References

- Abbas, M. A. 2010. Durability of CFRP-Concrete Bond under Sustained Load in Harsh Environment. PhD by Thesis, Department of Civil Engineering, Monash.
- Abdollahi Chahkand, N. et al. 2013. "Experimental and Theoretical Investigation on Torsional Behaviour of CFRP Strengthened Square Hollow Steel Section."

 Thin-Walled Structures 68: 135–40.

 http://dx.doi.org/10.1016/j.tws.2013.03.008.
- Al-ridha, Ahmed S D, Ali A Abbood, and Ali F Atshan. 2020. "Improving the Performance of Steel Beams by Using Carbon Fiber Reinforced Polymer: A Review قير صنتسملا قيلك قسدنهلا قعماجلا قير صنتسملا قيلك قسدنهلا قعماجلا قير صنتسملا قيلك قسدنهلا معاجلا قير المنتسملا قيلك المعادية عماجلا قير صنتسملا قيلك المعادية المعا
- Al-Zubaidy, Haider, Xiao Ling Zhao, and Riadh Al-Mahaidi. 2013. "Mechanical Characterisation of the Dynamic Tensile Properties of CFRP Sheet and Adhesive at Medium Strain Rates." *Composite Structures* 96: 153–64. http://dx.doi.org/10.1016/j.compstruct.2012.09.032.
- Alam, Md Iftekharul, Fawzia, Sabrina, Liu, Xuemei, Batuwitage, Chamila Rajeev Jayanath. 2014. "Dynamic Simulation of CFRP Strengthened Steel Column under Impact Loading." In *Proceedings of the 23rd Australasian Conference on the Mechanics of Structures and Materials (ACMSM23), Volume 1.*Southern Cross University, Australia, , 503–8.
- Alam, Md Iftekharul., Fawzia, Sabrina. 2015. "Numerical Studies on CFRP Strengthened Steel Columns under Transverse Impact." *Composite Structures* 120: 428–41.
- Alam, M I, and S Fawzia. 2017. "FE Modeling of FRP Strengthened CHS Members

- Subjected to Lateral Impact." In 16th International Symposium on Tubular Structures, , 4–6.
- Alam, Md Iftekharul et al. 2017. "Performance and Dynamic Behaviour of FRP Strengthened CFST Members Subjected to Lateral Impact." *Engineering Structures* 147: 160–76. http://dx.doi.org/10.1016/j.engstruct.2017.05.052.
- Altaee, Mohammed, Lee S Cunningham, and Martin Gillie. 2019. "Practical Application of CFRP Strengthening to Steel Floor Beams with Web Openings:

 A Numerical Investigation." *Journal of Constructional Steel Research* 155:

 395–408. https://doi.org/10.1016/j.jcsr.2019.01.006.
- Altaee, Mohammed J, Lee S Cunningham, and Martin Gillie. 2017. "Experimental Investigation of CFRP-Strengthened Steel Beams with Web Openings."

 Journal of Constructional Steel Research 138: 750–60.

 http://dx.doi.org/10.1016/j.jcsr.2017.08.023.
- Amir Hamzeh Keykha. 2018. "Investigation of the Effect of CFRP Strengthening on the Behavior of Deficient Steel Members under Combined Lateral and Torsional Loading." *Jordan Journal of Civil Engineering* 12(04): 590–602.
- Ashcroft I.A., Mubashar A. 2011. Numerical Approach: Finite Element Analysis. In:

 Da Silva L.F.M., Öchsner A., Adams R.D. (Eds) Handbook of Adhesion

 Technology.
- ASTM A 370-19ei. 2019. Standard Testing Methods and Definitions for Mechanical Testing of Steel Products. West Conshohocken.
- ASTM A370 / ASME SA-370: Standard Test Methods and Definitions for Mechanical Testing of Steel Products 1. 2016. USA: ASTM Standard, American Society for Testing Materials.

- ASTM D3030/D3039M: Standard Test Method for Tensile Properties of Polymer

 Matrix Composite Materials 1. 2002. 15 USA: ASTM Standard, American

 Society for Testing Materials.
- ASTM D638 14: Standard Test Method for Tensile Properties of Plastics 1. 2015.

 USA: ASTM Standard, American Society for Testing Materials.
- Austin, W.J. and Ross, T. J. 1976. "Elastic Buckling of Arches under Symmetric Loading." *Journal of the Structural Division, ASCE* 102(05): 1085–95.
- Avgoulas, Evangelos I, and Michael P F Sutcliffe. 2016. "Biomimetic-Inspired CFRP to Perforated Steel Joints." *Composite Structures* 152: 929–38.
- Babu, B Rajesh, and M C Sundarraja. "Strengthening of Square Hollow Structural Steel (Hss.) Tubular Sections Using Cfrp Strips.": 25–34.
- Badawy, Anwar et al. 2019. "Behavior of Hollow Steel Sections Strengthened with CFRP." *Construction and Building Materials* 205: 306–20. https://doi.org/10.1016/j.conbuildmat.2019.01.237.
- Bagale, Bibek Regmi, S M Asce, and Azadeh Parvin. 2020. "Fiber-Reinforced Polymer Strengthening of Steel Beams under Static and Fatigue Loadings." Practice Periodical on Struc- tural Design and Construction 26(1): 1–9.
- Baldan, A. 2004a. "Adhesively-Bonded Joints and Repairs in Mattalic Alloys,

 Polymers and Composite Materials: Adhesives, Adhesion Theories and Surface

 Pretreatments." *Journal of Materials Science* 39(1): 1–49.
- 2004b. "Adhesively-Bonded Joints and Repairs in Metallic Alloys,
 Polymers and Composite Materials: Adhesives, Adhesion Theories and Surface
 Pretreatment." *Journal of Materials Science* 39(1): 1–49.

- 2004c. "Adhesively-Bonded Joints and Repairs in Metallic Alloys,
 Polymers and Composite Materials: Adhesives, Adhesion Theories and Surface
 Pretreatment." *Journal of Materials Science* 39(1): 1–49.
- Banea, M. D. and Silva, L. F. M. da. 2009. "Adhesively Bonded Joints in Composite Materials: An Overview." *Proceedings of the Institution of Mechanical Engineers* 223(L1): 1–18.
- Bank, L.C. and Gentry, T.R. 1995. "Accelerated Test Methods to Determine the Long- Term Behavior of FRP Composite Structures: Environmental Effects."

