

Curriculum Vitae

Hazem Madah

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Education:

- 2007 **B.Sc. in Civil Engineering**,
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology.
- 2011 **M.Sc. in Civil Engineering** - Structural Engineering (with thesis),
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology.
Research thesis title: "Strengthening of masonry walls subjected to dynamic
out-of-plane loads with composite materials: experimental study and a tailored
finite element"
Supervisor: Prof. Oded Rabinovitch
- 2014-present **Ph.D. in Civil Engineering - Structural Engineering**,
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology.
Research thesis title: "Optimal Design of Skeletal Structures with Geometric
Nonlinearity"
Supervisor: Assistant Prof. Oded Amir

Scholarships:

- 2007-2009 **Scholarship for M.Sc. Studies**,
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology
- 2014-present **Scholarship for Ph.D. Studies**,
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology

Awards and honors:

- 2012 **The "Tovia Netzer" prize for the best thesis in the field of structural
engineering.**
Faculty of civil and environmental engineering,
Technion – Israel Institute of Technology.

Professional experience:

- 2010-2014 **Structural engineer**, Yenon – Research & Design Ltd.,
4 Hayozma Street, P.O.B. 444, Tirat Carmel 30200, Israel.

Professional skills:

Design of reinforced concrete, prestressed concrete, and steel structures and
infrastructures.

Seismic design of structures and infrastructures.

Computational analysis of reinforced concrete, prestressed concrete and steel structures in Atir computational environment.

Infrastructures design including: RC retaining walls, acoustic walls, steel structures, box/pipe culverts, underpasses, pretension bridges, public structures (school and yacht club), tunnels – Cut and Cover (C&C), quantities calculations

Supervisions on performed projects, Development of designing algorithms.

Research skills:

Analytical modelling of static and dynamic structural systems.

Variational formulations for structural analysis.

Finite Element formulations based on Variational calculus.

Design, realization, and analysis of experimental setups.

Development of analytical and computational models in Maple and Matlab environments.

Development of geometric and material non-linear frame elements

Formulating structural optimization problems

Teaching experience:

2006 – 2007 Instructor in learning workshops for undergraduate students,
The unit of advancement of students,
Technion – Israel Institute of Technology.
Courses: Engineering Graphics.

2007 Teaching Assistant,
Faculty of Architecture and town planning,
Technion – Israel Institute of Technology.
Courses: Structural Design - Planar Components.

2007 – present Teaching Assistant,
Faculty of Civil and Environmental Engineering,
Technion – Israel Institute of Technology.
Courses:
Intro. to engineering mechanics, Strength of materials, Reinforced concrete structures 1, Reinforced concrete structures 2, Structural analysis, Computer methods in structural analysis, Finite elements, Engineering laboratory, Workshop on computational modelling, analysis and design of structures using Atir software package.

List of publications

Journal papers

1. Rabinovitch, O. and Madah, H. (2011) "Finite element modelling and shake-table testing of unidirectional infill masonry walls under out-of-plane dynamic loads", *Engineering Structures* **33**(9): 2683-2696
2. Rabinovitch, O. and Madah, H. (2012) "Dynamics of FRP Strengthened Unidirectional Masonry Walls – Part I: A Multi-layered Finite Element", *Journal of Mechanics of Materials and Structures*, **7**(1): 1-28
3. Rabinovitch, O. and Madah, H. (2012) "Dynamics of FRP Strengthened Unidirectional Masonry Walls – Part II: Experiments and Comparison", *Journal of Mechanics of Materials and Structures*, **7**(1): 29-44
4. Madah, H. and Amir, O. (-) "Accounting for buckling in truss optimization using geometrically nonlinear beam modelling ", In review.

International conferences - Proceedings:

Rabinovitch, O., Madah, H. and Hamed, E. (2009), "Modelling Issues in the Dynamic Finite Element Analysis of Masonry Walls Strengthened with Composite Materials". *Proceedings of the 9th International Symposium on Fiber Reinforced Polymer (FRP) Reinforcement for Concrete Structure (FRRCS 9)*. Oehlers, D., Griffith, M. and Seracino, R. (Eds.), Sydney, NSW, Australia. July 13–15, 2009.

International conferences – Oral presentation:

Madah, H. and Amir, O. "Optimal design of skeletal structures with buckling considerations using nonlinear beam modelling". The VII European Congress on Computational Methods in Applied Sciences and Engineering - ECCOMAS 2016, Crete, Greece. June 5 - 10, 2016.