



Professor Qing Quan Liang

See:

<https://www.vu.edu.au/contact-us/qing-quan-liang>

Structural Engineering
Victoria University, Melbourne Australia

Research Interests:

Computational mechanics; Concrete structures; Nonlinear/finite element analysis; Steel structures; Steel-concrete composite structures; Structural optimisation

Biography:

Associate Professor Qing Quan (Stephen) Liang is an Associate Professor of Structural Engineering in the College of Engineering and Science. He obtained his PhD from Victoria University of Technology in 2002 and his ME from the University of Wollongong in 1998. He has been appointed Guest Professor at Changsha University of Science and Technology, Central South University and Xi'an University of Architecture and Technology in China. Previously, he was a Lecturer in Structural Design, Associate Head and Program Coordinator at the University of Southern Queensland and an ARC Australian Postdoctoral Fellow and Research Associate at the University of New South Wales and University of Western Sydney. His research focuses on developing efficient computational methods and computer simulation technologies for the optimal structural design and nonlinear inelastic analysis of steel-concrete composite structures, steel structures and concrete structures. He has published some 85 books, book chapters, special issues, journal articles, and



Liang, Q. Q. (2014) Analysis and Design of Steel and Composite Structures, CRC Press, Taylor and Francis Group, London and New York

refereed conference papers. He is the sole author of the research book entitled Performance-Based Optimization of Structures: Theory and Applications and of the textbook entitled Analysis and Design of Steel and Composite Structures published by Taylor and Francis Group, and the co-author of the research book entitled Nonlinear Analysis of Concrete-Filled Steel Tubular Columns. More than 80% of his journal articles were published in SCImago Journal Rank Q1 international journals. He is the Founder and President of Australian Association for Steel-Concrete Composite Structures (AASCCS). He is a member of American Society of Civil Engineers (ASCE) and had served on the ASCE Technical Committees on Optimal Structural Design and on Composite Construction. He received the ASCE 2005 State-of-the-Art of Civil Engineering Award from ASCE. He is a member of the Editorial Boards of eight international journals, including Steel and Composite Structures = An International Journal.

Selected Publications:

Books:

- Patel, V. I., Liang, Q. Q. & Hadi, M. N. S. (2015) Nonlinear Analysis of Concrete-Filled Steel Tubular Columns, Scholars' Press, Germany, ISBN 978-3-639-66536-9.
- Liang, Q. Q. (2014) Analysis and Design of Steel and Composite Structures, CRC Press, Taylor and Francis Group, London and New York, ISBN 9780415532204.
- Liang, Q. Q. (2005) Performance-Based Optimization of Structures: Theory and Applications, Spon Press, Taylor and Francis Group, London and New York, ISBN 0-415-33594-9.
- Liang, Q. Q. & Patrick, M. (2001) Design of the Shear Connection of Simply-Supported Composite Beams, Design Booklet DB1.2, Composite Structures Design Manual, OneSteel, Sydney.

Journal Articles:

- Patel, V. I., Liang, Q. Q. & Hadi, M. N. S. (2015) Biaxially loaded high-strength concrete-filled steel tubular slender beam-columns, Part II: Parametric study, Journal of Constructional Steel Research, 110: 200-207.
- Patel, V. I., Liang, Q. Q. and Hadi, M. N. S. (2014) Nonlinear analysis of axially loaded circular concrete-filled stainless steel tubular short columns, Journal of Constructional Steel Research, 101, 9-18
- Patel, V. I., Liang, Q. Q. and Hadi, M. N. S. (2014) Behavior of biaxially-loaded rectangular concrete filled-steel tubular slender beam-columns with preload effects, Thin-Walled Structures, 79, 166-177.
- Patel, V. I., Liang, Q. Q. and Hadi, M. N. S. (2014) Numerical analysis of high-strength concrete-filled steel tubular slender beam-columns under cyclic loading, Journal of Constructional Steel Research, 92, 183-194.
- Liang, Q. Q., Patel, V. I. and Hadi, M. N. S. (2012) Biaxially loaded high-strength concrete-filled steel tubular slender beam-columns, Part I: Multiscale simulation, Journal of Constructional Steel Research, 75: 64-71.
- Patel, Vipulkumar Ishvarbhai and Liang, Qing Quan and Hadi, Muhammad N. S (2012) Inelastic stability analysis of high strength rectangular concrete-filled steel tubular slender beam-columns. Interaction and Multiscale Mechanics, 5 (2). pp. 91-104. ISSN 1976-0426
- Liang, Qing Quan and Patel, Vipulkumar Ishvarbhai and Hadi, Muhammad N. S (2012) Biaxially loaded high-strength concrete-filled steel tubular slender beam-columns, Part I: Multiscale simulation. Journal of Constructional Steel Research, 75. pp. 64-71. ISSN 0143-974X
- Patel, Vipulkumar Ishvarbhai and Liang, Qing Quan and Hadi, Muhammad N. S (2011) High strength thin-walled rectangular concrete-filled steel tubular slender beam-columns, Part I: Modeling. Journal of Constructional Steel Research, 70. pp. 377-384. ISSN 0143-974X