 Journal of Reinforced Plastic and Composites 14: 558–87.
- Belytschko, T. and Glaum, L.W. 1979. "Applications of Higher Order Corotational Stretch Theories to Nonlinear Finite Element Analysis." *Computers & Structures* 10: 175–82.
- Bocciarelli, M., Colombi, P., Fava, G., and Poggi, C. 2007. "Interaction of Interface Delamination and Plasticity in Tensile Steel Members Reinforced by CFRP Plates." *International Journal of Fracture* 146(1-2): 79–92.
- 2009. "Prediction of Debonding Strength of Tensile Steel/CFRP Joints
 Using Fracture Mechanics and Stress Based Criteria." Engineering Fracture
 Mechanics (76(2)): 299–313.
- Bocciarelli, M. 2009. "Response of Statically Determined Steel Beams Reinforced by CFRP Plates in the Elastic-Plastic Regime." *Engineering Structures* 31(4): 956–67.
- Bocciarelli, Massimiliano, Pierluigi Colombi, Giulia Fava, and Lisa Sonzogni. 2016. "Energy-Based Analytical Formulation for the Prediction of End Debonding in Strengthened Steel Beams." *Composite Structures*. doi: http://

- dx.doi.org/10.1016/j.compstruct.2016.05.084%0AThis.
- Boulton, N. S., and Boonsukha, B. 1959. "Plastic Collapse Loads for Circular-Arc Bow Girders." *Proc., Institution of Civil Engineers* 13(6): 161–78.
- Brown, ARG. 1974. "The Corrosion of CFRP-to-Metal Couples in Saline

 Environments." In *Proceedings of the 2nd International Conference on Carbon Fibres*, , 18–20.
- Brown, David. 2007. "Design of Curved Steel." The Steel Construction Institute.
- Byars, E. A., Waldron, P., Dejke, V., Demis, S. and Heddadin, S. 2003. "Durability of FRP in Concrete Deterioration Mechanisms." *International Journal of Materials & Product Technology* 19(1-2): 28–39.
- Calhoun, P.R. and DaDeppo, D. 1983. "Nonlinear Finite Element Analysis of Clamped Arches." *Journal of Structural Engineering, ASCE* 109: 599–612.
- Camanho PP, Davila CG, de Moura MF. 2003. "Numerical Simulation of Mixed Mode Progressive Delamination in Composite Materials." *Journal of Composite Materials* 37(16): 1415–38.
- Cazzani, Antonio, Marcello Malagù, and Emilio Turco. 2014. "Isogeometric Analysis of Plane-Curved Beams." *Mathematics and Mechanics of Solids* 21(5): 562–77.
- Chawla, K.K. 1998. *Composite Materials: Science and Engineering*. Springer Netherlands.
- Che, Y., Q. L. Wang, and Y. B. Shao. 2012. "Compressive Performances of the Concrete Filled Circular CFRP-Steel Tube (C-CFRP-CFST)." *Advanced Steel Construction* 8(4): 331–58.

- Chen, J.F., Teng, J.G. 2001. "Anchorage Strength Models for FRP and Steel Plates Bonded to Concrete." *Journal of Structural Engineering* 127(7): 784–91.
- Chen, Tao et al. 2018. "Experimental Study on Fatigue Behavior of Cracked Rectangular Hollow-Section Steel Beams Repaired with Prestressed CFRP Plates." *Journal of Composites for Construction* 22(5): 1–11.
- Chiew, S P, Y Yu, and C K Lee. 2011. "Bond Failure of Steel Beams Strengthened with FRP Laminates Part 1: Model Development." *Composites: Part B* 42: 1114–21.
- Chini, S.A. and Wolde-Tinsae, A. M. 1988. "Critical Load and Postbuckling of Arch Frameworks." *Journal of Engineering Mechanics, ASCE* 114(09): 1435–53.
- Colombi, P. and Poggi, C. 2006. "Strengthening of Tensile Steel Members and Bolted Joints Using Adhesively Bonded CFRP Plates." *Construction and Building Materials* 20(1-2): 22–33.
- Colombi, Pierluigi, and Carlo Poggi. 2006. "An Experimental, Analytical and Numerical Study of the Static Behavior of Steel Beams Reinforced by Pultruded CFRP Strips." *Composites Part B: Engineering* 37: 64–73.
- Conway, H.D. and Lo, C.F. 1967. "Further Studies on the Elastic Stability of Curved Beams." *International Journal of Mechanical Sciences* 09: 707–18.
- Crasto, A.S. and Kim, R.Y. 1996. "Environmental Durability of a Composite-to-Composite Adhesive Bond in Infrastructure Applications." In 28th

 International SAMPE Technical Conference, , 837–49.
- D3039/D3039M-17, ASTM. 2017. Standard Test Methods for Tensile Properties of Polymer Matrix Composite Materials.

- DaDeppo, D.A. and Schmidt, R. 1969. "Nonlinear Analysis of Buckling and Postbuckling Behavior of Circular Arches." *Journal of Applied Mathematics* and Physics 20: 847–57.
- El Damatty, A.A., M. Abushagur, and M.A. Youssef. 2003. "Experimental and Analytical Investigation of Steel Beams Rehabilitated Using GFRP Sheets." Steel and Composite Structures 3(6): 421–38.
- Dawe, D.J. 1971. "A Finite-Deflection Analysis of Shallow Arches by the Discrete Element Method." *International Journal for Numerical Methods in Engineering* 02: 529–52.
- Dawood, M.M.R. 2008. Bond Characteristics and Environmental Durability of CFRP Materials for Strengthening Steel Bridges and Structures. PhD in Civil Engineering, Graduate Faculty, North Carolina State University.
- Dawood, Mina. 2008. "Bond Charactersistics and Environmental Durability of CFRP Materials for Strengthening Steel Bridges and Structures." *Materials science*.
- Deng, J. and Lee, M.M.K. "Bwhaviour under Static Loading of Metalic Beams Reinforced with a Bonded CFRP Plate." *Composite Structures* 78: 232–42.
- Deng, J., Lee M.M.K. 2007. "Behaviour under Static Loading of Metallic Beams Reinforced with a Bonded CFRP Plate." *Composite Structures* 78(2): 232–42.
- Deng J, Lee MMK, Moy SSJ. 2004. "Stress Analysis of Steel Beams Reinforced with a Bonded CFRP Plate." *Composite* (65): 205–15.
- Deng, Jiangang. 2008. Durability of Carbon Fiber Reinforced Polymer (CFRP)

 Repair/Strengthening Concrete Beams. PhD in Civil Engineering, Department of Civil & Architectural Engineering and The Graduate School, The University

- of Wyoming.
- Devi, Urmi, and Khan Mahmud Amanat. 2015. "Non-Linear Finite Element Investigation on the Behavior of CFRP Strengthened Steel Square HSS Columns under Compression." *International Journal of Steel Structures* 15(3): 671–80.
- Dimitri, R., M. Trullo, L. De Lorenzis, and G. Zavarise. 2015. "Coupled Cohesive Zone Models for Mixed-Mode Fracture: A Comparative Study." *Engineering Fracture Mechanics* 148: 145–79.

 http://dx.doi.org/10.1016/j.engfracmech.2015.09.029.
- EI Damatty, A.A., and Abushagur, M. 2003. "Testing and Modelling of Shear and Peel Behaviour for Bonded Steel/FRP Connections." *Thin Walled Structures* 41(11): 987–1003.
- Elchalakani, Mohamed. 2014a. "CFRP Strengthening and Rehabilitation of Degraded Steel Welded RHS Beams under Combined Bending and Bearing."

 Thin-Walled Structures 77: 86–108.

 http://dx.doi.org/10.1016/j.tws.2013.12.002.
- ———. 2014b. "Plastic Collapse Analysis of CFRP Strengthened and Rehabilitated Degraded Steel Welded RHS Beams Subjected to Combined Bending and Bearing." *Thin-Walled Structures* 82: 278–95.
 http://dx.doi.org/10.1016/j.tws.2014.05.002.
- Elchalakani, Mohamed, Xiao Ling Zhao, and Raphael Grzebieta. 2004. "Cyclic Bending Tests to Determine Fully Ductile Section Slenderness Limits for Cold-Formed Circular Hollow Sections." *Journal of Structural Engineering* 130(7): 1001–10.

