

NASIM UDDIN, Ph.D., P.E., F.ASCE

Professor

Department of Civil and Environmental Engineering

The University of Alabama at Birmingham

Phone: 205-934-8432, Fax: 205-934-9855; e-mail: nuddin@uab.edu

Professional Preparation

- State University of New York at Buffalo 1992 Ph.D. Civil Engineering
- University of Oklahoma 1989 MS Civil Engineering
- Bangladesh University of Engineering & Technology 1986 BS Civil Engineering

Appointments

- 2010-Present: Professor and Undergraduate Program Director, Department of Civil and Environmental Engineering, University of Alabama at Birmingham, Birmingham, Alabama
- 2004-2010: Associate Professor and Undergraduate Program Director, Department of Civil and Environmental Engineering, University of Alabama at Birmingham, Birmingham, Alabama
- 2001-2004: Assistant Professor and ABET Assessment Coordinator, Department of Civil and Environmental Engineering, University of Alabama at Birmingham, Birmingham, Alabama
- 1997-2001: Assistant Professor of Civil Engineering, University of Evansville (UE), Indiana
- 1992-1997: Project Engineer, Acres International Corporation, New York
- 1996-1997: Adjunct Faculty, State University of New York (SUNY) at Buffalo, New York
- 1986-1988: Assistant Professor of Civil Engineering, Bangladesh University of Engineering & Technology, Dhaka, Bangladesh

Most Recent Selected Publications (2010-2012) (*with graduate students)

1. *Mousa. M. and Uddin, N. (2012) "Structural Behavior and Modeling of Full-Scale Composite Structural Insulated Wall Panels" *Journal of Engineering Structures*, Vol. 41, pp. 320–334
2. Uddin, N. (2012) "Issues in the Creation of Underground Reservoirs for Massive Energy Storage", *IEEE Journal Special Issue: Addressing the intermittency challenge: Massive energy storage in a sustainable future*, (invited paper); Vol. 100, No. 2, February 2012.
3. Uddin, N., Dowling, J., *Zhao, Z., Gonzalez, A, and Obrien, E., "Field Verification of a Filtered Measured Influence Line Approach to the Bridge Weigh-in-Motion Algorithm," *Proceedings of the 6th International Conference on Weigh-In-Motion ICWIM6*, Dallas, Texas (April 4-7, 2012).
4. *Mousa. M. and Uddin, N. (2012) "Flexural Behavior of Full-Scale Composite Structural Insulated Floor Panels" *Journal of Advanced Composite Materials*, accepted for publication.
5. *Kalyankar. R. and Uddin, N. (2012) "Manufacturing and Structural Characterization of Natural Fiber Reinforced Polymeric (NFRP) Laminates for Building Construction", *Journal of Polymers and the Environment*, doi: 10.1007/s10924-011-0377
6. Uddin, N., Zhao, H., and Obrien, E., 2012 "Use of Weigh-In-Motion (WIM) Data for Site-Specific LRFR Bridge Rating," *Proceedings of the 6th International Conference on Weigh-In-Motion ICWIM6*, Dallas, Texas (April 4-7, 2012).
7. Zhao, H and Uddin, N. "Axle weights identification with moving force identification theory", 18th International Association for Bridge and Structural Engineering (IABSE) Congress on Innovative Infrastructures toward Human Urbanism, Seoul, Korea, September 19-21, 2012
8. Zhao, H and Uddin, N. "Algorithm to identify axle weights for an innovative BWIM system", *Advances in Bridge Engineering-II*, 8-10 August, 2010, Dhaka, Bangladesh, pp.527-536
9. *Uddin, N. and Kalyankar. R. and (2011) "Manufacturing and Structural Feasibility of Natural Fiber Reinforced Polymeric Structural Insulated Panels (NSIPs) for Panelized Construction", *International Journal of Polymer Science*, Volume 2011 (2011), Article ID 963549, 7 pages; doi:10.1155/2011/963549
10. *Mousa. M. and Uddin, N. (2011) "Global Buckling of Composite Structural Insulated Wall Panels" *Journal of Materials and Design*, volume 32, issue 2, year 2011, pp. 766 - 772
11. *Kalyankar. R. and Uddin, N. (2010) "Structural Characterization of Natural Fiber Reinforced Polymeric Structural Insulated Panels (NSIPs) for Panelized Construction", *Journal of Reinforced Plastics and Composites*, volume 30, issue 11, year 2011, pp. 988 – 994.
12. *Mousa, M. and Uddin, N. (2010) "Performance of Composite Structural Insulated Panels (CSIPs)

after Exposure to Natural Disaster" *ASCE Journal of Performance for Constructed facilities*, accepted for publication.

