



Professor Wen Hui Duan

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<http://eng.monash.edu.au/civil/about/people/profile/whduan>

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Structures Engineering
Monash University

Biography:

Dr. Duan graduated from Tianjin University (China) in engineering mechanics with BEng and MEng in 1997 and 2002, respectively. He received his PhD from the National University of Singapore (Singapore) in Civil Engineering in April 2006. From 1997 to 1999, he worked in the field of assessment and rehabilitation of bridge and road as well as assessment of pile foundation as a structural engineer in Tianjin Municipal and Highway Research Institute, China. Starting from Feb. 2006, He worked as post-doctoral fellow in Singapore and Canada. He recently joined Monash University as a Lecturer in Nov 2008.

Research Interests:

Nano-materials and nano-mechanics
graphene reinforced epoxy/cement/concrete composites;
carbon nanotube reinforced epoxy/cement/concrete composites;
high strain rate effect;

Selected Publications:

WH Duan, ST Quek, Q Wang, “Generalized hypergeometric function solutions for transverse vibration of a class of non-uniform annular plates”, Journal of sound and vibration 287 (4), 785-807, 2005

WH Duan, ST Quek, Q Wang, "Free vibration analysis of piezoelectric coupled thin and thick annular plate", *Journal of sound and vibration* 281 (1), 119-139, 2005

WH Duan, CM Wang, YY Zhang, "Calibration of nonlocal scaling effect parameter for free vibration of carbon nanotubes by molecular dynamics", *Journal of applied physics* 101 (2), 024305, 2007

Q Wang, WH Duan, KM Liew, XQ He, "Inelastic buckling of carbon nanotubes", *Applied physics letters* 90, 033110, 2007

Q Wang, KM Liew, WH Duan, "Modeling of the mechanical instability of carbon nanotubes", *Carbon* 46 (2), 285-290, 2008

CM Wang, WH Duan, "Free vibration of nanorings/arches based on nonlocal elasticity", *Journal of Applied Physics* 104 (1), 014303, 2008

WH Duan, CM Wang, "Exact solution for buckling of columns including self-weight", *Journal of engineering mechanics* 134, 116, 2008

WH Duan, CG Koh, "Axisymmetric transverse vibrations of circular cylindrical shells with variable thickness", *Journal of Sound and Vibration* 317 (3), 1035-1041, 2008

YY Zhang, CM Wang, WH Duan, Y Xiang, Z Zong, "Assessment of continuum mechanics models in predicting buckling strains of single-walled carbon nanotubes", *Nanotechnology* 20, 395707, 2009

WH Duan, CM Wang, "Nonlinear bending and stretching of a circular graphene sheet under a central point load", *Nanotechnology* 20, 075702, 2009

WH Duan, Q Wang, Q Wang, KM Liew, "Modeling the instability of carbon nanotubes: from continuum mechanics to molecular dynamics", *Journal of Nanotechnology in Engineering and Medicine* 1 (1), 011001, 2010

WH Duan, K Gong, Q Wang, "Controlling the formation of wrinkles in a single layer graphene sheet subjected to in-plane shear", *Carbon*, 2011

CM Wang, ZY Tay, ANR Chowdhury, WH Duan, YY Zhang, N Silvestre, "Examination of cylindrical shell theories for buckling of carbon nanotubes", *International Journal of Structural Stability and Dynamics* 11 (06), 1035-1058, 2011

C Wu, XL Zhao, WH Duan, "Design rules for web crippling of CFRP strengthened aluminium rectangular hollow sections", *Thin-Walled Structures*, 2011

AH Korayem, WH Duan, XL Zhao, "Investigation on buckling behavior of short MWCNT", *Procedia Engineering* 14, 250-255, 2011

Z Zhang, W Duan, CM Wang, "Tunable wrinkling pattern in annular graphene under circular shearing at inner edge", *Nanoscale*, 2012

AH Korayem, WH Duan, XL Zhao, CM Wang, "Buckling behavior of short multi-walled carbon nanotubes under axial compression loads", *International Journal of Structural Stability and Dynamics* 12 (06), 1250045, 2012

D Shi, Q Wang, VK Varadan, W Duan, "Buckling and Vibration of Carbon Nanotubes Embedded in Polyethylene Polymers", *Journal of Nanotechnology in Engineering and Medicine* 3 (2), 020905, 2012

Z Zhang, WH Duan, CM Wang, "A grillage model for predicting wrinkles in annular graphene under circular shearing", *Journal of Applied Physics* 113 (1), 014902, 2013