- Elias, Z. and Chen, K.-L. 1988. "Nonlinear Shallow Curved-Beam Finite Element", Journal of Engineering Mechanics." *Journal of Engineering Mechanics, ASCE* 114: 1076–87.
- Farmer N & Smith I. 2001. "King Street Railway Bridge} strengthening of Cast Iron Girders with FRP Composites." In *Proceedings of the 9th International Conference on Structural Faults and Repairs, London,*.
- 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* 21(4): 839–45.
- Fawzia, S., R. Al-Mahaidi, X. L. Zhao, and S. Rizkalla. 2007. "Strengthening of Circular Hollow Steel Tubular Sections Using High Modulus CFRP Sheets." *Construction and Building Materials* 21(4): 839–45.
- Fawzia, Sabrina et al. 2015. "Effects of CFRP Layer Orientation on Strengthening of Hollow Steel Elements." *Journal of the Croatian Association of Civil Engineers* 67(5): 441–51. http://casopis-gradjevinar.hr/archive/article/1127.
- Fernado, D. 2010. *Bond Behaviour and Bonding Failures of CFRP Strengthened*Steel Sructures. PhD by Thesis, Department of Civil and Structural

 Engineering, The Hong Kong Polytechnic University, Hong Kong.
- Fernando, D., T. Yu, J. G. Teng, and X. L. Zhao. 2008. "CFRP Strengthening of Rectangular Steel Tubes Subjected to End Bearing Loads: Effect of Adhesive Properties." *Proceedings of the 4th International Conference on FRP Composites in Civil Engineering, CICE 2008* (Schnerch 2005): 22–24.
- Fernando, D, T Yu, J G Teng, and X L Zhao. 2009. "Thin-Walled Structures CFRP Strengthening of Rectangular Steel Tubes Subjected to End Bearing Loads:

- Effect of Adhesive Properties and Finite Element Modelling." *Thin Walled Structures* 47(10): 1020–28. http://dx.doi.org/10.1016/j.tws.2008.10.008.
- Fernando, Dilum. 2010. Bond Behaviour Nd Debonding Failures in CFRP

 Strengthened Steel Members. PhD by Thesis, Department of Cvil and Structural
 Engineering, The Hong Kong Plytechnic University.
- Fernando ND. 2010. "Bond Behaviour and Debonding Failures in CFRP-Strengthened Steel Members." The Hong Kong Polytechnic University, Hong Kong, China.
- Flinn, R.A. and Trojan, P.K. 1995. *Engineering Materials and Their Applications*. John Wiley and Sons.
- Francis, R. 2000. *Bimetallic Corrosion: Guides to Good Practice in Corrosion Control*. National Physical Laboratory, Teddington, Middlesex.
- Fukumoto, Y., Nishida, S. 1981. "Ultimate Load Behavior of Curved I-Beams." *J. Engrg. Mech. Div., ASCE* 107(2): 367–85.
- Gamage, J.C.P.H. 2009. Cyclic Temperature and Humidity Effects on Bond between CFRP and Concrete. PhD by Thesis, Department of Civil Engineering, Monash University, Australia.
- Gao, X Y, T Balendra, and C G Koh. 2013. "Buckling Strength of Slender Circular Tubular Steel Braces Strengthened by CFRP." *Engineering Structures* 46: 547–56. http://dx.doi.org/10.1016/j.engstruct.2012.08.010.
- Gendy, A. S., and A. F. Saleeb. 1992. "On the Finite Element Analysis of the Spatial Response of Curved Beams with Arbitrary Thin-Walled Sections." *Computers and Structures* 44(3): 639–52.

- George C. Tsiatas, Nick G. Babouskos. 2017. "Linear and Geometrically Nonlinear Analysis of Nonuniform Shallow Arches under a Central Concentrated Force."

 International Journal of Non-Linear Mechanics 92: 92–101.
- Gjelsvik, A. and Bodner, S.R. 1962. "The Energy Criterion and Snap Buckling of Arches." *Journal Engineering of the Mechanic Division, ASCE* 88(05): 87–134.
- Haedir, J., M. R. Bambach, X. L. Zhao, and R. H. Grzebieta. 2009. "Strength of Circular Hollow Sections (CHS) Tubular Beams Externally Reinforced by Carbon FRP Sheets in Pure Bending." *Thin-Walled Structures* 47(10): 1136–47. http://dx.doi.org/10.1016/j.tws.2008.10.017.
- Haedir, Jimmy, and Xiao Ling Zhao. 2011. "Design of Short CFRP-Reinforced Steel Tubular Columns." *Journal of Constructional Steel Research* 67(3): 497–509. http://dx.doi.org/10.1016/j.jcsr.2010.09.005.
- "Hamburg Airport Roof." https://www.shutterstock.com/image-photo/hamburg-airport-roof-26921713 (April 25, 2020).
- Hamood, Mohammed J, Maha Ghalib Ghaddar, Zinah Asaad, and Abdul Husain.

 2020. "STRENGTHENING OF STRUCTURAL STEEL CHANNELS BY

 DIFFERENT CFRP WRAPPING CONFIGURATIONS-FINITE ELEMENT

 ANALYSIS." Journal of Engineering Science and Technology 15(2): 1079–91.
- Hand, H. M., Arah, C. O., McNamara, D. K. and Mecklenburg, M. F. 1991. "Effects of Environmental Exposure on Adhesively Bonded Joints." *International Journal of Adhesion and Adhesives* 11(1): 15–23.
- Harries, K.A., Peck, A.J. and Abraham, E.J. 2009. "Enhancing Stability of Structural Steel Sections Using FRP." *Thin Walled Structures* 47(10): 1092–1101.
- Harries, Kent A., and Sherif El-Tawil. 2008. "Steel-FRP Composite Structural

- Systems." International Conference on Composite Construction in Steel and Concrete (May): 1–30.
- Hashim, S. A. 1999. "Adhesive Bonding of Thick Steel Adherends for Marine Structures." *Marine Structures* 12(6): 405–23.
- He, Xiaocong. 2011. "A Review of Finite Element Analysis of Adhesively Bonded Joints." *International Journal of Adhesion and Adhesives* 31(4): 248–64.
- Heshmati, Mohsen, Reza Haghani, and Mohammad Al-emrani. 2015.

 "Environmental Durability of Adhesively Bonded FRP/Steel Joints in Civil Engineering Applications: State of the Art." *Composites Part B*.

 http://dx.doi.org/10.1016/j.compositesb.2015.07.014.
- Heshmati, Mohsen, Reza Haghani, Mohammad Al-Emrani, and Alann André. 2018.
 "On the Strength Prediction of Adhesively Bonded FRP-Steel Joints Using
 Cohesive Zone Modelling." *Theoretical and Applied Fracture Mechanics* 93:
 64–78. http://dx.doi.org/10.1016/j.tafmec.2017.06.022.
- Hii, Adrian K. Y. and Al-Mahaidi, Riadh. 2006. "Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP Using Photogrammetry." *Journal of Composites for Construction* 10(4): 321–29.
- Hollaway, L. C., Teng, J. G. and Institute of Materials, Minerals and Mining. 2008.

