Arash Akbari Hamed

Date: 2024-07-30

Contact Information

Associate Professor
Faculty of Civil Engineering
Sahand University of Technology
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Research

I am currently an associate professor in the Faculty of Civil Engineering at Sahand University of Technology and a professional member of Iranian Society of Steel Structures (ISSS). My primary academic interests span *Analysis and Design of Steel Structures*, *Rehabilitation (Retrofitting) of Steel Structures*, *Passive Structural Vibration Control*, and *Experimental Studies on Seismic Behavior of Steel Structures*. My *long-term goal* is to introduce and establish a firm foundation that will transform state-of-the art methods for the design and construction of steel structures. My research has a clear path from theory to experiments to advance two *specific objectives*: (1) Introducing new innovative and economical structural systems; and (2) Transferring the numerically assessed systems into practice with experimental studies in laboratory settings.

Education

Jan 2011 – May 2015: Ph.D., Civil Engineering- Structural Engineering
Sharif University of Technology
Tehran, Iran
GPA: 17.65/20
Ph.D. Thesis Grade: Excellent

Sep 2008 – Sep 2010: M.Sc., Civil Engineering- Structural Engineering
University of Tabriz
Tabriz, Iran
GPA: 19.63/20
M.Sc. Thesis Grade: Excellent

Sep 2004 – Aug 2008: B.Sc., Civil Engineering- Structural Engineering
University of Tabriz
Tabriz, Iran
GPA: 17.56/20

Professional Experience

Nov 2022–present: Associate Professor
Sahand University of Technology
Faculty of Civil Engineering
Tabriz
Iran

May 2015–Nov 2022: Assistant Professor
Sahand University of Technology
Faculty of Civil Engineering
Tabriz

	Iran
Jan 2013-May 2015:	Lecturer Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Dec 2018-Sep 2023:	Head of Strong Floor Laboratory Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Sep 2018- present:	Vice-President of Faculty of Civil Engineering Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Nov 2023- present:	Member of council for the development of information technology, security and intelligence of the university Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Feb 2019- Sep 2023:	Representative of the supply of faculty equipment Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Apr 2020- Apr 2021:	Representative of the university in the supervision working group of the technical council of the province Planning and Budget Organization of Iran Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Sep 2018- Sep 2020:	Representative of the Faculty of Civil Engineering in the Faculty of Electronic and Open Education Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Aug 2016- Aug 2018:	Advisor of Postgraduate Programs Sahand University of Technology Faculty of Civil Engineering Tabriz Iran
Jan 2011–May 2015:	Graduate Student Teaching Assistant (TA) Sharif University of Technology

Department of Civil Engineering
Tehran
Iran

Academic Honors and Awards

- Ranked 2nd according to GPA among B.Sc. students of Structural Engineering, University of Tabriz, 2008.
- Ranked 1st according to GPA among M.Sc. students of Structural Engineering, University of Tabriz, 2010.
- Identified as an exceptional talent at University of Tabriz, 2010.
- Admitted to the M.Sc. program at the University of Tabriz based on academic regulations for exceptional talents, 2008.
- Admitted to the Ph.D. program at Sharif University of Technology based on academic regulations for exceptional talents, 2011.
- Distinguished Researcher in the Faculty of Civil Engineering at Sahand University of Technology, 2023.
- Selection of the dissertation of my first supervised PhD student as the top steel thesis in the PhD category for the year 1402 (2023) in Iran at the 12th National Conference on Structures and Steel

Publications

Books

- **Akbari Hamed, A**, Sadeghi, AMJ, Charkhtab Basim, M, Emami Tabrizi, M. *Analytical Report of Sarpoleh Zahab Earthquake in Kermanshah Province (at 21:48 on 12 Nov. 2017)*, Sahand University of Technology Press, ISBN: 978-964-6219-91-5, 136 pages, Tabriz, Iran, 2018 (In Persian).