Patel, Vipulkumar Ishvarbhai and Liang, Qing Quan and Hadi, Muhammad N. S (2011) High strength thin-walled rectangular concrete-filled steel tubular slender beam-columns, Part II: Behavior. *Journal of Constructional Steel Research*, 70. pp. 368-376. ISSN 0143-974X

Liang, Qing Quan (2011) High strength circular concrete-filled steel tubular slender beam-columns, Part I: Numerical analysis. *Journal of Constructional Steel Research*, 67 (2). pp. 164-171. ISSN 0143-974X

Liang, Qing Quan (2011) High strength circular concrete-filled steel tubular slender beam-columns, Part II: Fundamental behavior. *Journal of Constructional Steel Research*, 67 (2). pp. 172-180. ISSN 0143-974X

Liang, Qing Quan and Fragomeni, Sam (2010) Nonlinear analysis of circular concrete-filled steel tubular short columns under eccentric loading. *Journal of Constructional steel research*, 66 (2). pp. 159-169. ISSN 0143-974X

Liang, Qing Quan and Fragomeni, Sam (2009) Nonlinear analysis of circular concrete-filled steel tubular short columns under axial loading. *Journal of Constructional Steel Research*, 65 (12). pp. 2186-2196. ISSN 0143-974X

Liang, Qing Quan (2009) Performance-based analysis of concrete-filled steel tubular beam-columns, Part II: Verification and applications. *Journal of Constructional Steel Research*, 65 (2). pp. 351-362. ISSN 0143-974X

Liang, Qing Quan (2009) Performance-based analysis of concrete-filled steel tubular beam-columns, Part I: Theory and algorithms. *Journal of Constructional Steel Research*, 65 (2). pp. 363-372. ISSN 0143-974X

Liang, Qing Quan (2009) Strength and ductility of high strength concrete-filled steel tubular beam-columns. *Journal of Constructional Steel Research*, 65 (3). pp. 687-698. ISSN 0143-974X

Liang, Qing Quan and Li, Na and Wang, Liping and Sun, Xiaoping (2009) A new semantic model with applications in a multimedia database system. *Concurrency and computation: Practice and experience*, 21 (5). pp. 691-704. ISSN 1532-0626 (print) 1532-0634 (online)

Liang, Qing Quan (2008) Nonlinear analysis of short concrete-filled steel tubular beam-columns under axial load and biaxial bending. *Journal of Constructional Steel Research*, 64 (3). pp. 295-304. ISSN 1873-5983

Rong, Jian and Liang, Qing Quan (2008) A level set method for topology optimization of continuum structures with bounded design domains. *Computer Methods in Applied Mechanics and Engineering*, 197 (17-18). pp. 1447-1465. ISSN 0045-7825

Rong, J and Liang, Qing Quan and Yang, D (2007) A level set method for structural topology optimization based on topology random mutations. *Chinese Journal of Theoretical and Applied Mechanics*, 39 (6). pp. 796-803. ISSN 0459-1879

Liang, Qing Quan and Uy, Brian and Wright, Howard D and Bradford, Mark A (2004) Local Buckling of Steel Plates in Double Skin Composite Panels under Biaxial Compression and Shear. *Journal of Structural Engineering, ASCE*, 130 (3). pp. 443-451. ISSN 0733-9445

Liang, Qing Quan and Uy, Brian and Bradford, Mark A and Ronagh, Hamid R (2004) Ultimate strength of continuous composite beams in combined bending and shear. *Journal of Constructional Steel Research*, 60 (8). pp. 1109-1128. ISSN 0143-974X

Liang, Qing Quan and Wright, Howard D and Bradford, Mark A (2003) Local and post-local buckling of double skin composite panels. *Proceedings of The Institution of Civil Engineers (ICE) - Structures and Buildings*, 156 (2). pp. 111-119. ISSN 0965-0911

Liang, Qing Quan and Xie, Yi Min and Steven, Grant Prentice (2001) Generating Optimal Strut-and-Tie Models in Prestressed Concrete Beams by Performance-Based Optimization. *American Concrete Institute Structural Journal*, 98 (2). pp. 226-232. ISSN 0889-3241

Liang, Qing Quan and Xie, Yi Min and Steven, Grant Prentice (2000) Topology Optimization of Strut-and-Tie Models in Reinforced Concrete Structures Using an Evolutionary Procedure. *American Concrete Institute Structural Journal*, 97 (2). pp. 322-330. ISSN 0889-3241