

Abdullah Mahmoud

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EDUCATION	2017	Ph.D. Civil Engineering Johns Hopkins University, Baltimore, Maryland, USA Thesis title: "Analysis and Design of Spirally Welded Thin-Walled Steel Tapered Cylindrical Shells Under Bending with Application to Wind Turbine Towers"
	2017	M.S.E. Civil Engineering Johns Hopkins University, Baltimore, Maryland, USA
	2013	M.S.E. Structural Engineering Cairo University, Giza, Egypt Thesis title: "Experimental and Analytical Studies on Failure Modes of Structure Steel Scaffolds"
	2008	B.Sc. Civil Engineering Cairo University, Giza, Egypt
PROFESSIONAL LICENSURE		Professional Engineer #52765 - Maryland
WORK EXPERIENCE	2018 to Present	Gandhi Engineers and Architects, Inc. (Consultant to New York State DOT) Bridges/Structural Engineer Providing analysis, design, and detailing of rehabilitation of existing bridges as well as designing new bridges and other structures according to NYSDOT guidelines.
	2013 to 2017	(Thin-Walled Structures Lab) Johns Hopkins University, Whiting School of Engineering Graduate Research Assistant-Ph.D. student <ul style="list-style-type: none">• Studying the stability of shelled structures in a project aiming to enable spiral welding technique to be used in fabrication and construction of tall slender wind turbine towers.• Studying the effect of imperfections' patterns and magnitudes on thin shells strength and stiffness.• Using numerical finite element models with material and geometric nonlinearities and imperfections (aka: GMNIA) in predicting strength of shells with verification against test results.• Conducting a parametric study and reliability analysis for GMNIA models and provided design recommendations to be adopted for modeling such structures.
	2011 to 2013	Applied Science International (ASI) - The Steel Network (TSN) USA-Egypt Structural Engineer Designing cold formed steel structures along with helping to develop a software for analysis and design of cold formed steel structures using Eurocode 3, ASCE 7-10, IBC 2012
	2009 to 2011	ACE Consulting Engineers (Moharram-Bakhoum) (ACE), Egypt Structural Engineer Providing analysis, design and detailed drawings for new heavy industrial structures (mostly army ammunition factories some was designed with blast proof features) and retrofit of existing structures.
	2008 to 2009	NSM Engineering Consulting Office (NSMECO) Structural Designer Providing structural analysis and design of commercial, industrial and residential buildings. Reviews the Structural drawings done by draftsman and ensure its accuracy and provides guidance where necessary. Co-ordinate with other departments during the various stages of the production cycle.

- PUBLICATIONS**
- Mahmoud, A., Abdelghaffar, M. E. (2013) *“Experimental and Analytical Study Failure Modes of Structural Steel Scaffolds”* SSRC proceedings, Saint Louis-MO, USA.
 - Mahmoud, A., Torabian, S., Jay, A., Myers, A. T., Smith, E., Schafer, B. W. (2015) *“Modeling protocols for elastic buckling and collapse analysis of spirally welded circular hollow thin-walled sections”* Proceedings of the Annual Stability conference, SSRC’15, Nashville-Tennessee, USA.
 - Jay, A., Torabian, S., Mahmoud, A., Myers, A. T., Schafer, B.W., Smith E. (2015) *“Static Flexural Local Buckling Tests on Large Scale Spirally Welded Tubes for use as Wind Turbine Towers”* Structures Congress 2015, Portland-Oregon, USA
 - Mahmoud, A., Torabian, S., Jay, A., Mirzaie, F., Myers, A. T., Smith, E., Schafer, B. W. (2016) *“Collapse Analyses on Spirally Welded Tapered Tubes using EC3 Generated Imperfections”* Proceedings of the Annual Stability conference, SSRC’16, Orlando-Florida, USA
 - Mahmoud, A. N., Mirzaie, F., Torabian, S., Jay, A., Myers, A. T., Smith, E., Schafer, B. W. (2016) *“Collapse Analysis of Spirally Welded Tapered Tubes under Flexural Moments using Measured and Generated Imperfections”* Proceedings of the 7th International Conference on Coupled Instabilities in Metal Structures. Baltimore-Maryland, USA.
 - Jay, A., Myers, A.T., Torabian, S., Mahmoud, A., Smith, E., Agbayani, N., Schafer, B.W. (2016) *“Spirally Welded Steel Wind Towers: Buckling Experiments, Analyses, and Research Needs”* J. Constructional Steel Research 125.
 - Jay, A., Myers, A.T., Mirzaie, F., Mahmoud, A., Torabian, S., Smith, E., Schafer, B.W. (2016) *“Large Scale Bending Tests of Slender, Tapered, Spirally Welded Steel Tubes”* J. Structural Engineering.
 - Mahmoud, A., Torabian, S., Jay, A., Mirzaie, F., Myers, A.T., Smith, E., Schafer, B. W. (2018) *“Modeling the Flexural Collapse of Thin-Walled Spirally Welded Tapered Tubes”*, J. Structural Engineering.
 - Mirzaie, F., Myers, A. T., Jay, A., Mahmoud, A., Torabian, S., Smith, E., Schafer, B. W. (2018) *“Imperfection Measurements to Predict Buckling Behavior of Slender Steel Tubes”* J. Thin-Walled Structures.
 - Mahmoud, A., Torabian, S., Jay, A., Mirzaie, F., Myers, A.T., Smith, E., Schafer, B. W. (2018) *“Predicting the Buckling Strength of Spirally Welded Tapered Tubes Under Flexural Bending Using Reference Resistance Design”* Proceedings of the Annual Stability conference, SSRC’18, Baltimore-Maryland, USA.