Peer-reviewed Journal Papers

- Jalali, A. and **Akbari Hamed, A.** (2013). “Study of precision for structural responses of buildings using advanced scalar intensity measures.” Journal of Civil and Environmental Engineering (University of Tabriz) 43(3): 59-67 (In Persian).
- **Akbari Hamed, A.** and Mofid, M. (2015). "On the experimental and numerical study of braced steel shear panels." The Structural Design of Tall and Special Buildings 24(14): 853-872.
- **Akbari Hamed, A.** and Mofid, M. (2015). "On the plastic analysis of concentrically braced frames with shear panel, obtaining predetermined collapse mechanism." The Structural Design of Tall and Special Buildings 24(5): 366-395.
- **Hamed, A. A.** and Mofid, M. (2015). "On the equivalent simple models of braced steel shear panels." Proceedings of the Institution of Civil Engineers-Structures and Buildings 168(8): 570-577.

- **Hamed, A. A.** and Mofid, M. (2016). "Parametric study and computation of seismic performance factors of braced shear panels." Scientia Iranica 23(2): 460-474.

- **Hamed, A. A.** and Mofid, M. (2017). "Plastic design of eccentrically braced frames with shear panels." Proceedings of the Institution of Civil Engineers-Structures and Buildings 170(1): 17-32.

- Rezaei, S., **Hamed, A.A.** and Basim, M.C., (2020). "Seismic performance evaluation of steel structures equipped with dissipative columns." Journal of Building Engineering, 29, p.101227.

- **Hamed, A.A.** and Basim, M.C., (2020), December. "Experimental-numerical study on weakened HSS-to-HSS connections using HBS and RBS approaches." Structures (Vol. 28, pp. 1449-1465). Elsevier.

- **Akbari Hamed, A.** and Bafandeh Nobari, H. (2021). "Numerical Investigation on Seismic Behavior of Novel Moment Connections with Heat-Treated Beam Sections." Journal of Civil and Environmental Engineering (University of Tabriz), Vol. 51, Issue 1 (Spring), 1-13 (In Persian).

- **Hamed, A.A.**, Asl, R.B. and Rahimzadeh, H., (2021). "Experimental and numerical study on the structural performance of auxetic-shaped, ring-shaped and unstiffened steel plate shear walls." Journal of Building Engineering, 34, p.101939.

- Basim, M.C., Pourreza, F., Mousazadeh, M. and **Hamed, A.A.**, (2022), February. The effects of modeling uncertainties on the residual drift of steel structures under mainshock-aftershock sequences. Structures (Vol. 36, pp. 912-926). Elsevier.

- Saeidzadeh, M., Chenaghlou, M.R. and **Hamed, A.A.**, (2022). Experimental and numerical study on the performance of a novel self-centering beam-column connection equipped with friction dampers. Journal of Building Engineering, p.104338.

- **Akbari Hamed, A.**, Samadi, A. and Basim, M.C. (2022) "Topology and shape optimization of steel plate shear walls for enhancement the amount of absorbed energy" Journal of Building Engineering, p.104828.

- Saeidzadeh, M., Chenaghlou, M.R. and **Hamed, A.A.**, (2022). "Evaluation of the structural behavior of a novel self-centering beam-column connection with friction damper in comparison to existing connections." Journal of Civil and Environmental Engineering (In Persian)- DOI: 10.22034/JCEE.2022.52238.2162.

- **Akbari Hamed, A.**, Mortazavi, S.F. and Saeidzadeh, M. (2023) "Evaluation of the seismic performance of structures equipped with novel multi-level TADAS dampers" Asian Journal of Civil Engineering, 24, pp. 969-988.

- Amiri, V., **Akbari Hamed, A.** and Abedi K. (2023) "On braced trapezoidal corrugated steel shear panels: An experimental and numerical study"

Frontiers of Structural and Civil Engineering, DOI: 10.1007/s11709-023-0934-5.

- **Akbari Hamed, A.** and Hashemi, S.S. (2023) "Parametric study on the structural performance of ordinary, bamboo-shaped and triple-truss confined all-steel BRBs with circular core cross-section" Asian Journal of Civil Engineering, http://dx.doi.org/10.1007/s42107-023-00569-6.