 Strengthening and Rehabilitation of Civil Infrastructures Using FibreReinforced Polymer (FRP) Composites. Cambridge, UK: Woodhead
 Publishing/CRC Press.
- Hollaway, LC and Cadei, J. 2002. "Progress in the Technique of Upgrading Metallic Structures with Advanced Polymer Composites." *Progress in Structural*

- *Engineering and Materials* 4(2): 131–48.
- Horibe T. and Asano, N. 2000. "Boundary Integral Equation Method Analysis of Large Deflection of Shallow Arch." *Transactions of the Japan Society of Mechanical Engineers* 66: 1091–95.
- Horton, T., Spinks, G.M. and Isles, N.A. 1992. "Structural Adhesive Performance in Marine Environments." *Polymer International* 28(1): 9–17.
- Hu, Lili, Peng Feng, and Xiao Ling Zhao. 2017. "Fatigue Design of CFRP Strengthened Steel Members." *Thin-Walled Structures* 119(January): 482–98. http://dx.doi.org/10.1016/j.tws.2017.06.029.
- Huang, Cheng, Tao Chen, and Xian Wang. 2017. "Compressive Characteristics of Damaged Circular Hollow Section (CHS) Steel Columns Repaired by CFRP or Grout Jacketing." *Thin-Walled Structures* 119(February): 635–45. http://dx.doi.org/10.1016/j.tws.2017.07.008.
- Hui, C. Y., A. Ruina, R. Long, and A. Jagota. 2011. "Cohesive Zone Models and Fracture." *Journal of Adhesion* 87(1): 1–52.
- Hutchinson, A. R. 1987. "Surface Pretreatment-the Key to Durability." *Proceedings* of the International Conference on Structural Faults & Repair: 235–44.
- Ibrahim, Amer M. 2018. "The Ovalisation of Steel Circular Hollow Sections under Bending." 11(1): 12–19.
- Jackson, N. 1966. "Collapse Loads for Circular-Arc Beams." *J. Struct. Div., ASCE* 92(5): 1–14.
- Jana S and Zhong W H. 2007. "FTIR Study of Ageing Epoxy Resin Reinforced by Reactive Graphitic Nanofibers." *J Appl Polym Sci* 106: 3555–63.

- Jiao, H. and Zhao, X. L. 2004. "CFRP Strengthened Butt-Welded Very High Strength (VHS) Circular Steel Tubes." *Thin-Walled Structures* 42(7): 963–78.
- Kabir, M H., S. Fawzia . T. H. T. Chan . J. C. P. H. Gamage. 2015. "Comparative Durability Study of CFRP Strengthened Tubular Steel Members under Cold Weather." *Materials and Structures* 10 April. http://dx.doi.org/10.1617/s11527-015-0610-x.
- Kabir, M. H., S. Fawzia, T. H.T. Chan, J. C.P.H. Gamage, et al. 2016.
 "Experimental and Numerical Investigation of the Behaviour of CFRP
 Strengthened CHS Beams Subjected to Bending." *Engineering Structures* 113: 160–73. http://dx.doi.org/10.1016/j.engstruct.2016.01.047.
- Kabir, M. H., S. Fawzia, and T. H.T. Chan. 2016. "Durability of CFRP Strengthened Circular Hollow Steel Members under Cold Weather: Experimental and Numerical Investigation." Construction and Building Materials 123: 372–83. http://dx.doi.org/10.1016/j.conbuildmat.2016.06.116.
- Kabir, M. H., S. Fawzia, T. H.T. Chan, and M. Badawi. 2016a. "Durability of CFRP Strengthened Steel Circular Hollow Section Member Exposed to Sea Water."
 Construction and Building Materials 118: 216–25.
 http://dx.doi.org/10.1016/j.conbuildmat.2016.04.087.
- ———. 2016b. "Numerical Studies on CFRP Strengthened Steel Circular Members under Marine Environment." *Materials and Structures/Materiaux et Constructions* 49(10): 4201–16.
- Kabir, Mohammad Humayun, Sabrina Fawzia, Tommy H T Chan, and Jeeva C P H
 Gamage. 2014. "Durability Performance of Carbon Fibre-Reinforced Polymer
 Strengthened Circular Hollow Steel Members under Cold Weather." *Australian*

- *Journal of Structural Engineering* 15(4): 377–92.
- Kadhim, Majid M.A., Zhangjian Wu, and Lee S. Cunningham. 2018a. "Loading Rate Effects on CFRP Strengthened Steel Square Hollow Sections under Lateral Impact." *Engineering Structures* (xxxx): 0–1. http://dx.doi.org/10.1016/j.engstruct.2018.04.066.
- Kadhim, Majid M A et al. 2019. "Experimental and Numerical Investigation of CFRP-Strengthened Steel Beams under Impact Load." *Journal of Structural Engineering*, ASCE 145(4).
- ——. "Experimental and Numerical Investigation of CFRP Strengthened Steel Beams under Impact Load." (1).
- Kadhim, Majid M A, Zhangjian Wu, and Lee S Cunningham. 2018b. "Loading Rate e Ff Ects on CFRP Strengthened Steel Square Hollow Sections under Lateral Impact." *Engineering Structures* (xxxx): 0–1. http://dx.doi.org/10.1016/j.engstruct.2018.04.066.
- Kang Young J. Yoo Chai H. 1994. "Thin Walled Curved Beams. 1: Formulation of Nonlinear Equations." *J Eng Mech, ASCE* 122(5): 2072–2101.
- Karimian, Masoumeh, Kambiz Narmashiri, Mehdi Shahraki, and Omid Yousefi.
 2017. "Structural Behaviors of Deficient Steel CHS Short Columns
 Strengthened Using CFRP." Journal of Constructional Steel Research 138:
 555–64.
- Karnovsky, I.A. 2012. *Theory of Arched Structures: Strength, Stability, Vibration*. Springer Netherlands.
- Karnovsky, Igor A. 2012. 9781461404699 Theory of Arched Structures: Strength,

- Stability, Vibration *Theory of Arched Structures: Strength, Stability, Vibration.*
- Katrizadeh, Eshagh, and Kambiz Narmashiri. 2019. "Experimental Study on Failure Modes of MF-CFRP Strengthened Steel Beams." *Journal of Constructional Steel Research* 158: 120–29. https://doi.org/10.1016/j.jcsr.2019.03.027.
- Keesei Lee, James S. Davidson, Junho Choi, Youngjong Kang. 2017. "Ultimate Strength of Horizontally Curved Steel I-Girders with Equal End Moments." *Engineering Structures* 153(2017): 17–31.
- Kelly P. 1999. "Epoxy Vinyl Ester and Other Resins in Chemical Process Equipment." *Reinforced Plastics Durability* Cambridge,: 282–93.
- Keykha, Amir Hamzeh. 2017. "3D FINITE ELEMENT ANALYSIS OF

 DEFICIENT HOLLOW STEEL BEAMS STRENGTHENED USING CFRP

 COMPOSITE UNDER TORSIONAL LOAD." Composites: Mechanics,

 Computations, Applications: An International Journal 8: 287–97.
- 2018. "Investigation of the Behavior of Deficient Steel Members
 Strengthened Using Carbon Fiber Reinforced Polymer under Combined
 Compressive Load and Torsional Moment." *Mechanics of Advanced Materials* and Structures 0(0): 1–9. https://doi.org/10.1080/15376494.2018.1501833.
- ——. 2019. "Assessment of Structural Behavior of Vertical Curved Hollow Steel Beams Strengthened Using CFRP Composite." *Practice Periodical on Structural Design and Construction* 24(2009): 1–8.
- Keykha, Amir Hamzeh, Masoud Nekooei, Reza Rahgozar, and Kambiz Narmashiri.