13. *Mousa, M. and Uddin, N. (2010) "Debonding of Composites Structural Insulated Sandwich Panels" *Journal of reinforced plastics and composites*, Vol. 29, No. 22, pp. 3380-3391.
14. *Vaidya, A., Uddin, N. and Vaidya, U. 2010. "Design and Analysis of Composite Structural Insulated Panels (CSIPs) for Exterior Wall Applications", *Journal of Composites for Construction*, ASCE, 28(13):1587-1600

Synergistic Activities

- PI and leading an ongoing three-university four year NSF project to develop Natural Hazard Resistant Building Construction (NSF-CMMI-825938)
- PI and leading an ongoing three-country (USA, UK, and Ireland) four year NSF project (leveraged over \$1 million from UK and Ireland) towards developing Bridge Weigh-in-Motion (B-WIM) Health Monitoring Systems for Bridge Infrastructure Safety (NSF-CMMI-1100742)
- Example of Professional Society Activities: **Engineering Editor of ASCE Journal of Natural Hazards Review; Chair of ASCE Executive Committee for Council on Disaster Risk Management**; US team leader of natural hazards experts to visit China and overview of risk management and reconstruction activities following the Wenchuan earthquake; Organized and moderated a 2-day Symposium on Disaster Risk Management at ASCE 2005 National Conference, Los Angeles, CA following Hurricane Katrina, October 25-27, 2005; UAB Center for Disaster Preparedness (CDP), International Society for Computational Engineering & Sciences (ISCES)
- Served as PI to organize NSF Sponsored International Workshop on Wind Storm and Storm Surge Mitigation, and US Chair for the US-Bangladesh Collaborative Workshop to identify and prioritize emerging issues in the natural disaster mitigation; and Publication of a story on this activities by The World Bank on page 302 of Chapter 7: "Accelerating innovation and technology diffusion" in World Development Report 2010: Development and Climate Change.
- Author/co-author of over 150 publications in the areas of disaster risk analysis, advanced composites for disaster resistant construction, innovative materials and design, and edited three major conference proceedings; and **5 books: *Disaster Risk Assessment and Mitigation* (New York: ASCE, 2008), *Windstorm and Storm Surge Mitigation Construction* (New York: ASCE, 2010), *Blast Protection of Infrastructures and Vehicles using Composites* (London: Woodhead Publishing, 2010), *Quantitative Risk Assessment for Natural Hazards* (New York: ASCE, 2011), and *Developments in Fiber Reinforced Polymer (FRP) Composites for Civil Engineering* (London: Woodhead Publishing, in progress).**

Recent Research Grants (over \$6 million):

- National Science Foundation: Developing Bridge Weigh-in-Motion (B-WIM) Health Monitoring Systems for Bridge Infrastructure Safety (Internationally collaborative research project with matching funds from Ireland and UK national research agency)
- National Science Foundation: Structural Panels for Hazard Resistant Structure
- National Science Foundation: Multifunctional Composite for Panelized Construction
- National Science Foundation: International Workshop on Disaster Mitigation Construction
- National Science Foundation: Novel FRP/Concrete Sandwich Panel for Panelized Construction
- National Science Foundation: Research Experience for Undergraduates in Disaster Mitigation Construction
- US DOT: Impact and Feasibility Study of Solutions for Doubling Heavy Vehicles
- US DOT: Next-Generation Wireless Bridge Weigh-in-Motion (WIM) System Incorporated with Nondestructive Evaluation (NDE) Capability for Transportation Infrastructure Safety
- US DOT: Multifunctional Composite Materials for CMV and Infrastructure Applications.
- US DOT/UTCA: Use of Weigh-In-Motion (WIM) Data for Site-specific LRFR Bridge Rating
- US DOT/UTCA: Design of Low Cost Thermoplastic Bridge Superstructure
- NCC/USDOT/DC DOT: Anacostia River walk Trail Thermoplastic Composite Bridge Project
- US DOT/UTCA: Bridge Weigh-in-Motion (B-WIM) System Testing and Evaluation (Co-PI)
- Alabama DOT: VARTM Technology for Bridge Repair and Strengthening (Phase I, II, and III).

- Alabama DOT: Assessment of Long-time Behavior for Bridge Girders Retrofitted with Fiber Reinforced Polymer (FRP) Using Accelerated-time Concepts
- Alabama DOT: Demonstration of Cost-effective and durable FRP technology to repair/retrofit and to reduce vulnerability of the critical bridges
- Alabama DOT: Vulnerability Reduction for Bridge Structures.

Thesis Advisor and Post Doc Sponsor:

PD – Within Last 5 Years: Hua Zhao; Amol Vaidya; Leslaw Kwasniewski

PhD - Mohammed Mousa (PhD), Shah Newaz Shohel (Ph.D.), Amol Vaidya (PhD), Hua Zhao (PhD), Luis Ramos (PhD), Zhisong Zhao (PhD), Li Dong (PhD); Rahul Kalyankar (PhD), Marwan Mostafa (PhD), Adel A Elfayoumy (PhD)

MS - Chris Arias (MS), Hisham Merhebi (MS), Nitin Futin (MS), Amol Khotpuls (MS), John Purdue (MS), Abdul Mueed (MS), Kedar Sehler (PhD), Nadim Forhat (M.S.), Tim Maurer (M.S.), Avay Kumar (M.S.), Juan Serrano (MS); Rahul Kalyakurn (MS), Casey Brown (MS), Swapneel Kundu (MS), Tonga Nguyen (MS), Anand Patel (MS), Amber Greer (MS).