- Amiri, V., **Akbari Hamed, A.** and Abedi, K., (2023). "Investigation into the effect of residual stresses on the performance of corrugated trapezoidal steel shear panels" Journal of Civil and Environmental Engineering (In Persian)- (Accepted- In Press), https://dx.doi.org/10.22034/ceej.2023.53385.2181.

- Saeidzadeh, M., Chenaghlou, M.R. and **Hamed, A.A.**, (2023). "Mechanical model and seismic performance of frames with a self-centring connection." Proceedings of the Institution of Civil Engineers-Structures and Buildings (Accepted- Available online, In Press), DOI: https://doi.org/10.1680/jstbu.22.00233.

- **Akbari Hamed, A.**, Saeidzadeh, M. and Chenaghlou, M.R., 2023. Comparison of Two Novel Heat-Treated Beam Section and Self-Centering Pinned Connection with Friction Damper Steel Beam–Column Connections. Engineering Proceedings, 53(1), p.15195.

- **Akbari Hamed, A.**, Saeidzadeh, M., Hassani Ghoraba, H.R. and Ostadhasanzadeh Maleky, F., 2023. Novel Scrap Tire Rubber Pad with Steel Rods and Maglev Seismic Isolators. Engineering Proceedings, 53(1), p.10.

- Ostadhasanzadeh Maleky, F., **Akbari Hamed, A.** and Saeidzadeh, M., 2023. On the Performance of Steel Buildings with Skewed Beams against Progressive Collapse. Engineering Proceedings, 53(1), p.11.

- **Akbari Hamed, A.**, Saeidzadeh, M., Bafandeh Nobari, H. and Ostadhasanzadeh Maleky, F., 2024. Sustainable and Economic Base Isolators Made by Scrap Tires for Low-rise Buildings in Developing Countries. Iranian Journal of Science and Technology, Transactions of Civil Engineering, pp.1-18.

- Bafandeh Nobari, H., **Akbari Hamed, A.** and Saeidzadeh, M. 2024. Experimental Study on the Cyclic Performance of Novel Seismic Base Isolators Made by Scrap Tire Rubber Pads. Iranian Journal of Science and Technology, Transactions of Civil Engineering. https://doi-org.access.semantak.com/10.1007/s40996-024-01420-x

- **Akbari Hamed, A.**, Dezhban, S. and Saeidzadeh, M., 2024. Reducing the Flexural Stiffness Requirement for Boundary Elements in Steel Plate Shear Walls Using the Topology Optimization Method. Iranian Journal of Science and Technology, Transactions of Civil Engineering, pp.1-18.

- Hassani Ghoraba, H.R., **Akbari Hamed, A.**, Mahboobi Esfanjani, R. and Saeidzadeh, M. (2024). "Numerical and experimental investigation on a novel seismic base-isolator made by the magnetic levitation technology"

The Structural Design of Tall and Special Buildings- (Revision is Under Review).

Peer-reviewed Conference Papers

- Jalali, A. and **Akbari Hamed, A.** (2011). "Investigation of vector-valued and advanced scalar intensity measures for estimation of structural responses under near fault ground motions." Proceedings of the 1st International Conference on Urban Construction in the Vicinity of Active Faults, Tabriz, Iran.

- **Akbari Hamed, A.** (2016). "Analysis and Plastic Design of Braced Steel Shear Panels for Achievement of Predetermined Collapse Mechanism" Proceedings of the 2nd International Conference on New Research Achievements in Civil Engineering, Architecture and Urban Management, Tehran, Iran (In Persian).

- **Akbari Hamed, A.** (2016). "Modeling, Experimental and Parametric Study and Determination of the Seismic Performance Factors of Braced Steel Shear Panels" Proceedings of the 2nd International Conference on New Research Achievements in Civil Engineering, Architecture and Urban Management, Tehran, Iran (In Persian).

- **Akbari Hamed, A.** and Charkhtab Basim, M. (2016). "Comparative study on seismic behavior of hybrid and simple all-steel buckling restrained braces." Proceedings of the 1st National Conference on Applied Research in Structural Engineering and Construction Management, Tehran, Iran (In Persian).