 2015. "Investigation of Load Increment in Hollow Steel Short and Slender

 Columns Strengthened Using CFRP." WALIA journal 31(S3): 163–69.
- Kim, J.G. and Kim, Y.Y. 1998. "A NEW HIGHER-ORDER HYBRID-MIXED

- CURVED BEAM ELEMENT." 940(February): 925–40.
- Kostovailis, D.K.S.G., Hussein, M.F.M. and Owen, J.S. 2013. "A Comparison between the Use of Straight and Curved Beam Elements for Modelling Curved Railway Tracks." In *In: 11th Biennial International Conference on Vibration Problems (ICOVP-2013), 9th? 12th September 2013*, Lisbon, Portugal.
- Kotnarowska D. 1999. "Influence of Ultraviolet Radiation and Aggressive Media on Epoxy Coating Degradation." *Prog Org Coa* 37: 149–59.
- Kozák, Vladislav. 2008. "Cohesive Zone Modelling." *AIP Conference Proceedings* 1048: 328–31.
- L C Hollaway and J Cadei. 2002. "Progress in the Technique of Upgrading Metallic Structures with Advanced Polymer Composites." *Prog. Struct. Engng Mater* 4: 131–48.
- Lane IR & Ward JA. 2000. "Restoring Britains Bridge Heritage." Institution of Civil Engineers (South Wales Association) Transport Engineering Group Award,.
- Lee, P.-G. and Sin, H.C. 1994. "Locking-Free Curved Beam Element Based on Curvature." *International Journal for Numerical Methods in Engineering* 317: 989–1007.
- Lenwari, Akhrawat, Thaksin Thepchatri, Pedro Albrecht, and M Asce. 2005.

 "Flexural Response of Steel Beams Strengthened with Partial-Length CFRP Plates." (August): 296–303.
- ———. 2006. "Debonding Strength of Steel Beams Strengthened with CFRP Plates." *Journal of Composites for Construction* 10(1): 69–78.
- Li, Chuanxi et al. 2018. "Effects of Mechanical Properties of Adhesive and CFRP

- on the Bond Behavior in CFRP-Strengthened Steel Structures." *Composite Structures*. doi: https://doi.org/ 10.1016/j.compstruct.2018.12.020%0AThis.
- 2019. "Effects of Mechanical Properties of Adhesive and CFRP on the
 Bond Behavior in CFRP-Strengthened Steel Structures." *Composite Structures* 211: 163–74.
- Liew, J Y Richard, V Thevendran, N E Shanmugam, and L O Tan. 1995.

 "Behaviour and Design of Horizontally Curved Steel Beams." 32: 37–67.
- Linghoff, D., Al-Emrani, M. 2010. "Performance of Steel Beams Strengthened with CFRP Laminate Part 2: FE Analyses." *Composites Part B* 41(7): 516–22. http://dx.doi.org/10.1016/j.compositesb.2009.07.002.
- Liu F, Zhang Z, Xu L and Tang M. 2012. "Study on the Resistance of Ultraviolet Radiation of Composite Materials Based on Epoxy Resin." *Adv Mater Res* (391–392): 812–16.
- Lo, C.F. and Conway, H.D. 1967. "The Elastic Stability of Curved Beams."

 International Journal of Mechanical Sciences 09: 527–38.
- Lu, X.Z., Teng, J.G., Ye, L.P. and Jiang, J.J. 2005. "Bond-Slip Model for FRP Sheets/Plates Bonded to Concrete." *Engineering Structures* 27(6): 920–37.
- Luu, A.-T. and Lee, J. 2016. "Non-Linear Buckling of Elliptical Curved Beams." *International Journal of Non-Linear Mechanics* 82: 132–43.
- Madhavan, M., V. Sanap, R. Verma, and S. Selvaraj. 2015. "Flexural Strengthening of Structural Steel Angle Sections Using CFRP: Experimental Investigation."

 Journal of Composites for Construction: 1–10.
- Mahmoud, Karam, and Ehab El-Salakawy. 2012. "Behavior of Full-Scale Railway

- Turnout Sleepers from Glue-Laminated Fiber Composite Sandwich Structures." *Journal of Composites for Construction* 16(December): 724–36.
- Mamalis, A. G., D. E. Manolakos, M. B. Ioannidis, and P. K. Kostazos. 2006. "Bending of Cylindrical Steel Tubes: Numerical Modelling." *International Journal of Crashworthiness* 11(1): 37–47.
- Mays, G.C. and Hacinson, A.R. 1992. *Adhesives in Civil Engineering*. Cambridge University Press, Cambridge, England.
- Mays, Geoffrey and Hutchinson, A. R. 1992. *Adhesives in Civil Engineering*.

 Cambridge [England]: Cambridge University Press.
- Md Humayun Kabir. 2015. ENVIRONMENTAL DURABILITY STUDY OF CFRP

 STRENGTHENED STEEL TUBULAR STRUCTURES UNDER FOUR-POINT

 BENDING. PhD Thesis, Queensland University of Technology.
- Miller, T.C., Chajes, M.J., Mertz, D.R., and Hasting, J.N. 2001. "Strengthening of Steel Bridge Girders Using CFRP Plates." *Journal of Bridge Engineering* 6(6): 523–28.
- Miller, By Trent C et al. 2001. "Strengthening of a Steel Bridge Girder Using CFRP Plates." *Journal of Bridge Engineering* 6(December): 514–22.
- Mirmiran, A. and Wolde-Tinsae, A.M. 1993. "Buckling and Postbuckling of Prestressed Sandwich Arches." *Journal of Structural Engineering, ASCE* 119(01): 262–78.
- Mitsui, Kazuya et al. 2017. "Experimental Analysis and FE Modeling of Square

 Hollow Sections under Combined Axial and Bending Loads." *Eurosteel* 1(2):

 4732–39.

- Miyake, S., Nonaka, M. and Tosaka, N. 1991. "An Integral Equation Method for Geometrically Nonlinear Bending Problem of Elastic Circular Arch." *Boundary Integral Methods, Springer-Verlag*: 349–58.
- Moy, S. S. J., Hill, P., Moriarty, J., Dier, A. F., Kenchington, A. and Iverson, B. 2001. "Strengthening of Tunnel Supports Using Carbon Fibre Composites." Proceedings of the I MECH E Part L Journal of Materials: Design and Applications 215(4): 235–43.
- Naghipour, P. et al. 2009. "Fracture Simulation of CFRP Laminates in Mixed Mode Bending." *Engineering Fracture Mechanics* 76(18): 2821–33. http://dx.doi.org/10.1016/j.engfracmech.2009.05.009.
- Nakai, H., and Yoo, C. H. 1988. *Analysis and Design of Curved Steel Bridges*.

 McGraw-Hill, New York.
- Narmashiri, Kambiz, Mohd Zamin Jumaat, and N H Ramli Sulong. 2010.

 "Investigation on End Anchoring of CFRP Strengthened Steel I-Beams."

