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Research Interests:

Carbon fiber reinforced polymer (CFRP), Steel structure, Structural health monitoring, Finite element model, Structural strengthening and rehabilitation, Disaster mitigation of structures,, Impact and energy absorption of structures, Seismic response of structures, Microstructure modeling

Selected Publications:

S. Fawzia, Bond characteristics between steel and carbon fiber reinforced polymer (CFRP) composites, Civil Engineering Department, Monash University, Melbourne

Fawzia, S., Al-Mahaidi, R., Zhao, X.L. and Rizkalla, S. (2007), "Strengthening of circular hollow steel tubular sections using high modulus CFRP sheets", Construction and Building Materials, Vol. 21, issue 4, 839-847.

S. Fawzia, M.A. Karim, "Investigation into the bond between CFRP and steel plates", World Acad. Sci. Eng. Technol., 53 (2009)

Md Iftekharul Alam, Sabrina Fawzia, Xuemei Liu and C.R.J. Batuwitige, "Dynamic simulation of CFRP Strengthened steel column under impact loading", 23rd Australian Conference on the Mechanics of Structures and Materials (ACMSM23), Byron Bay, Australia, 9-12 December 2014

C.R.J. Batuwitige, Sabrina Fawzia, Xuemei Liu and Md Iftekharul Alam, "Finite element modeling of carbon fibre reinforced polymer (CFRP) strengthened steel tubes under axial impact", 23rd Australian Conference on the Mechanics of Structures and Materials (ACMSM23), Byron Bay, Australia, 9-12 December 2014

Md. Humayun Kabir, Sabrina Fawzia and Tommy H.T. Chan, "Effects of layer orientation of CFRP strengthened hollow steel members", Gradevinar Vol. 67 No. 5, pp 441-451, 2015, DOI:

10.14256/JCE.1127.2014

Alam, M.I. and Fawzia, S. (2015), "Numerical studies on CFRP strengthened steel columns under transverse impact", Compos. Struct., 120, 428-441

Alam MI, Fawzia S, Liu X. Effect of bond length on the behaviour of CFRP strengthened concrete-filled steel tubes under transverse impact. Composite Structures 2015;132:898-914

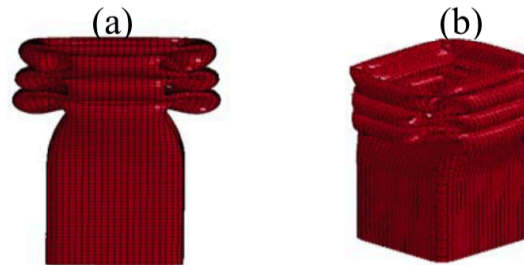


Figure 3: Failure mode of bare steel tube: FE analysis (a) side view (b) isometric view

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Saima Ali, Xuemei Liu, Sabrina Fawzia, Jun Wu and Yuan Tong Gu, "A review on exploring the behavior of multi-layer composite structures under dynamic loading", *International Journal of Structural and Civil Engineering Research*, Vol. 5, No. 1, February 2016

Alam MI, Fawzia S, Zhao X-L. Numerical investigation of CFRP strengthened full scale CFST columns subjected to vehicular impact. *Engineering Structures*. 2016;126:292-310.

M. I. Alam, S. Fawzia, X.-L. Zhao, A. M. Remennikov, M. R. Bambach, and M. Elchalakani, "Performance and dynamic behaviour of FRP strengthened CFST members subjected to lateral impact," *Engineering Structures*, vol. 147, pp. 160–176, 2017

Mohamed Elchalakani, Ali Karrech, Hakan Basarir, Xiao-Ling Zhao, Sabrina Fawzia and M.F. Hassanein, "Strengthening of mild steel struts using CFRP sheets subjected to uniform axial compression", *Thin-Walled Structures*, Vol. 116, pp 96-112, July 2017

Mohamed Elchalakani, Ali Karrech, Hakan Basarir, M.F. Hassanein (2) and Sabrina Fawzia, "CFRP strengthening and rehabilitation of corroded steel pipelines under direct indentation", *Thin-Walled Structures*, Vol. 119, pp 510-521, October 2017

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Chamila Batuwitage, Sabrina Fawzia, David Thambiratnam, Xuemei Liu, Riadh Al-Mahaidi and Mohammed Elchalakani, "Impact behaviour of carbon fibre reinforced polymer (CFRP) strengthened square hollow steel tubes: A numerical simulation", *Thin-Walled Structures*, Vol. 131, pp 245-257, October 2018

Minhao Dong (1), Mohamed Elchalakani (1), Ali Karrech (1), Sabrina Fawzia (2), Mohamed Sadakkathulla Mohamed Ali (3), Bo Yang (4) and Shao-Qian Xu, "Circular steel tubes filled with rubberised concrete under combined loading", *Journal of Constructional Steel Research*, Vol. 162, Article 105613, November 2019

Shovona Khusru, Sabrina Fawzia, David P. Thambiratnam and Mohamed Elchalakani, "A parametric study: High performance double skin tubular column using rubberised concrete", *Composite Structures*, Vol. 235, Article 111741, 1 March 2020