- Nobari, H.B. and **Hamed, A.A.**, 2017. 03.25: on the seismic behavior of the HBS and RBS moment connections. ce/papers, 1(2-3), pp.702-710.

- Chenaghlou, M.R. and **Hamed, A.A.**, 2017. 03.30: Connection classification for a space structure jointing system. ce/papers, 1(2-3), pp.746-755.

- Bafandeh Nobari, H. and **Akbari Hamed, A.** (2017). "Comparative study on the cyclic behavior of the RBS and HBS I-shaped beam sections." Proceedings of the 3rd International Conference on Structural Engineering, Tehran, Iran (In Persian).

- Charkhtab Basim, M. and **Akbari Hamed, A.** (2017). "Probabilistic assessment of life-cycle costs of structures using endurance-time method." Proceedings of the 10th National Congress on Civil Engineering, Tehran, Iran (In Persian).

- Barzgar Asl, R., **Akbari Hamed, A.** and Rahimzadeh, H. (2018). "Numerical study on Auxetic (Hexagonal Re-entrant) steel plate shear walls." Proceedings of the 11th International Congress on Civil Engineering, Tehran, Iran (In Persian).

- Rezaei, S., **Akbari Hamed, A.** and Charkhtab Basim, M. (2018). "Seismic performance evaluation of energy dissipative columns as new steel dampers." Proceedings of the 9th National and 3rd International Conference on Steel and Structure, Tehran, Iran (In Persian).

- Amiri, V., Abedi, K. and **Akbari Hamed, A.** (2019). "Numerical investigation into the behavior of corrugated steel plate shear walls retrofitted by CFRP Layers, considering the de-bonding between steel and CFRP." Proceedings of the 11th National Congress on Civil Engineering, Shiraz, Iran (In Persian).

- Amiri, V., **Akbari Hamed, A.** and Abedi, K. (2020). "Numerical investigation of the behavior of concentrically braced trapezoidal corrugated steel shear panels." Proceedings of the 12th National Congress on Civil Engineering, Tabriz, Iran (In Persian).

- Ghordoui, A., **Akbari Hamed, A.** and Basim, M.C. (2020) "Comparison of seismic performance and cost of different bracing systems." Proceedings of the 12th National Congress on Civil Engineering, Tabriz, Iran (In Persian).

- **Akbari Hamed, A.**, Saeidzadeh, M. and Bafandeh Nobari, H. (2024) "Economic and Sustainable Seismic Base Isolators: Experimental and Numerical Study" Proceedings of the 9th International Conference on Seismology and Earthquake Engineering, Tehran, Iran (In Persian).

- Alami, S., **Akbari Hamed, A.** and Poursha, M. (2024) "Multi-level lever braced system (MLBS) with hybrid steel curved damper" Proceedings of the 14th National Congress on Civil Engineering, Zanjan, Iran (In Persian).

Patents

- Saeidzadeh, M., Chenaghlou, M.R. and **Hamed, A.A.**, (2022). "Self-centering pinned beam-column connection with friction damper", Patent No. IR 108327. https://ipm.ssaa.ir/Search-Result?page=1&DecNo=14005014000300960 7&RN=108327

Theses

- **Akbari Hamed, A**, *Design, Modeling and Investigation of Seismic Behavior of Bracing Type Steel Shear Panels*, Ph.D. dissertation, Sharif University of Technology, May 2015.

- **Akbari Hamed, A**, *Appropriate Ground Motion Selection for Near-Fault Structures*, M.Sc. thesis, University of Tabriz, Sep 2010.