 International Journal of Physical Sciences 5(9): 1360–71.
- Narmashiri, Kambiz, N H Ramli Sulong, and Mohd Zamin Jumaat. 2011. "Flexural Strengthening of Steel I-Beams by Using CFRP Strips." *International Journal of the Physical Sciences* 6(7): 1620–27.
- Narmashiri, Kambiz, N H Ramli Sulong, and Mohd Zamin. 2012. "Failure Analysis and Structural Behaviour of CFRP Strengthened Steel I-Beams." *Construction and Building Materials* 30: 1–9. http://dx.doi.org/10.1016/j.conbuildmat.2011.11.009.
- De Nève, B. and Shanahan, M. E. R. 1992. "Effects of Humidity on an Epoxy Adhesive." *International Journal of Adhesion and Adhesives* 12(3): 191–96.

- Nguyen, T. C., Bai, Y., Zhao, X. L. and Al-Mahaidi, R. "Durability of Steel/CFRP Double Strap Joints Exposed to Sea Water, Cyclic Temperature and Humidity." *Composite Structures* 94(5): 1834–45.
- Nishida S, Yoshida H, Fukumoto Y. 1978. "Large Deflection Analysis of Curved Members with Thin-Walled Open Cross-Section." In *24th Symposium of Structural Engineering*, , 77–84.
- Noor, A.K., Greene W.H. and Hartley, S.J. 1977. "Nonlinear Finite Element

 Analysis of Curved Beams." *Computer Methods in Applied Mechanics and Engineering* 12: 289–307.
- Noor, A.K. and Peters, J.M. 1981. "Mixed Models and Reduced/Selective

 Integration Displacement Models for Nonlinear Analysis of Curved Beams."

 International Journal for Numerical Methods in Engineering 17: 615–31.
- Nozaka, K., Shield, C.K., and Hajjar, J.F. 2005. "Effective Bond Length of Carbon-Fibre-Reinforced Polymer Strips Bonded to Fatigued Steel Bridge I-Girders." *Journal of Bridge Engineering* 10(2): 195–205.
- Park, Kyoungsoo, Kyungsu Ha, Habeun Choi, and Changjoon Lee. 2015. 63 Cement and Concrete Composites *Prediction of Interfacial Fracture between Concrete and Fiber Reinforced Polymer (FRP) by Using Cohesive Zone Modeling*. Elsevier Ltd. http://dx.doi.org/10.1016/j.cemconcomp.2015.07.008.
- Patodi, S.C. and Buragohain, D.N. 1979. "Geometric Nonlinear Analysis of Structures by Discrete Energy Method." *IABSE Proceedings* P-20/70: 1–12.
- Pi, Y.-L., Bradford, M.A., and Uy, B. 2002. "In-Plane Stability of Arches." *International Journal of Solids and Structures* 39(02): 105–25.
- Pi, Y.-L. and Trahair, N.S. 1996. "Three-Dimensional Nonlinear Analysis of Elastic

- Arches." Engineering Structures 18: 49–63.
- Pi, Y.L. and Bradford, M.A. 2004. "In-Plane Strength and Design of Fixed Steel I-Section Arches." *Engineering Structures* 26(03): 291–301.
- Pi, Y.L. and Trahair, N.S. 1996. "In-Plane Inelastic Buckling and Strength of Steel Arches." *Journal of Structural Engineering, ASCE* 122(07): 734–47.
- ——. 1999. "In-Plane Buckling and Design of Steel Arches." *Journal of Structural Engineering, ASCE* 125(11): 1291–98.
- Pi, By Yong-lin, Mark A Bradford, and Nicholas S Trahair. 2000a. "Inelastic

 Analysis and Behavior of Steel I-Beams Curved in Plan." *Journal of Structural*Engineer- ing 126(July): 772–79.
- ———. 2000b. "INELASTIC ANALYSIS AND BEHAVIOR OF STEEL I-BEAMS CURVED IN PLAN." *JOURNAL OF STRUCTURAL ENGINEERING* 126(July): 772–79.
- Pi, Yong Lin, Mark Andrew Bradford, and Francis Tin-Loi. 2008. "In-Plane Strength of Steel Arches." *Advanced Steel Construction* 4(4): 306–22.
- Rabinovitch, O. and Frostig, Y. 2000. "Closed-for High-Order Analysis of RC Beams Strengthened with FRP Strips." *Journal of Composites for Construction* (4(2)): 65–74.
- Rathnaweera, Gayan, Yvonne Durandet, Dong Ruan, and Michael Hajj. 2012.

 "Performance of Advanced High Strength Steel and Aluminium Alloy Tubes in Three-Point Bending." *Sustainable Automotive Technologies* 2012 61(03): 25–32.
- Reddy, B.D. and Volpi, M.B. 1992. "Mixed Finite Element Methods for the Circular

- Arch Problem." Computer Methods in Applied Mechanics and Engineering 97: 125–45.
- Reddy, J.N. and Sing, I.R. 1981. "Large Deflections and Large-Amplitude Free

 Vibrations of Straight and Curved Beams." *nternational Journal for Numerical*Methods in Engineering 17: 829–52.
- Ren, Qing-xin, Lin-hai Han, Chao Hou, and You-xing Hua. 2017. "Experimental Behaviour of Tapered CFST Columns under Combined Compression and Bending." *JCSR* 128: 39–52. http://dx.doi.org/10.1016/j.jcsr.2016.08.005.
- S S J Moy, P Hill, J Moriarty, A F Dier, A Kenchington and B Iverson. 2001.

 "Strengthening of Tunnel Supports Using Carbon _bre Composites." In *Proc Instn Mech Engrs, Vol 215 Part L*, , 235–42.
- Sabir, A.B. and Lock, A. C. 1973. "Large Deflexion, Geometrically Non-Linear Finite Element Analysis of Circular Arches." *International Journal of Mechanical Sciences* 15: 37–47.
- Sallam, H.E.M., Ahmad, S.S.E., Badawy, A.A.M., And Mandouh, W. 2006. "Evaluation of Steel I Beams Strengthened by Various Plating Methods." Advances in Structural Engineering 9(4): 535–44.
- Schenerch, D., Dawood, M., Rizkalla, S. and Sumner, E. 2007. "Proposed Design Guidelines for Strengthening of Steel Bridges with FRP Materials."

 Construction and Building Materials 21(5): 1001–10.
- Schnerch, D. A. 2005a. Strengthening of Steel Structures with High Modulus

 Carbon Fiber Reinforced Polymer (CFRP) Materials. PhD by Thesis,

 Department of Civil, Construction and Environmental Engineeirng, Raleigh,

 North Carolina.

- 2005b. Strengthening of Steel Structures with High Modulus Carbon Fiber
 Reinforced Polymer (CFRP) Materials. PhD by Thesis, Department of Civil,
 Construction and Environmental Engineeirng, Raleigh, North Carolina.
- Schnerch, D et al. 2005. "BOND BEHAVIOR OF CFRP STRENGTHENED

 STEEL BRIDGES." In *Proceedings of International Symposium on Bond*Behaviour of FRP in Structures (BBFS 2005), International Institute for FRP in Construction.
- Schnerch, D, M Dawood, S Rizkalla, and E Sumner. 2007. "Proposed Design Guidelines for Strengthening of Steel Bridges with FRP Materials."

