



Professor Lam Khin Yong (K. Y. Lam)

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

Chief of Staff, President's Office
Vice President (Research), President's Office
Nanyang Technological University, Singapore

Education:

PhD Massachusetts Institute of Technology 1985
SM Massachusetts Institute of Technology 1982
BSc(Eng)(Hons) University of London, Imperial Coll. 1980

Biography:

Professor Lam Khin Yong is the Chief of Staff at Nanyang Technological University (NTU) and his key responsibility is to assist the President and Provost by ensuring that decisions made by senior academic leaders are well implemented. Prior to his current appointment, he was the Associate Provost for Graduate Education & Special Projects from 2008 to 2011 and the Dean/Chair of the School of Mechanical and Aerospace Engineering from 2006 to 2008. As Associate Provost, he had strategically grown NTU's graduate programmes,

including spearheading joint PhD programmes with top universities overseas.

Professor Lam has held many key academic, research and administrative appointments. These include his appointment as Founding Director of the Centre for Computational Mechanics and the NUS-MINDEF Underwater Shock Laboratory. In addition, he was the Program Director of the IHPC-MINDEF High Performance Computing Centre. He was also the Founding Executive Director of the Institute of High Performance Computing and the Founding Executive Director of the A*Star Graduate Academy.

As Executive Director of A*Star Graduate Academy, he initiated PhD training collaborations between A*Star and universities including NTU, NUS, Karolinska Institutet, Imperial College London, University of Illinois at Urbana-Champaign, University of Dundee, Carnegie Mellon University and University of Cambridge.

In addition, he held directorship positions in the then NSTB and A*Star Holding companies including as Director of ETPL Investment Pte Ltd and KRDL Holdings Pte Ltd. Professor Lam was also the Technical Advisor to Executive Chairman of ETPL, Program Advisor for the High Performance Computation Program at Singapore-MIT Alliance (SMA) and Deputy Director of SMA. He worked with the MD of A*Star and Executive Chairman of ETPL to set up the Managing Director Office and ETPL at A*Star.

For his contributions to Computational Mechanics, he received National/University Awards from NUS and the then NSTB. He was also the first academic to lead a R&D Team to win the MINDEF Defence Technology Prize for contributions in Underwater Shock Technology.

He obtained his first degree in Mechanical Engineering from Imperial College and his Masters and PhD degrees from the Massachusetts Institute of Technology. He also attended the Advanced Management Program at the Harvard Business School. Given his extensive experience in pioneering and leadership roles, Professor Lam is instrumental in positioning NTU in the Campus for Research Excellence And Technological Enterprise (CREATE), an initiative under the National Research Foundation, which brings together world-class international research universities, corporations, Singapore-based universities and research institutions to collaborate and work together. He is also the Co-Scientific Advisory Director for the TUM-CREATE Centre on Electromobility in Megacities.

Research Interests:

Computational mechanics, Development of refined meshless (element-free) techniques. Smart materials modeling for active control. Computational nanoscience/BioMEMS/Hydrogels. Multiscale simulations. Computational methods in engineering.

Selected Publications:

K.Y. Lam and C.T. Loy, Effects of boundary conditions on frequencies of a multi-layered cylindrical shell, *J. Sound and Vibration* 188 (1995), 363–384.

K.Y. Lam and T.Y. Ng (Dept. of Mechanical and Production Engineering, National University of Singapore), “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

K.Y. Lam, L. Hua, Vibration analysis of a rotating truncated circular conical shell, *Int. J. Solids Struct.* 34 (1997) 2183–2197.

L. Hua, K.Y. Lam, Frequency characteristics of a thin rotating cylindrical shell using the generalized

differential quadrature method, *Int. J. Mech. Sci.* 40 (1998) 443–459.

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

S.W. Gong and K.Y. Lam, “Transient response of stiffened composite submersible hull subjected to underwater explosive shock”, *Composite Structures*, Vol. 41, No. 1, pp 27-37, January 1998

C.T. Loy, K.Y. Lam and J.N. Reddy, Vibration of functionally graded cylindrical shells, *International Journal of Mechanical Sciences* 41 (1999), pp. 309–324.

Gong, S.W., K.Y. Lam and J.N. Reddy, 1999. “Elastic Response of Functionally Graded Cylindrical shells to Low –Velocity Impact”, *International Journal of Impact Engineering*, 22(4): 397-417.

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

T.Y. Ng, H. Li, K.Y. Lam, C.T. Loy, Parametric instability of conical shells by the generalized differential quadrature method, *Int. J. Numer. Meth. Engrg.* 44 (1999) 819–837.

Pradhan, S.C., C.T. Loy, K.Y. Lam and J.N. Reddy, 2000. “Vibration Characteristics of Functionally Graded Cylindrical Shells under Various Boundary Conditions”, *Applied Acoustics*, 61(1): 111-129.

L. Hua, K.Y. Lam, The generalized quadrature method for frequency analysis of a rotating conical shell with initial pressure, *Int. J. Numer. Meth. Engrg.* 48 (2000) 1703– 1722.

K.Y. Lam, L. Hua, Influence of initial pressure on frequency characteristics of a rotating truncated circular conical shell, *Int. J. Mech. Sci.* 42 (2000) 213–236.

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.

Ng, T.Y., K.Y. Lam and K.M. Liew, 2001. Dynamic stability analysis of functionally graded cylindrical shells under periodic axial loading. *Int. J. Solids Struct.*, 38(9): 1295-309.

Z. Zong and K.Y. Lam, “Viscoplastic response of a circular plate to an underwater explosion shock”, *Acta Mechanica*, Vol. 148, Nos 1-4, pp 93-104, 2001

L. Hua, K.Y. Lam, Orthotropic influence on frequency characteristics of rotating composite laminated conical shell by the generalized differential quadrature method, *Int. J. Solids Struct.* 38 (2001) 3995–4015.

Han, X., G.R. Liu, Z.C. Xi and K.Y. Lam, 2001. “Transient Waves in a Functionally Graded Cylinder”, *International Journal of Solids and Structures*, 38(17): 3021-3037.

Han, X., G.R. Liu, Z.C. Xi and K.Y. Lam, 2002. "Characteristics of Waves in a Functionally Graded Cylinder", *International Journal for Numerical Methods in Engineering*, 53(3): 653-676

K.Y. Lam, H. Li, T.Y. Ng, C.F. Chua, Generalized differential quadrature method for the free vibration of truncated conical panels, *J. Sound Vib.* 251 (2002) 329–348.

K.Y. Lam, Z. Zong and Q.X. Wang, "Dynamic response of a laminated pipeline on the seabed subjected to underwater shock", *Composites Part B: Engineering*, Vol. 34, No. 1, January 2003, pp. 59-66

S.W. Gong and K.Y. Lam, "On attenuation of floating structure response to underwater shock", *International Journal of Impact Engineering*, Vol. 32, pp 1857-1877, 2006