Teaching Experience

- Statics (UG/ Module Leader)
- Engineering Mechanics of Solids (UG/ Module Leader)
- Mechanics of Materials Laboratory (UG/ Module Developer and Leader)
- Computer Application in Civil Engineering (UG/ Module Leader)
- Structural Analysis (UG/ Co-Teaching)
- Design of Steel Structures (UG/ Module Leader)
- Steel Structures Project (UG/ Module Leader)

	• Technical (Engineering) and Structural Drawing (UG/ Module Leader) • Technical English Language (UG/ Co-Teaching) • Advanced Steel Structures (PG/ Module Developer and Leader) • Rehabilitation (Retrofitting) of Steel Structures (PG/ Co-Teaching) • Seismic Design of Steel Structures (PG/ Co-Teaching) • Theory of Structural Stability (PG/ Co-Teaching) • Special Topics on Design of Steel Plate Shear Walls (PG/ Co-Teaching and Co-Module Developing) • Special Topics on the Connections of Steel Structures (PG/ Co-Teaching and Co-Module Developing)
Membership/Qualification	• Professional Membership of Iranian Society of Steel Structures (ISSS) • Qualification for "Teaching methods and skills", Sahand University of Technology. (2016 & 2017)
Attended Workshops & Certificates	• Management of scientific data and electronic resources • Enhancing the knowledge of professors with the subject of practical and professional ethics
Scientific Chair	• The Scientific Chair of the Topic of Steel Structures at the 12th National Congress on Civil Engineering (2020)
Journal Reviewer	• Journal of Building Engineering • Structures • The Structural Design of Tall and Special Buildings • Steel and Composite Structures • International Journal of Structural Stability and Dynamics • Advances in Structural Engineering • ICE Proceedings- Structures and Buildings • Structural Engineering & Mechanics

- Iranian Journal of Science and Technology - Transactions of Civil Engineering
- International Journal of Steel Structures
- Archives of Civil and Mechanical Engineering
- Nature Communications
- Innovative Infrastructure Solutions
- Journal of Civil and Environmental Engineering
- Sharif Journal of Civil Engineering
- Modarres Journal of Civil Engineering
- Ferdowsi Civil Engineering
- Materials
- Applied Sciences
- Buildings
- Journal of Structure and Steel

Conference Reviewer

- National and International Congress on Civil Engineering (Iran)
- National and International Conference on Steel and Structure (Iran)

Google Scholar Citations: 216 h-index: 10 i10-index: 11
https://scholar.google.com/citations?user=JHG9gVwAAAAJ&hl=en

ResearchGate Citations: 214 h-index: 10
https://www.researchgate.net/profile/Arash-Akbari-Hamed

ORCID https://orcid.org/0000-0003-0633-4805

Linkedin https://www.linkedin.com/in/arash-akbari-hamed-41a739217/?originalSubdomain=ir

Scopus https://www.scopus.com/authid/detail.uri?authorId=56215137900

Web of Science https://www.webofscience.com/wos/author/rid/AFM-5347-2022

ORCID iD 0000-0003-0633-4805

Supervised Students

- Topology and shape optimization of steel plate shear walls for enhancement the amount of absorbed energy
  Ayda Samadi (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**

- Comparison of seismic performance of various types of bracing systems by examining fragility curves and cost estimation
  Ali Ghordoui Milan (MSc)
  Supervisors: **Dr. Arash Akbari Hamed**- Dr. Mohammad Charkhtab Basim

- Numerical and experimental evaluation of different stress-strain curve relationships for steel materials
  Faezeh Nasiri Hamed (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisor: Dr. Mahsa Saeidzadeh

- Determination of seismic performance factors and the maximum allowable height of modular buildings
  Hamed Hooshmand (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisor: Dr. Mahsa Saeidzadeh

- Experimental and Numerical Study on the Structural Performance of Adhesive Bonded Connections in Steel Structures
  Mousa Arvanaghi (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisors: Prof. Hossein Roghani Mamaqani- Eng. Hesam Bafandeh Nobari

- Investigation of the progressive collapse behavior of the buildings with skewed beams
  Farid Ostadhasanzadeh Maleky (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisor: Dr. Mahsa Saeidzadeh

- Parametric study for evaluation of seismic behavior of novel TADAS dampers with multilevel performance in minor to severe earthquakes
  Seyedeh Fatemeh Mortazavi (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**

