



Professor Teng Yong Ng (T.Y. Ng)

Hua Li, Khin-Yong Lam and Teng-Yong Ng, Rotating Shell Dynamics, Elsevier Studies in Applied Mechanics, 2005, 284 pages

See:

http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=MTYNG

https://www.researchgate.net/profile/Teng_Ng

http://web.mit.edu/smart/research/biosym/dir_biosym%20-%20Ng%20Teng%20Yong.html

<http://www.scirp.org/journal/DetailedInforOfEditorialBoard.aspx?personID=9334>

School of Mechanical & Aerospace Engineering
Nanyang Technological University (NTU), Singapore

Education:

PhD National University of Singapore 1999

MEng National University of Singapore 1996

BEng(Hons) National University of Singapore 1992

Biography:

Dr T.Y. Ng joined NTU as an Assistant Professor in November 2002. Prior to that, he was Research Manager at the A*STAR Institute of High Performance Computing (IHPC). His research interest is in numerical modeling and simulation. He is currently in the Aerospace Engineering Division of the School of MAE, and he was promoted to Associate Professor in 2005.

Positions:

Jun 1997-Mar 1998 Research Engineer, Centre for Computational Mechanics, National University of Singapore (NUS)

Apr 1998-Oct 1998 Research Manager, Centre for Computational Mechanics, NUS

Nov 1998-Oct 2002 Research Manager, Computational MEMS Division, A*STAR IHPC
Nov 2002-Sep 2005 Assistant Professor of Mechanical & Aerospace Engineering, NTU
Oct 2005-Present Associate Professor of Mechanical & Aerospace Engineering, NTU

Honors:

Finalist in the Singapore National Academy of Science Young Scientist Award for 3 Consecutive Years (2000, 2001 & 2002)

Special Commendation in the National University of Singapore Young Researcher Award, 2002.

Research Interests:

Variational and Finite Element Techniques for Structural Analysis; Dynamic Stability, Vibration and Control of Plates and Shells; Composite Laminates and Functionally Graded Materials; Smart Materials: Piezoelectric / Magnetostrictive / Shape Memory Alloys; Development of Meshless (Element-Free) Techniques; Mathematical Modeling of Hydrogel-Based BioMEMS Devices; Computational Nano-Science - Multiscale Simulation; Modeling and Simulation of Quantum Dot Growth and Characteristics; Chaos and Control of Nonlinear Dynamic Systems; Structural Optimization - via Genetic Algorithms (GA); Nanomedicine Modeling (Nanoparticle Drug/Gene Delivery Systems)

Selected Publications:

K.Y. Lam and T.Y. Ng, "Dynamic stability of cylindrical shells subjected to conservative periodic axial loads using different shell theories", *Journal of Sound and Vibration*, Vol. 207, No. 4, pp 497-520, 1997

T.Y. Ng and K.Y. Lam, "Effects of boundary conditions on the parametric resonance of cylindrical shells under axial loading", *Shock and Vibration*, Vol. 5, pp 343-354, 1998

T.Y. Ng, K.Y. Lam, and J.N. Reddy, "Dynamic stability of cross-ply laminated composite cylindrical shells", *International Journal of Mechanical Sciences*, Vol. 40, No. 8, August 1998, pp. 805-823

Ng, T.Y., Lam, K.Y., Reddy, J.N.: Parametric resonance of a rotating cylindrical shell subjected to periodic axial loads. *J. Sound Vib.* 214, 513-529 (1998)

T.Y. Ng and K.Y. Lam, "Dynamic stability analysis of cross-ply laminated cylindrical shells using different thin shell theories", *Acta Mechanica*, Vol. 134, Nos. 3-4, pp 147-167, 1999

Ng, T.Y., Lam, K.Y., Reddy, J.N., Dynamic stability of cylindrical panels with transverse shear effects (1999) *Int J Solids Struct*, 36, pp. 3483-3496

Ng, T.Y. and Lam, K.Y. (1999), "Effects of elastic foundation on the dynamic stability of cylindrical shells", *Struct. Eng. Mech., Int. J.*, 8(2), 193-205.

Lam, K. Y.; Ng, T. Y.; and Wu, Q.: Vibration Analysis of Thick Laminated Composite Cylindrical Shells. *AIAA Journal*, vol. 38, no. 6, 1999, pp. 1102-1107.