 Construction and Building Materials 21: 1001–10.
- Schnerch, David, and Sami Rizkalla. 2008. "Flexural Strengthening of Steel Bridges with High Modulus CFRP Strips." *Journal of Bridge Engineering* 13(2): 192–201.
- Schreyer, H.L. and Masur, E.F. 1966. "Buckling of Shallow Arches." *Journal of the Engineering Mechanic Division, ASCE* 92(04): 1–20.
- Seica, Michael V., and Jeffrey A. Packer. 2007. "FRP Materials for the Rehabilitation of Tubular Steel Structures, for Underwater Applications."

 Composite Structures 80(3): 440–50.
- Selvaraj, Sivaganesh et al. 2013. "Experimental Studies on Strength and Stiffness Enhancement in CFRP-Strengthened Structural Steel Channel Sections under Flexure." *Journal of Composites for Construction*: 1–12.
- ——. 2019. "Strengthening of Laterally Restrained Steel Beams Subjected to Flexural Loading Using Low-Modulus CFRP." *Journal of Performance of Constructed Facilities* 33(3): 1–15.

- Selvaraj, Sivaganesh, A M Asce, Mahendrakumar Madhavan, and M Asce. 2020. "Design of Steel Beams Strengthened with Low-Modulus CFRP Laminates." 24(1): 1–14.
- Selvaraj, Sivaganesh, and Mahendrakumar Madhavan. 2017. "CFRP Strengthened Steel Beams: Improvements in Failure Modes and Performance Analysis." Structures. http://dx.doi.org/10.1016/j.istruc.2017.08.008.
- ——. 2019. "Retro Fitting of Steel Beams Using Low-Modulus Carbon Fi Ber Reinforced Polymer Laminates." *Journal of Constructional Steel Research*. https://doi.org/10.1016/j.jcsr.2019.105825.
- Sen, Rajan, Larry Liby, and Gray Mullins. 2001. "Strengthening Steel Bridge Sections Using CFRP Laminates." 32: 309–22.
- Serror, Mohammed H, Essam G Soliman, and Ahmed F Hassan. 2017. "Numerical Study on the Rotation Capacity of CFRP Strengthened Cold Formed Steel Beams." *Steel and Composite Structures* 4: 385–97.
- Shaat, Amr, and Amir Fam. 2006. "Axial Loading Tests on Short and Long Hollow Structural Steel Columns Retrofitted Using Carbon Fibre Reinforced Polymers." *Canadian Journal of Civil Engineering* 33(4): 458–70. http://www.nrcresearchpress.com/doi/abs/10.1139/l05-042.
- Shabila, H. I. 2005. Strength and Durability Assessment of Flexure and Axial RC

 Members Strengthened with Carbon Fiber Polymer. PhD by Thesis, Civil

 Engineering, The Graduate College, University of Illinois.
- Shanmugam, N. E., V. Thevendran, J. Y. Richard Liew, and L. O. Tan. 1995.

 "Experimental Study on Steel Beams Curved in Plan." *Journal of Structural Engineering* 121(2): 249–59.

- http://ascelibrary.org/doi/10.1061/%28ASCE%290733-9445%281995%29121%3A2%28249%29.
- Shen, H.S., Teng, J.G., and Yang, J. 2001. "Interfacial Stresses in Beams and Slabs Bonded with Thin Plate." *Journal of Engineering Mechanics* 127(4): 399–406.
- Sika adhesive group. 2009. Product Data Sheet(Sika-31).
- Silvestre, N., Young, B., and Camotim, D. 2008. "Non-Linear Behaviour and Load Carrying Capacity of CFRP-Strengthend Lipped Channel Steel Columns."

 Engineering Structures 30(10): 2613–30.
- Singha K. 2012. "A Short Review on Basalt Fiber." Int. J. Text. Sci. 1(4): 19–28.
- Sitnikova, Elena et al. 2019. "On the Representativeness of the Cohesive Zone

 Model in the Simulation of the Delamination Problem." *Journal of Composites*Science 3(1): 22.
- Siwowski, Tomasz W, and Paulina Siwowska. 2018. "Experimental Study on CFRP-Strengthened Steel Beams." *Composites Part B*. https://doi.org/10.1016/j.compositesb.2018.04.060.
- Smith, S.T. and Teng, J.G. 2001. "Interfacial Stresses in Plated Beams." Engineering Structures 23(7): 857–71.
- SMRITI RAJ, V RAMESH KUMAR, B H BHARATH KUMAR and NAGESH R

 IYER. 2016. "Basalt: Structural Insight as a Construction Material." *Indian*Academy of Sciences.
- Soudki, Khaled, and Ann Schumacher. 2009. "FLEXURAL STRENGTHENING

 OF A STEEL BEAM WITH PRESTRESSED CFRP STRIPS —

 PRELIMINARY INVESTIGATION." In FRPRCS-9 Sydney, Austrailia, , 13—

- Srpčič, S. and Saje, M. 1986. "Large Deformations of Thin Curved Plane Beam of Constant Initial Curvature." *International Journal of Mechanical Sciences* 28: 275–87.
- Stolarski, H. and Belytschko, T. 1982. "Membrane Locking and Reduced Integration for Curved Elements." *Journal of Applied Mechanics, ASME* 49: 172–76.
- Sun, C.T., and Z.-H. Jin. 2012. "Cohesive Zone Model." *Fracture Mechanics*: 227–46.
- Sundaramoorthy Rajasekaran and S. Padmanabhan. 1989. "EQUATIONS OF CURVED BEAMS." *J. Eng. Mech.* 115(5): 1094–1111.
- Sundarraja, M. C., and G. Ganesh Prabhu. 2012. "Experimental Study on CFST Members Strengthened by CFRP Composites under Compression." *Journal of Constructional Steel Research* 72: 75–83. http://dx.doi.org/10.1016/j.jcsr.2011.10.014.
- Sundarraja, M. C., P. Sriram, and G. Ganesh Prabhu. 2014. "Strengthening of Hollow Square Sections under Compression Using FRP Composites."

 Advances in Materials Science and Engineering 2014.
- Surana, K.S. and Sorem, R.M. 1989. "Geometrically Non-Linear Formulation for Three Dimensional Curved Beam Elements with Large Rotations."

 International Journal for Numerical Methods in Engineering 28: 43–73.
- Tao, Zhong, Lin-hai Han, and Jin-ping Zhuang. 2007. "Axial Loading Behavior of CFRP Strengthened Concrete-Filled Steel Tubular Stub Columns." *Advances in Structural Engineering* 10(1): 37–46.

