



**Dr. Monir Hossen, SMIEEE, FIEB**

Professor

**Research Area** Publication Chair TPC

Secretary General Secretary: Organizing

Secretary: Research Projects: 4. 3. 2. 1.

Research Interest: Thesis Titles: Editorial

Board Member:

## Biography

Most welcome and thank you very much for visiting my website. My main research intention focuses on designing a modern city called ubiquitous city (u-City). A u-City is an autonomous city. A significant number of service providers such as fiber-to-the-home (FTTH), wireless sensor networks (WSNs), high-definition television (HDTV) or video on demand (VoD), and Femto networks (FNs), will comprise in the modern u-Cities. Each home and business appliance in a future u-City will be equipped with several sensor nodes remotely monitored by the owners and service providers. Usually, sensor nodes will send notifications to the central office (CO) concerning any abnormality of any household or commercial device that is expected to be deployed in the u-Cities, e.g., gas systems, temperature and pressure monitoring systems, electric sparking and smoke detection systems, automobile systems, and medical sensor nodes in a hospital. However, constructing a closed, specific-use network for each individual application and accommodating several users using different access terminals and servers require an enormous amount of time and expense. To overcome the enormous expense and deployment of several backbone networks for all the service providers, I have proposed a passive optical network (PON)-based converged network to connect the FTTH and WSNs in a single optical network, because the PON systems have enough bandwidth that can effectively share the upstream channel and the CO equipments over the high-speed and high-capacity bandwidth demands. The main objectives of my present researches are to provide a suitable network architecture and dynamic bandwidth allocation (DBA) algorithm for the PON-based hybrid networks for combining several service providers in a u-city with reduced overhead and better quality of services (QoS). If my present research outcomes are implemented then the several service providers of developed countries, e.g., USA, Japan, Korea, and Europe, will be connected by a single PON that will reduce the installation cost of new networks deployment. In my future research, I would like to extend my PON-based hybrid network concept for the open access network (OAN) in the over populated areas of developing countries, e.g., Bangladesh, India, Pakistan, etc., where the network cost per user will be less and provided that the better QoS will be guaranteed.

## Education

### Doctor of Philosophy in Information and Mechanical System Engineering

University of Yamanashi, Japan (2011-2014)

**Thesis Title:** [Architectures and Dynamic Bandwidth Allocation Algorithms for Passive Optical Hybrid Networks.](#)

### Master of Science in Electronics Engineering

Kookmin University, Seoul, Korea (2008-2010)

**Thesis Title:** [PON-based Large Sensor Network and its Protocol.](#)

### Bachelor of Science in Electrical & Electronic Engineering

Khulna University of Engineering & Technology (KUET), Bangladesh (1998-2002)

### Post Doctoral Follow-up Research Fellowship of Japan Student Services Organization (JASSO)

University of Yamanashi, Japan (2018-2018)

## Service Records

- **Lecturer**

**Department/Section:** Electronics and Communication Engineering

**Khulna University of Engineering & Technology (KUET)** From 2004-06-28 00:00:00 to 2007-07-07 00:00:00

- **Assistant Professor**

**Department/Section:** Electronics and Communication Engineering

**Khulna University of Engineering & Technology** From 2007-07-08 00:00:00 to 2015-11-28 00:00:00

- **Associate Professor**

**Department/Section:** Electronics and Communication Engineering

**Khulna University of Engineering & Technology** From 2015-11-29 00:00:00 to 2017-12-31 00:00:00

Working Area: Optical and Wireless Communication

- **Professor**

**Department/Section:** Electronics and Communication Engineering

**Khulna University of Engineering & Technology** From 2018-01-01 00:00:00 to 1970-01-01 06:00:00

## Research Interest

### Publication Chair

6th International Conference on Electrical Information and Communication Technology (EICT 2023), KUET, Khulna -9203.

### TPC Secretary

6th International Conference on Electrical Information and Communication Technology (EICT 2023), KUET, Khulna -9203.

### General Secretary:

1st International Conference on Information and Communication Technology for Development (ICICTD 2022), IICT, KUET, Khulna-9203.

**Organizing Secretary:**

4th International Conference on Electrical Information and Communication Technology (EICT2019), KUET, Khulna -9203.

**Research Projects:****4.**

Name of Project: Design and Performance Investigation of Multi-thread Online Polling Algorithm for Multi-OLT PON based Open Access Networks.  
Funding Authority: KUET, Bangladesh  
Amount: 68,000 BDT  
Duration: 01/07/2017 - 30/06/2018

**3.**

Name of Project: Performance investigation of PON based open access networks using concatenated OCDM technology  
Funding Authority: KUET, Bangladesh  
Persons: Dr. Monir Hossen  
Amount: 65,000 BDT  
Duration: 01/07/2015 - 30/06/2016

**2.**

Name of Project: Supplementary Fund for Developing Research Facilities for Teachers and Students in Department of Electronics and Communication Engineering at KUET  
Funding Authority: Sub-Project of Higher Education Quality Enhancement Project (HEQEP), UGC, Bangladesh  
Persons: Dr. Md. Faruque Hossain, Dr. Md. Mostafizur Rahman, Dr. Monir Hossen  
Amount: 70,00000 BDT  
Duration: 01/07/2017 - 31/12/2018

**1.**

Name of Project: Establishment of Virtual Lab for Collaborative Research in the area of Signal Processing and Communication Engineering  
Funding Authority: Sub-Project of Higher Education Quality Enhancement Project (HEQEP), UGC, Bangladesh  
Persons: Dr. Pallab Kumar Choudhury, Md. Alamgir Hossain, Dr. Monir Hossen, Mehanuma Tabassum Omar  
Amount: 151,00000 BDT  
Duration: 01/07/2014 - 30/06/2016

**Research Interest:**

- \* Optical networks
- \* PON-based hybrid networks and its algorithm
- \* MAC protocol of wireless sensor network
- \* Vehicular Ad Hoc Network (VANET)

**Thesis Titles:**

- \* PhD Thesis Title:- Architectures and dynamic bandwidth allocation algorithms for passive optical hybrid networks
- \* M. Sc. Thesis Title:- PON-based large sensor network and its protocol

**Editorial Board Member:**

- \* Journal of Asian Science, Technology & Innovation (JASTI)
- \* International Journal of Wireless & Mobile Networks (IJWMN)
- \* International Journal of Innovative Research in Electronics and Communications (IJIREC)
- \* American Journal of Science, Engineering and Technology (AJSET)
- \* Journal of Frontiers in Communications and Networks

**Publication**

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**Books**

1(2020) ," Cross-Correlation-Based Fisheries Stock Assessment Technique: Utilization of Standard Deviation of Cross-Correlation Function as Estimation Parameter with Four Acoustic Sensors", **Underwater Work** , ISBN:978-1-78985-222-6,IntechOpen, UK, DOI:10.5772/intechopen.93240