

## Keynote Talk by Prof. Dr. Engr. Sharmin Reza Chowdhury & Prof. Dr. Md Ashraful Alam

### Integrating Sustainability in Engineering Education

#### ABSTRACT

Integrating sustainability into engineering education has become a global imperative as the world faces unprecedented challenges of resource depletion, environmental degradation, and climate change. Preparing future engineers to address these complex issues requires a transformative shift in curriculum design, pedagogy, and institutional culture. This keynote will explore how sustainability principles can be systematically embedded into engineering programs through project-based and problem-based learning, cutting-edge research for sustainable solutions, interdisciplinary collaboration, and strong linkages with industry to address real-world sustainability challenges. It will also discuss strategies for aligning relevant educational outcomes on required graduate attributes of GAPC version 4 (Washington Accord) with the Sustainable Development Goals (SDGs) through outcome-based education and accreditation processes guided by international and national frameworks such as those of IEA (Washington Accord) and BAETE. The keynote will also address the challenges of the academic institutes such as curriculum overload, assessment of sustainability competencies, and contextual implementation to cultivate “green skills” and produce responsible, ethical, and sustainability-oriented professionals capable of leading the transition toward a more resilient and equitable future.



**Dr. Engr. Sharmin Reza Chowdhury**

Professor  
Department of Civil Engineering,  
Ahsanullah University of Science and  
Technology  
Vice-Chairman, Board of Accreditation  
for Engineering and Technical Education

*Prof. Dr. Sharmin Reza Chowdhury is the Treasurer of Ahsanullah University of Science and Technology (AUST) and a Professor of Civil Engineering. He completed his BSc and MSc in Civil/Structural Engineering from BUET and earned his PhD from Bogazici University, Turkey.*

*At AUST, he has served in major leadership roles, including Head of the Civil Engineering Department, Director of Planning & Development, Chairman of the Admission Committee, Advisor of Students' Welfare, and Syndicate Member. He has delivered keynote speeches, chaired sessions at national and international events, and contributed significantly to BAETE as an evaluator, currently serving as its Vice-Chairman (since March 2025). Dr. Chowdhury has also been involved in national initiatives such as a JICA–GoB project and has served as an expert member for PSC and CAAB committees. With numerous publications, he is a recipient of the IEB Best Paper Award and the Bogazici University Fellowship, and his research spans seismic analysis, building materials, construction, and structural retrofitting, alongside extensive supervision and journal review activities.*



**Dr. Md Ashrafal Alam**

Member secretary  
Board of Accreditation for Engineering  
and Technical Education (BAETE), IEB  
Professor  
Department of Civil Engineering  
University of Asia Pacific, Dhaka

*Dr. Md Ashrafal Alam is a Professor at the Department of Civil Engineering, University of Asia Pacific (UAP), Dhaka, Bangladesh. Before joining at UAP in 2017, he was a senior lecturer (in the period of 2011-2017) at National Energy University (UNITEN), Malaysia. Dr. Alam had completed Ph.D (2010) and M.Engg (2006) from University of Malaya in the field of Structural Engineering and B.Sc in Civil Engineering from BUET in 2003.*

*He is experienced with Outcome Based Education (OBE) system both for undergraduate and postgraduate engineering educations. At present, he is the member secretary of BAETE, was also member of coordination committee and evaluation team of the board. He was the coordinator of moderation committee of complex engineering problem at UNITEN. Dr Alam supervised two PhD and twenty-six masters students. He is highly interested and actively involved with product / industry based research, innovated anchor systems; high strength natural fibre composite plates for strengthening of structures. He published more than 80 research articles in journals and conferences, secured medals from national and international research exhibition including ITEX, MTE and UNIREX. Dr Alam directed several research grants from Ministry of Malaysia and Bangladesh. He is director of IQAC, UAP and life time fellow of Institution of Engineers, Bangladesh.*