Liton Chandra Paul, **Md. Najmul Hossain**, Md. Zulfiker Mahmud, and Rezaul Azim. "A Dual Band Miniaturized Spiral-shaped Patch Antenna for 5G and WiFi-5/6 Applications." *In 2021 IEEE International Conference on Signal Processing, Information, Communication and Systems (SPIC-SCON)*. [Accepted]
- 2021 Md. Moklesur Rahman, Heung-Gyoon Ryu, and **Md. Najmul Hossain**. "Ultra-Wideband Slotted Patch Antenna for mm-Wave Wireless Ku-band Satellite System." *In 2021 18th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON)*, pp. 491-494. IEEE, 2021.  
DOI: <https://doi.org/10.1109/ECTI-CON51831.2021.9454901>
- 2021 Md. Moklesur Rahman, Heung-Gyoon Ryu, and **Md. Najmul Hossain**. "A Compact Slotted Patch Antenna Design for Multiband Applications." *In 2021 IEEE Asia Pacific Conference on Wireless and Mobile (APWiMob)*, pp. 147-150. IEEE, 2021.  
DOI: <https://doi.org/10.1109/APWiMob51111.2021.9435241>
- 2021 Toufiq Aziz, Tarek Mahmud Faisal, Heung-Gyoon Ryu, and **Md. Najmul Hossain**. "Vehicle Speed Control and Security System." *In 2021 International Conference on Electronics, Information, and Communication (ICEIC)*, pp. 1-4. IEEE, 2021.  
DOI: <https://doi.org/10.1109/ICEIC51217.2021.9369808>
- 2020 **Md. Najmul Hossain**, Yosuke Sugiura, Tetsuya Shimamura, and Heung-Gyoon Ryu. "Waveform Design of Low Complexity WR-OTFS System for the OOB Power Reduction." *In 2020 IEEE Wireless Communications and Networking Conference Workshops (WCNCW)*, pp. 1-5. IEEE, 2020.  
DOI: <https://doi.org/10.1109/WCNCW48565.2020.9124756>
- 2018 **Md. Najmul Hossain**, Tetsuya Shimamura, Dayoung Kim, and Heung-Gyoon Ryu. "Waveform Design of DFT-Spread WR-OFDM System for the OOB and PAPR Reduction." *In 2018 International Conference on Information and Communication Technology Convergence (ICTC)*, pp. 792-796. IEEE, 2018.  
DOI: <https://doi.org/10.1109/ICTC.2018.8539398>

## Scholarships & Awards

- 2017 Japanese Government (Monbukagakusho) Scholarship awarded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) for pursuing doctoral degree in Japan (Period: October, 2017 to September, 2020).
- 2010 Received “Gold Medal” from the Honorable Vice-Chancellor of the University of Rajshahi for outstanding academic performance in B.Sc. (Honours) level.
- 2008 Secured 5th Position in M.Sc. (Thesis) Examination Results.
- 2007 Secured 3rd Position in B.Sc. (Honours) Examination Results.
- 2003-2007 Undergraduate scholarship from the University of Rajshahi throughout the four years for excellent academic performance.

## Teaching Experiences

- Dec.2020- Present **Associate Professor**, Department of Electrical, Electronic and Communication Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.
- Jan.2014- Dec.2020 **Assistant Professor**, Department of Electrical, Electronic and Communication Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.
- Jan.2012- Jan.2014 **Lecturer**, Department of Electrical, Electronic and Communication Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.

## Administrative Experience

- Nov.2021- Present Executive Member of the Academic Council in the Associate Professor category, Pabna University of Science and Technology, Pabna-6600, Bangladesh.

## Thesis Supervisions

### Thesis Title:

- Challenges and Possible Solutions of 5G Networks in Bangladesh.

- An Investigation into the Application of Machine Learning for Detection of DDOS Attacks over Cloud Computing Systems in IoT Networks.
- 5G-Future Generation Technologies of Mobile and Wireless Communication.
- Utility Maximization Power Control for Device to Device Communication in Cellular Network.
- Study of the Simple Distributed Autonomous Power Control Algorithm and its Convergence.
- Performance Evaluation of SIR-based Power Control Algorithms in CDMA Network.
- Power Control for a Spread Spectrum Cellular Mobile Radio System.
- Performance Analysis of Optimum Transmitter Power Control in Cellular Radio Systems.
- Cloud Networking and Security Issues in the Cloud.
- A Review on Cloud Network Security.

### **Reviewer of International Journals and Conferences**

- Wireless Personal Communications, Springer
- IEIE Transactions on Smart Processing and Computing, IEIE
- Journal of Engineering Advancements, SciEn Publishing Group
- Communications, Science Publishing Group
- International Conference on Electrical Engineering and Information Communication Technology (iCEEiCT), IEEE

### **Conducted Courses**

- Basic Electrical Engineering
- Basic Electronics
- Electrical Machine Systems
- Communication Fundamentals
- Radio and TV Engineering
- Cellular Mobile Communication

- Digital Communication
- Computer Architecture and Organization

### **Computer Proficiency**

- C, C++, Java, MATLAB, LaTeX, Microsoft Office

### **Personal Attributes**

- Strong work ethics, Hardworking, Time management, Critical thinking, Problem solving capacity, Leadership, Collaborations.

### **English Proficiency**

- Medium of Instruction is English in my teaching profession at the Pabna University of Science and Technology. We are strongly instructed to conduct courses, supervisions and discussions in English.
- Medium of Instruction was English in Ph.D. Program at the Graduate School of Science and Engineering, Saitama University, Saitama, Japan.
- Medium of Instruction was English in M.Sc. Program at the Dept. of Applied Physics and Electronic Engineering (APEE), University of Rajshahi, Rajshahi-6205, Bangladesh.
- Medium of Instruction was English in Undergraduate Program (B.Sc. (Honours)) at the Dept. of Applied Physics and Electronic Engineering (APEE), University of Rajshahi, Rajshahi-6205, Bangladesh.

### **Personal Informations**

FATHER'S NAME: Md. Zomsed Ali  
MOTHER'S NAME: Most. Rekha Begum  
PLACE AND DATE OF BIRTH: Puthia, Rajshahi, 31 December 1984  
NATIONALITY: Bangladeshi (By Birth)  
SEX: Male  
RELIGION: Islam  
MARITAL STATUS: Married  
BLOOD GROUP: B+ (B +ve)  
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## References

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- 2 DR. MD. ATOWAR RAHMAN  
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