

## Sigong Zhang, Ph.D.

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CONTACT INFORMATION	Room 2.05 Drummond Building, University Newcastle upon Tyne, UK NE1 7RU sigong.zhang@newcastle.ac.uk	
CURRENT ACADEMIC APPOINTMENTS	<b>Lecturer in Structural Engineering</b> , Newcastle University Geotechnical and Structural Engineering (GEST) School of Engineering	September 2022 to present
PREVIOUS ACADEMIC APPOINTMENTS	<b>Marie Curie Research Fellow</b> , University of Exeter, UK	October 2020 to September 2022
	<b>Postdoctoral Fellow</b> , University of Alberta, Canada	January 2018 to April 2020
	<b>Postdoctoral Fellow</b> , University of Waterloo, Canada	March 2017 to October 2017
EDUCATION	<b>PhD in Civil Engineering</b> <b>University of Waterloo</b> • Thesis: <b>Vibration Serviceability of Cold-Formed Steel Floor Systems</b>	January 2017 <i>Waterloo, ON, Canada</i>
	<b>MSc in Structural Engineering</b> <b>Beijing Jiaotong University</b> • Thesis: Numerical Analysis of Composite Floor Vibration due to Human Walking (in Chinese)	January 2012 <i>Beijing, China</i>
	<b>BEng in Civil Engineering</b> <b>Northwestern Polytechnical University</b>	July 2009 <i>Xi'an, China</i>
AWARDS	<b>L. J. Markwardt Wood Engineering Award</b> Forest Products Society, United States	2021
	<b>Marie Skłodowska-Curie Individual Fellowship</b> European Commission	2020
	<b>Mitacs Globalink Research Award</b> Mitacs, Canada	2020
	<b>Mitacs Accelerate Postdoctoral Fellowship</b> Mitacs, Canada	2018
GRANTS	<p>[1] PI, “Unlocking physical and mechanical properties of Japanese knotweed for bio-composite applications”, <b>IStructE Undergraduate Research Grant 2024/25</b>, £800, February 2025 to May 2025.</p> <p>[2] Co-PI, “Developing advanced vibration performance assessment for new generation of lightweight pedestrian structures using motion platform and virtual reality environments”, <b>Marie Skłodowska-Curie Individual Fellowship</b>, ID: 898216, €224,933, October 2020 to October 2022. Co-PI: Stana Zivanovic, University of Exeter, UK</p> <p>[3] Co-PI, “Structural analysis of innovative mass timber penal-steel composite floors and its application”, <b>Mitacs Globalink</b>, IT16921, CAD\$ 6,000, June 2020 to August 2020 (Cancelled due to COVID-19 pandemic). Co-PI: Takuro Mori, Hiroshima University, Japan</p>	

