



**Dr. Md. Arifuzzaman**  
Professor

**Research Area** Composite Materials,  
Building Materials, Sandwich Structures

## Biography

Md. Arifuzzaman an experienced academic with a proven history of working at the university since 2010. His research experiences include manufacturing and characterization of composite materials such as particulate composites, fiber-reinforced composites, and sandwich structures for applications in construction and building industries. He is skillful in manufacturing composite materials, testing their mechanical and thermal properties, designing experimental setups, characterizing materials using SEM and EDS, writing grant applications and research papers, etc. Prof. Arifuzzaman is also working as a Testing Officer at CRTS (Consultancy, Research and Testing Services) of the Department of Mechanical Engineering, KUET. He is a member of the Institution of Engineers (IEB), Bangladesh. He developed novel composites using expanded perlite particles and sodium silicate solution for building wallboard and ceiling tiles applications. He developed a predictive model for compressive strength based on the rule of mixtures. He modeled the foam and particle envelope densities and volume fractions theoretically for prediction and practical evaluation. A new evaluative method was developed for the calculation of volume fractions in the composites and validated against syntactic foams. He also theoretically conceptualized the plane stress and plane strain conditions for compressive strength and modulus of perlite syntactic foams, and their existence was experimentally verified for practical characterization. He identified the failure mechanism of perlite composites and their sandwich structure under flexural loading which gives the future direction of improvement. He found a unique diffusion behavior of the perlite/sodium silicate composite and investigated the method of finding the diffusion coefficients. Currently, He is working on the improvement of the mechanical properties of perlite/sodium silicate particulate composite materials. He is also working on the strengthening mechanisms of gypsum-based composites. Prof. Arifuzzaman has published 20 papers in reputed peer-reviewed journals and presented my work at 20 international conferences worldwide. He has examined 1 Ph. D. (Italy) and 3 M. Sc. Engineering theses (Bangladesh). He has taught several courses at the undergraduate and postgraduate levels and supervised more than 20 undergraduate (B. Sc. Engineering) and 1 postgraduate (M. Sc. Engineering) theses. He has been awarded several prestigious awards and scholarships throughout my academic career including three Best Paper Awards, the Postgraduate Research Prize, and the Prime Minister Gold Medal. My goal is to become a leader in teaching and research in the field of Construction Materials Engineering.

## Education

### Doctor of Philosophy in Mechanical Engineering

The University of Newcastle, Australia (2013-2017)

### Master of Science in Mechanical Engineering

Khulna University of Engineering & Technology (KUET), Bangladesh (2010-2012)

### Bachelor of Science in Mechanical Engineering

Khulna University of Engineering & Technology (KUET), Bangladesh (2006-2010)

## Service Records

- **Professor**  
**Department/Section:** Mechanical Engineering  
**Khulna University of Engineering & Technology** *From to*
- **Associate Professor**  
**Department/Section:** Mechanical Engineering  
**Khulna University of Engineering & Technology** *From to*
- **Testing Officer**  
**Department/Section:** Mechanical Engineering  
**Khulna University of Engineering & Technology** *From to*  
Working Area: Consultancy, Research and Testing Services
- **Assistant Professor**  
**Department/Section:** Mechanical Engineering  
**Khulna University of Engineering & Technology (KUET)** *From to*
- **Lecturer**  
**Department/Section:** Mechanical Engineering  
**Khulna University of Engineering & Technology (KUET)** *From to*

## Research Interest

### Composite Materials, Building Materials, Sandwich Structures

Lightweight particles filled building materials, Fibre reinforced composites, FEA of materials