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BSME: National Cheng Kung Univ., Taiwan, ROC  
MSME: Tufts University, MA, USA  
Ph.D.ME: Carnegie Mellon University, PA, USA  
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University of Oxford, Oxford, UK

**Brief Biography:**

With degrees in Mechanical Engineering, Mike Tsao has worked at Monsanto Chemical Company (Central Engineering Division-Design Engineer), Westinghouse Electric Corporation (R & D Center-Senior Engineer), Science Application International Corp (SAIC- Ultra Image -Division Scientist and Program Manager) and General Dynamics (Electric Boat Corporation-Principal Engineer and Engineer SR). He has worked in the fields of stress analysis of structures, wave propagations in solids, dynamic properties of materials, acoustics and noise controls, refrigeration compressors, ultrasonic imaging, electro-photo process and computer modeling of performance based logistics life cycle cost analysis of systems and components. His research interests include Dynamics, Fluid Dynamics, Thermodynamics, Material Sciences, Nondestructive Testing Methodology Development, Mathematical Simulation and Computer modeling. As a part-time instructor on lectures and labs, he has taught mathematics and engineering science courses at Carnegie Mellon University, University of Oxford, RPI- Hartford Graduate Center, and the University of Connecticut at Avery Point for over ten years. In Technical Societies, he has served as the Chairman of E 7.06.08 Ultrasound (1983 - 2005) in the American Society for Testing and Materials (ASTM) ; Member of US Delegation to ISO TC 135- Nondestructive Testing SC3 (1983 - 1998); Convener - ISO TC 135 SC3 WG1 (1993 - 1998); Associate Technical Editor- Journal of Materials Evaluation (1998- Present); Editor- Communiqué of Electric Boat Management Association (EBMA-1600 members, 1998-2001); Secretary (1998-99) and Chairman (1999-2000) of the American Society for Nondestructive Testing (ASNT) Connecticut Yankee Section; Chairman (2001-2002) of the American Society of Mechanical Engineers (ASME) New London Section; Chairman of Government Relations/ Public Information - ASME Region I (2003-present); Board of Directors of EBMA (2004-2008). He is a Professional Engineer registered in Pennsylvania (License No. PE023966E, 1976-present); a Fellow of ASNT and a Life Fellow of ASME.

In teaching, he wishes to provide students with resources of industrial experiences; in applications of sciences and technology integrated with methods of engineering analyses, problem solving skills, mathematical modeling, optimizations and decision making.

### **Some Publications:**

Campbell, J.D. and M. C. C. Tsao, "On the Theory of Transient Torsional Wave Propagation in a Circular Cylinder," Quarterly Journal of Mechanics and Applied Mathematics, XXV (2) May 1972, p.173-184.

Edward Saibel and M.C.C. Tsao, "Dynamics of Pneumatic Tire Vehicles with Connected Suspension Systems," Journal of Vehicle Mechanics and Mobility, 1(2), November 1972, p.89-122.

J.D. Campbell, A. M. Eleiche and M. C. C. Tsao, "Strength of Metals and Alloys at High Strains and Strain Rates," Fundamental Aspects of Structural Alloy Design, Ed. R. I. Jaffee and Benjamin A. Wilcox, Battelle Institute Materials 10<sup>th</sup> Science Colloquia, Seattle, WA- Harrison Hot Springs, BC, September 15-19, 1975, p. 545-561, Plenum Press, NY.

M.C.C.Tsao, "Thermodynamics of a Hermetic Reciprocating Refrigeration Compressor with MCCT – Piston and Valve System," ASME Transaction, Journal of Mechanical Design, Vol. 103, No. 2, 1981, p.281-288.

M.C.Tsao, "Industrial Ultrasonic Tomography – Principle, Practice and Limitation," Materials Evaluation, October 1983, p.1248-1254.

M.C.Tsao, R.G.Grills, R. P. Simpson and G. A. Andrew, "Ultrasonic Color Imaging and Stress Analysis of Piping Coupler Shrink Fit," Materials Evaluation, Vol. 42, No. 11, 1984, p. 1393-1400.

M.C.Tsao and J.F. Mancuso, "Real-time ultrasonic Weld Inspection Method," US Patent 4,480,475, April 1985.

M.C.Tsao, R.H. Grills and R. P. Simpson, "Ultrasonic Imaging of Component Integrity," Review of Progress in Qualitative Nondestructive Evaluation. Vol. 3A, Ed. Donald O. Thompson and Dale E. Chimenti, 1984, P. 459-466, Plenum Press, NY.

Robert H. Grills and Mike C. Tsao, "Nondestructive Inspection with Portable Ultrasonic Imaging System," with ASTM STP 908, 1987, p. 89-101.

M.C.Tsao, R. H. Grills, R.H. and G.A. Andrew, "Ultrasonic Inspection," with Grills, R.H. and Andrew, G.A., Metals Handbook, 9<sup>th</sup> Ed. Vol. 17, Nondestructive Evaluation and Quality Control, ASM International, 1989, p. 231-277.

Mike C. Tsao, "Measurement and Analysis of Beam Profile in a Solid," Materials Evaluation, 1998, p. 636-644.

Mike C. Tsao, Glenn A. Andrew, A. Bruce Richter and Robert H. Grills, "NDE of F100 Third Disk Using Angle Beam Ultrasonic Imaging Technique," Materials Evaluation, 1999, p. 753-758.



**Personal Statement:** Engineering is the foundation of industrialization and modern civilization. High standards of living and awareness of public safety will need constant work from all aspects of engineering sciences. Engineering can help create jobs and build a strong economy. It needs people with honesty, creativity, innovation and dedication. If interested, I welcome you to our classes and we learn together that engineering can be fun.

Courses taught at Uconn Avery Point (1999-present): Math 109Q, ENGR 100, 150C, 151 – II, 166, 295, Engr 1000, Engr 1166, CSE123C and CE 212.

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