- PRESENTATIONS**
- **Modeling Protocols for Elastic Buckling and Collapse Analysis of Spirally Welded Circular Hollow Thin-Walled Sections.**
The Annual Stability Conference /NASCC 2015, Nashville-Tennessee, USA.
 - **Collapse Analyses on Spirally Welded Tapered Tubes using EC3 Generated Imperfections.**
The Annual Stability Conference /NASCC 2016, Orlando-Florida, USA
 - **Collapse Analysis of Spirally Welded Tapered Tubes under Flexural Moments using Measured and Generated Imperfections.**
The 7th International Conference on Coupled Instabilities in Metal Structures CIMS 2016, Baltimore-Maryland, USA.
 - **Predicting the Buckling Strength of Spirally Welded Tapered Tubes Under Flexural Bending Using Reference Resistance Design.**
The Annual Stability Conference /NASCC 2018, Baltimore-Maryland, USA.

TECHNICAL COMMITTEES

SSRC Task Group 2: Stability of Steel Members
Dedicated to the encouragement and dissemination of fundamental research on member stability and its impact on the design of structures. TG02 focuses on providing a forum for discussing these issues at its meetings and in the Annual Stability Conference, prepares state-of-the-art reports summarizing existing knowledge, procedures and practices in member stability, and in particular maintains sections of the *Guide to Stability Design Criteria for Metal Structures* related to member stability.

RESEARCH FUNDING

Enabling Advanced Wind Turbine Tower Manufacturing with Reliability-Based Design (2013-2017)
Major: US National Science Foundation Grants (CMMI-1334122 and CMMI-1334489)
Additional Support: Massachusetts Clean Energy Center and US Department of Energy

**TEACHING
EXPERIENCE**

Johns Hopkins University, Whiting School of Engineering

- EN.560.141.01 Perspectives on the Evolution of Structures (Spring 2014, Spring 2017) - Teaching Assistant
- EN.560.201.01 Statics and Mechanics of Materials (Fall 2016) - Teaching Assistant
- Cold Formed Steel Design – In preparation (Fall 2018) – Instructor (Online Class)
- Mentoring STEM Researchers in the Thin-Walled Structures Lab (2016-2017)

**STANDARDS
EXPERIENCE**

- **ASCE/SEI 7-16:** Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- **AISC/ANSI 360-16:** Specification for Structural Steel Buildings
- **ACI 318-14:** Building Code Requirements for Structural Concrete
- **ANSI/AWC NDS-2012:** National Design Specification for Wood Construction
- **AASHTO LRFD-7th edition-2014:** LRFD Bridge Design Specifications
- **BS EN 1993-1:** Eurocode 3: Design of Steel Structures
- **IBC 2015:** International Building Code
- **AWEA/ASCE RP2011:** The Recommended Practice for Compliance of Large Land-based Wind Turbine Support Structures, American Wind Energy Association
- **AISI S100-2016:** North American Specification for the Design of Cold-Formed Steel Structural Members
- New York State Department of Transportation Standard Specifications.

SKILLS

Technical

- Structure dynamics
- Light-gauge steel
- Tall buildings
- Shell stability and design
- Structural forensics
- Retrofit of Structures
- Finite Element Analysis
- Lab experience
- Non-destructive testing

Software

- SAP2000, ETABS 8
- AutoCAD 2D/3D
- Steel Smart System
- MS Office
- Visual Basic for MS office
- ABAQUS, ANSYS
- CUFSM
- Matlab

Personal

- Critical thinking
- Researchability
- Multi-tasking
- Interpretation and analysis
- Time management
- Negotiation Skills
- Communication Skills
- Attention to details
- Documentation
- Self-motivated

Language Proficiency

English: Fluent

Arabic: Native

French: Basic

**GRADUATE
COURSES**

- Structural Stability
- Finite Element Methods
- Bridge Design and Evaluation
- Investigation, Diagnosis and Rehabilitation
- Advanced Steel Design
- Structural Dynamics
- Special Topics in Steel Structures
- Selected Topics in Earthquake Engineering
- Analysis of Bridge Decks
- Prestressed Concrete
- Solid Mechanics for Structures
- Applied Mathematics for Engineers
- Probability and Statistics in Civil Engineering
- Risk and Decision Analysis
- Cold-Formed Steel Structures
- High Rise Steel Buildings

**ACTIVITIES
& HOBBIES**

- Hiking and Camping
- Volunteer at STEM Achievement in Baltimore Elementary Schools (SABES) 2014-2016
- Academic Coordinator, Civil Engineering Graduate Association ([CEGA-JHU](#)) 2014-2015
- Head of Life Makers Family in Cairo University 2004-2006
- Member of Cairo Chapter of International Association for Civil Engineering Students ([IACES](#))