- Comparative experimental and numerical studies on out-of-plane buckling in auxetic and ring-shaped steel plate shear walls and determination of the seismic performance factors
  Hamed Rahimzadeh (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**

- Numerical and experimental investigation on a novel seismic base isolator using the magnetic levitation technology
  Hamid Reza Hassani Ghoraba (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisor: Prof. Reza Mahboobi Esfanjani

- A comparative study on seismic behavior of moment resisting frames with reduced or heat-treated beam sections
  Hesam Bafandeh Nobari (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**

- Experimental and numerical study on structural performance and economic cost of auxetic steel plate shear walls in comparison with unstiffened steel plate shear walls
  Ramin Barzegar Asl
  Supervisor: **Dr. Arash Akbari Hamed**

- A comparative numerical study on all-steel BRBs with solid circular, bamboo-shaped and triple-truss-confined configurations
  Seyedeh Sahar Hashemi (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**

- Optimization of unstiffened steel plate shear walls for reduction of induced forces to the boundary elements
  Somayyeh Dezhban (MSc)
  Supervisor: **Dr. Arash Akbari Hamed**
  Advisor: Dr. Mahsa Saeidzadeh

- Parametric study on seismic performance evaluation of the dissipative columns as a new steel damper
  Somayeh Rezaei (MSc)
  Supervisors: **Dr. Arash Akbari Hamed**- Dr. Mohammad Charkhtab Basim

- Investigation of the effect of connection modeling on the structural responses of steel plate shear walls
  Zana Zareii (MSc)
  Supervisors: **Dr. Arash Akbari Hamed**- Prof. Karim Abedi

- Comparing the behavior of all-steel buckling-restrained braces with different cross-sections and evaluating their seismic performance factors
  Ziba Khademi (MSc)
  Supervisor: Prof. Massood Mofid
  Advisor: **Dr. Arash Akbari Hamed**

- Improvement of damping in steel beam-to-column connections using gray cast iron
  Mehdi Fathalizadeh (MSc)
  Supervisors: Prof. Mohammad Reza Chenaghlou- **Dr. Arash Akbari Hamed**

- Investigation of the performance of a novel self-centering beam-column connection equipped with dampers and development of a mechanical model
  Mahsa Saeidzadeh (PhD)
  Supervisors: Prof. Mohammad Reza Chenaghlou- **Dr. Arash Akbari Hamed**

- Experimental and numerical investigation on enhanced toggle braced system with steel curved damper
  Sina Alami (PhD)

Supervisors: Dr. Mehdi Poursha- **Dr. Arash Akbari Hamed**

- Experimental and numerical investigation into the behavior of corrugated steel plate shear panels with concentrically braced frames
  Vahid Amiri (PhD)
  Supervisors: **Dr. Arash Akbari Hamed**- Prof. Karim Abedi

- Numerical and experimental investigation on enhanced A-braced frames equipped with yielding curved dampers providing dominant tensile performance
  Sina Alami (PhD)
  Supervisors: Dr. Mehdi Poursha- **Dr. Arash Akbari Hamed**

Research Grants

- Experimental study on the cyclic behavior of heat-treated beams with hollow section
  2018-2019
  Sahand University of Technology- Grant No. 30.22309

- An approximate method for seismic evaluation of steel frames under mainshock–aftershock sequences
  2019-2020
  Sahand University of Technology- Grant No. 30.22481

- Sustainable and economic base isolators made by scrap tires for low-rise buildings in developing countries
  2023-2024
  Iranian National Science Foundation (INSF)- Grant No. 4021667

Professional Skills

- Analysis and Design of Steel Structures
- Rehabilitation (Retrofitting) of Steel Structures
- Passive Structural Vibration Control
- Experimental Studies on Seismic Behavior of Steel Structures
- Structural and Seismic Performance of Novel Sustainable and Economic Structural Systems

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Computer Skills

ABAQUS, ETABS, SAP2000, SAFE, Nonlin, SeismoSignal, AutoCAD, Microsoft Office, MATLAB.