Ng, T.Y., Lam, K.Y.: Vibration and critical speed of a rotating cylindrical shell subjected to axial loading. *Appl. Acoust.* 56, 273-282 (1999)

T.Y. Ng, H. Li, K. Y. Lam, C. T. Loy, "Parametric Instability of Conical Shells by the Generalized Differential Quadrature Method", *International Journal of Numerical Method Engineering*, vol. 44, pp. 819-837, 1999.

T. Y. Ng and K. Y. Lam, "Free Vibrations Analysis of Rotating Circular Cylindrical Shells on an Elastic Foundation," *Journal of Vibration and Acoustics*, Vol. 122, No. 1, 2000, pp. 85-89.

T. Y. Jiang, T. Y. Ng, and K. Y. Lam, Dynamic analysis of an electrostatic micropump, 3rd International Conference on Modeling and Simulation of Microsystems, MSM2000 California 2000.

T.Y. Ng, K.Y. Lam, K.M. Liew, Effect of FGM materials on the parametric resonance of plate structures, *Comput. Methods Appl. Mech. Engrg.* 190 (2000) 953-962.

T. Y. Ng, K. Y. Lam, K.M. Liew, and J. N. Reddy, "Dynamic stability analysis of functionally graded

cylindrical shells under periodic axial loading,” *Int. J. Solids Struct.*, 38, 1295–1309 (2001).

K. M. Liew, X. Q. He, T. Y. Ng, and S. Sivashanker. Active control of FGM plates subjected to a temperature gradient: Modeling via finite element method based on FSDT. *International Journal for Numerical Methods in Engineering*, 52:1253–1271, 2001.

Liew, K. M., He, X. Q., Ng, T. Y., Kitipornchai, S. 2002 Active control of FGM shell subjected to a temperature gradient via piezoelectric sensor/actuator patches *Int. J. Num. Meth. Engng.*55, 653-668

T. Y. Ng, X. Q. He and K. M. Liew, “Finite element modeling of active control of functionally graded shells in frequency domain via piezoelectric sensors and actuators”, *Computational Mechanics*, Vol. 28, No. 1, pp 1-9, February 2002

He, X. Q., Liew, K. M., Ng, T. Y., Sivashanker, A. 2002 An FEM model for the active control of curved FGM shells using piezoelectric sensor/actuator layers *Int. J. Num. Meth. Engng.*54853870

K.M. Liew, T.Y. Ng, J.Z. Zhang, Differential quadrature-layerwise modeling technique for three dimensional analysis of cross-ply laminated plates of various edge supports, *Comput. Methods Appl. Mech. Engrg.* 191 (2002), 3811–3832.

K. Y. Lam, H. Li, T. Y. NG, C. F. Chua, “Generalized Differential Quadrature Method for the Free Vibration of Truncated Conical Panels”, *Journal of Sound and Vibration*, vol. 251, pp. 329-348, 2002.

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Zhao, X., Liew, K.M., Ng, T.Y.: Vibration of rotating cross-ply laminated circular cylindrical shells with stringer and ring stiffeners. *Int J Solids Struct* 39, 529_545 (2002)

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T.Y. Ng, H. Li, K. Y. Lam, C. F. Chua, “Frequency Analysis of Rotating Conical Panels: A Generalized Differential Quadrature Approach”, *Journal of Applied Mechanics*, vol. 70, pp. 601-605, 2003.

K. M. Liew, J. Wang, T. Y. Ng, and M. J. Tan, Free vibration and buckling analyses of shear-deformable plates based on fsdt meshfree method, *Journal of Sound and Vibration* 2004, 276:997–1017.

Yeak, S. H., Ng, T. Y., and Liew, K. M., 2005, “Multiscale Modeling of Carbon Nanotubes Under Axial Tension and Compression,” *Phys. Rev. B*, 72, p. 165401.

Liew, K. M., Ng, T. Y., and Zhao, X, Free vibration analysis of conical shells via the element-free kp-Ritz method. *Free vibration analysis of conical shells via the element-free kp-Ritz method* 281, 627–645 (2005)

K. M. Liew, Y. G. Hu, T. Y. Ng, and X. Zhao, “Dynamic stability of rotating cylindrical shells subjected to periodic axial loads,” *Int. J. Solids Struct.*, 43, 7553–7570 (2006).

Liew, K.M, Hu, Y.G. Zhao, X and Ng, T.Y. (2006): Dynamic stability analysis of Composite laminated Cylindrical Shells via the mesh-free kp-Ritz method, *Journal of Composite Methods in Applied Mechanics and Engineering*, Vol.196, pp.147-160.

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