- [4] Investigator, “Development of rigging system for prefabricated engineered wood floor panels”, **NSERC Engage Grants**, EGP 518307-17, CAD\$ 25,000, March 2018 to August 2018. PI: Ying Hei Chui
- [5] Investigator, “Investigation of wood I-joists for floor applications in mid-rise wood construction”, **Mitacs Accelerate**, FR24772, CAD\$ 16,500, January 2018 to July 2018. PI: Ying Hei Chui
- (\* Corresponding author)
- [1] **Zhang, S.\*** and Chui, Y.H., 2024. Quantifying the effect of end support restraints on vibration serviceability of mass timber floor systems: Testing. *Engineering Structures*, 301, 117189. doi:10.1016/j.engstruct.2023.117189
- [2] Lin, B., **Zhang, S.**, Živanović, S., Zhang, Q., and Fan, F. 2023. Verification of damped bipedal inverted pendulum model against kinematic and kinetic data of human walking on rigid-level ground. *Mechanical Systems and Signal Processing*, 200, 110561. doi:10.1016/j.ymssp.2023.110561
- [3] Lin, B., Živanović, S., **Zhang, S.**, Zhang, Q., and Fan, F. 2023. Evaluation of compliant walking locomotion models for civil engineering applications. *Journal of Sound and Vibration*, 561, 117815. doi:10.1016/j.jsv.2023.117815
- [4] Zhang, Y., Zhang, L. and **Zhang, S.\*** 2022. Exact series solutions of composite beams with rotationally restrained boundary conditions: static analysis. *Archive of Applied Mechanics*. 92, 3999-4015. doi:10.1007/s00419-022-02277-0
- [5] Živanović, S., Lin, B., Dang, H. V., **Zhang, S.**, Ćosić, M., Caprani, C., and Zhang, Q. (2022). Evaluation of inverted-pendulum-with-rigid-legs walking locomotion models for civil engineering applications. *Buildings*, 12(8), 1216. doi:10.3390/buildings12081216
- [6] Zhang, L., Zhou, J., **Zhang, S.** and Chui, Y. H. 2022. Bending stiffness prediction to mass timber panel-concrete composite floors with notched connections. *Engineering Structures*. 262, 114354. doi:10.1016/j.engstruct.2022.114354
- [7] **Zhang, S.\*** and Xu, L. 2022. Vibration serviceability evaluation of lightweight cold-formed steel floor systems. *Structures*, 38, 1368-1379. doi:10.1016/j.istruc.2022.02.009
- [8] Daneshvar, H., Goni, T., **Zhang, S.**, Kelterborn, R. and Chui, Y. H., 2021. Structural timber design in curricula of Canadian universities: Current status and future needs. *Education Sciences*, 11(12): 765. doi:10.3390/educsci11120765
- [9] **Zhang, S.**, Zhou, J. and Chui, Y. H. 2021. Simultaneous evaluation of bending and shear stiffness of wood I-joists by transverse vibration Tests. *Engineering Structures*, 243, 112643. doi:10.1016/j.engstruct.2021.112643
- [10] Zhang, L., **Zhang, S.** and Chui, Y. H. 2021. Analytical evaluation to the timber-concrete composite beam connected with notched connections. *Engineering Structures*, 227, 111466. doi:10.1016/j.engstruct.2020.111466
- [11] **Zhang, S.\***, Daneshvar, H. and Chui, Y. H. 2021. Comparison of lateral load performance of light wood diaphragms built with sawn lumber and wood I-joists. *ASCE Journal of Materials in Civil Engineering*, 33(1), 04020422. doi:10.1061/(ASCE)MT.1943-5533.0003544
- [12] **Zhang, S.\***, Chui, Y. H. and Joo, D. 2020. Lateral load performance of panelized wood I-joist floor systems. *Forest Products Journal*, 70(4), 428-438. doi:10.13073/FPJ-D-20-00029

- [13] **Zhang, S.\*** and Chui, Y. H. 2020. Characterizing flexural behaviour of panel-to-panel connections in cross-laminated timber floor systems. *Structures*, 28, 2047-2055. doi:10.1016/j.istruc.2020.10.040
- [14] **Zhang, S.\*** and Xu, L. 2020. Human-induced vibration of cold-formed steel floor systems: Parametric studies. *Advances in Structural Engineering*, 23(10), 2030–2043. doi:10.1177/1369433220904013
- [15] **Zhang, S.\***, Zhou, J., Niederwestberg, J. and Chui, Y. H. 2019. Effect of end support restraints on vibration performance of cross laminated timber floors: An analytical approach. *Engineering Structures*, 189, 186-194. doi:10.1016/j.engstruct.2019.03.042
- [16] Zhang, Y. and **Zhang, S.\***. 2019. On the application of modified finite sine transform to structural mechanics. *Mathematical Problems in Engineering*, 6363409. doi:10.1155/2019/6363409
- [17] **Zhang, S.**, Xu, L. and Li, R. 2019. New exact series solutions for transverse vibration of rotationally-restrained orthotropic plates. *Applied Mathematical Modelling*, 65, 348-360. doi:10.1016/j.apm.2018.08.033
- [18] **Zhang, S.**, and Xu, L. 2018. Determination of orthotropic rigidities of cold-formed steel floor systems in vibration analysis, part I: Theory. *Thin-Walled Structures*, 132, 25-35. doi:10.1016/j.tws.2018.08.001
- [19] Xu, L., **Zhang, S.** and Yu, C. 2018. Determination of orthotropic rigidities of cold-formed steel floor systems in vibration analysis, part II: Evaluation of the fundamental frequency. *Thin-Walled Structures*, 132, 1-15. doi:10.1016/j.tws.2018.08.002
- [20] **Zhang, S.** and Xu, L., 2018. Exact static analysis of eccentrically stiffened plates with partial composite action. *Composite Structures*, 198, 117-125. doi:10.1016/j.compstruct.2018.05.049
- [21] **Zhang, S.** and Xu, L., 2018. Analytical solutions for flexure of rectangular orthotropic plates with opposite rotationally restrained and free edges. *Archives of Civil and Mechanical Engineering*, 18(3), 965-972. doi:10.1016/j.acme.2018.02.005
- [22] **Zhang, S.**, Xu, L. and Qin, J., 2017. Vibration of lightweight steel floor systems with occupants: Modelling, formulation and dynamic properties. *Engineering Structures*, 147, 652-665. doi:10.1016/j.engstruct.2017.06.008
- [23] **Zhang, S.** and Xu, L., 2017. Bending of rectangular orthotropic thin plates with elastically restrained edges: A finite integral transform solution. *Applied Mathematical Modelling*, 46, 48-62. doi:10.1016/j.apm.2017.01.053
- [24] **Zhang, S.** and Yang, N., 2013. Comparison of the numerical stimulation methods of floor vibration due to single people walking. *Journal of Beijing Jiaotong University*, 37(1), 152-161. (In Chinese)