- Tao, Zhong, and Lin Hai Han. 2007. "Behaviour of Fire-Exposed Concrete-Filled Steel Tubular Beam Columns Repaired with CFRP Wraps." *Thin-Walled Structures* 45(1): 63–76.
- Tao, Zhong, Lin Hai Han, and Ling Ling Wang. 2007. "Compressive and Flexural Behaviour of CFRP-Repaired Concrete-Filled Steel Tubes after Exposure to Fire." *Journal of Constructional Steel Research* 63(8): 1116–26.
- Tavakkolizadeh, M. and Saadatmanesh, H. 2001. "Galvanic Corrosion of Carbon and Steel in Aggressive Environments." *Journal of Composites for Construction* 5(3): 200–210.
- Teng, J. G., Fernando, D., Zhao, X. L. and Yu, T. 2013. "Preparation and Characterization of Steel Surfaces for Adhesive Bonding." of Composites for Construction 17.
- Teng, J. G., D. Fernando, and T. Yu. 2015a. "Finite Element Modelling of Debonding Failures in Steel Beams Flexurally Strengthened with CFRP Laminates." *Engineering Structures* 86: 213–24.
- Teng, J. G., and Y. M. Hu. 2007. "Behaviour of FRP-Jacketed Circular Steel Tubes and Cylindrical Shells under Axial Compression." *Construction and Building Materials* 21(4): 827–38.
- Teng, J. G., T. Yu, and D. Fernando. 2012a. "Strengthening of Steel Structures with Fiber-Reinforced Polymer Composites." *Journal of Constructional Steel Research* 78: 131–43.
- Teng, J G, D Fernando, and T Yu. 2015b. "Finite Element Modelling of Debonding Failures in Steel Beams Flexurally Strengthened with CFRP Laminates."

 Engineering Structures 86: 213–24.

- Teng, J G, T Yu, and D Fernando. 2012b. "Strengthening of Steel Structures with Fi Ber-Reinforced Polymer Composites." *Journal of Constructional Steel Research* 78: 131–43.
- Trethewey, Kenneth R. and Chamberlain, John. 1988. *Corrosion: For Students of Science and Engineering*. Harlow, England: Longman Scientific & Technical.
- Tu, Haoyun. 2018. "The Cohesive Zone Model." In Numerical Simulation and Experimental Investigation of the Fracture Behaviour of an Electron Beam Welded Steel Joint, Springer International Publishing, 97–117.
- Viveka, V, B Shanmugavalli, and M C Sundarraja. 2014. "Analytical Investigation on the Compressive Behaviour of CHS Tubular Columns Strengthened Using FRP Composites." *International Journal of Civil Engineering Research* 5(4): 2278–3652. http://www.ripublication.com/ijcer.htm.
- Walker A.C. 1974. "A Non-Linear Finite Element Analysis of Shallow Circular Arches." *Computers & Structures* 04: 559–80.
- Wang, Q.-L., J. Li, Y.-B. Shao, and W.-J. Zhao. 2015. "Flexural Performances of Square Concrete Filled CFRP-Steel Tubes (S-CF-CFRP-ST)." *Advances in Structural Engineering* 18(8): 1319–44.
- Wang, Zhi Bin, Qing Yu, and Zhong Tao. 2015. "Behaviour of CFRP Externally-Reinforced Circular CFST Members under Combined Tension and Bending."
 Journal of Constructional Steel Research 106: 122–37.
 http://dx.doi.org/10.1016/j.jcsr.2014.12.007.
- Wardenier, J. 2001. "HOLLOW SECTIONS Hollow Sections in Structural Applications." *Technology*: 199.
- West, T.D. 2001. "Enhancements to the Bond between Advanced Composite

- Materials and Steel for Bridge Rehabilitation." *Materials science*.
- Wong, Yee-Chit. 1970. "HORIZONTALLY CURVED BEAM ANALYSIS AND DESIGN." A thesisi submitted to Oregon State University.
- Wu, Chao, Li He, Elyas Ghafoori, and Xiao-ling Zhao. 2018. "Torsional Strengthening of Steel Circular Hollow Sections (CHS) Using CFRP Composites." *Engineering Structures* 171: 806–16.
- Xenidis, H., Morfidis, K. and Papadopoulos, P.G. 2013. "Nonlinear Analysis of Thin Shallow Arches Subject to Snap-through Using Truss Models." *Structural Engineering and Mechanics* 45: 521–42.
- Xia, S.H., and Teng, J.G. 2005. "Behaviour of FRP-to-Steel Bonded Joints." In Proceedings, International Symposium on Bond Behaviour of FRP in Structures, Hong Kong, China.
- Yang, j. and Ye, J.Q. 2010. "An Improved Closed-Form Solution to Interfacial Stresses in Plated Beams Using a Two-Stage Approach." *International journal of mechanical sciences* 52(1): 13–30.
- Yang, Zhibo et al. 2014. "The Analysis of Curved Beam Using B-Spline Wavelet on Interval Finite Element Method." *Shock and Vibration* 2014.
- Yao, J., Teng, J.G. and Chen, J.F. 2005. "Experimental Study on FRP-to Concrete Bonded Joints." *Composites Part B: Engineering* 36(2): 99–113.
- Yoo, C. H., and Heins, C. P. 1972. "Plastic Collapse of Horizontally Curved Bridge Girders." *J. Struct. Div.*, *ASCE* 98(4): 899–914.
- Yoo Chai H, Davidson James S. 1997. "Yield Interaction Equations for Nominal Bending Strength of Curved I-Girders." *J Bridge Eng, ASCE* 2(2): 37–44.

- Yoshida, By Hiroshi, and Kouji Maegawa. 1983. "Ultimate Strength Analysis of Curved I-Beams." 109(1): 192–214.
- Yu, Y, S P Chiew, and C K Lee. 2011. "Bond Failure of Steel Beams Strengthened with FRP Laminates Part 2: Verification." *Composites: Part B* 42: 1122–34.
- Yuan, H. and Wu, Z. 1999. "Theoratical Solutions on Interfacial Stress Transfer of Externally Bonded Steel/Composite Laminates." In *Proceedings of the Symposium of China and Japan: Science and Technology of 21st Century*, Tokyo.
- Zhang, L. and Teng, J.G. 2010. "Finite Element Prediction of Interfacial Stresses in Structural Members Bonded with s Thin Plate." *Engineering Structures* 32: 459–71.
- Zhang, Zhujing et al. 2018. "Cyclic Performance of Bonded Sleeve Beam-Column Connections for FRP Tubular Sections." *Composites Part B: Engineering* 142: 171–82. https://doi.org/10.1016/j.compositesb.2018.01.024.
- Zhang, Zong-xing, Shan-hua Xu, Lin Mu, and Sheng-yuan Peng. 2020.
 "Experimental and Theoretical Investigation on Flexural Behavior of Corroded
 Steel Beams Strengthened by CFRP Plate." KSCE Journal of Civil Engineering
 24(7): 2160–72.
- Zhao, X. L., Fernando, D., and Al-Mahaidi, R. 2006. "CFRP Strengthened RHS Subjected to Transverse End Bearing Force." *Engineering Structures* 28(11): 1555–65.
- Zhao, Ou et al. 2015. "Experimental and Numerical Studies of Ferritic Stainless Steel Tubular Cross Sections under Combined Compression and Bending." *Journal of Structural Engineering, ASCEng.*

- Zhao, Xiao Ling, and Lei Zhang. 2007. "State-of-the-Art Review on FRP Strengthened Steel Structures." *Engineering Structures* 29(8): 1808–23.
- Zhou, Feng, and Ben Young. 2007. "Experimental and Numerical Investigations of Cold-Formed Stainless Steel Tubular Sections Subjected to Concentrated Bearing Load." *Journal of Constructional Steel Research* 63(11): 1452–66.
- Zojaji, A. R., and M. Z. Kabir. 2011. "Analytical Approach for Predicting Full
 Torsional Behavior of Reinforced Concrete Beams Strengthened with FRP
 Materials." *Scientia Iranica* 19(1): 51–63.
 http://dx.doi.org/10.1016/j.scient.2011.12.004.