CONFERENCE  
PUBLICATIONS &  
PRESENTATION

- [1] **Zhang, S.**, Lin, B., Williams, G., and Živanović, S. 2023. Experimental insight into human footfall loading for walking on vibrating surfaces. Proceedings of XII International Conference on Structural Dynamics (EURODYN2023), Delft, the Netherlands.
- [2] Zheng, L., **Zhang, S.**, Gong, M. and Chui, Y. H. 2023. Evaluation of the Structural Performance of Shear Walls Built with Multi-layer Composite Laminated Panels. Proceedings of World Conference on Timber Engineering 2023 (WCTE2023), Oslo, Norway. doi:10.52202/069179-0332

- [3] **Zhang, S.**, Živanović, S., and Williams, G. 2023. vPERFORM: the development of foot-fall loading models for human walking on vibrating surfaces. Proceedings of IMAC-XLI, Austin, Texas.
- [4] Zhang, L., **Zhang, S.**, Zhou, J. and Chui, Y. H. 2021. Analytical Assessment to the timber-concrete composite floors with discrete semi-rigid connections. 2021 World Conference on Timber Engineering (WCTE2021), August 9-12, Santiago, Chile.
- [5] **Zhang, S.\*** 2020. Three generations of Canadian design guidelines for vibration serviceability of timber floors. The 3rd International Conference on Engineering Innovation and Seismic Mitigation of Bridges (ICEISMB 2020), November 21-22, Online, China.
- [6] **Zhang, S.\***, Chui, Y. H., Joo, D., Letarte, JP., and Dalcastagne, L. 2019. Development of rigging system for prefabricated wood I-joist floor panels. Modular and Offsite Construction (MOC) 2019, May 21-24, Banff, AB, Canada.
- [7] **Zhang, S.\***, Chui, Y. H. and Joo, D. 2019. Lateral performance of panel-to-panel connections in panelized wood I-joists floor systems. Modular and Offsite Construction (MOC) 2019, May 21-24, Banff, AB, Canada.
- [8] **Zhang, S.** and Xu, L. 2018. Human-structure interaction in cold-formed steel floor systems: An analytical perspective. Wei-Wen Yu International Specialty Conference on Cold-Formed Steel Structures 2018, November 7-8, St. Louis, Missouri, USA.
- [9] **Zhang, S.** and Chui, Y. H. 2018. Fastener row factors for wood I-joist diaphragms in mid-rise wood construction. 4th Annual Structures Graduate Students Conference, September 7, Edmonton, AB, Canada.
- [10] **Zhang, S.** and Xu, L. 2017. Equivalent stiffness of cold-formed steel floor systems for vibration performance assessment. International Conference on Composite Structures (ICCS20), September 4-7, Paris, France.
- [11] **Zhang, S.** and Xu, L., 2016. Fundamental frequency of lightweight cold-formed steel floor systems. In *Dynamics of Coupled Structures*, Volume 4, 137-145. doi:[10.1007/978-3-319-29763-7\\_14](https://doi.org/10.1007/978-3-319-29763-7_14)
- [12] **Zhang, S.**, Yang, N., Wang, Y., and Dong, C. 2011. Numerical analysis of long-span floor vibration due to crowd synchronized walking. In Fifth International Symposium on Environmental Vibration. October 20-22, Chengdu, China.

TEACHING  
EXPERIENCE

**Newcastle University**, Newcastle upon Tyne, the UK

*Instructor*

**September 2022 to present**

- ENG2015 Mechanics II
- CEG3301 Design of Building Systems

**University of Exeter**, Exeter, the UK

*Instructor*

**March 2022 to August 2022**

- ECMM108 Advanced Structural Engineering