



吳光鐘(Kuang-Chong Wu)

Current Position

1. Distinguished Professor, Institute of Applied Mechanics, National Taiwan University.
2. Executive Vice President, National Applied Research Laboratories.
3. Editor-in-Chief, Journal of Mechanics.

Contact Information

Tel: 886-2 -3366-5695 (NTU), 886-2 -2737-8017 (NARL)

Fax: 886-2- 3366-5696 (NTU), 886-2 -2737-8015 (NARL)

e-mail: wukc@webmail.iam.ntu.edu.tw (NTU), wukc@narl.org.tw (NARL)

Institute of Applied Mechanics, National Taiwan University, No.1, Roosevelt Road, Section 4, Taipei, Taiwan.

Education

- BS in Civil Engineering, National Taiwan University (1979)
- MS in Civil Engineering, Lehigh University, Bethlehem (1981)
- Ph.D. in Applied Mechanics, Cornell University, Ithaca (1985)

Professional Experience

- Post-doctoral Fellow, Cornell University (1985.6-1985.12)
- Associate Professor, Institute of Applied Mechanics, National Taiwan University (1986 -1991)
- Professor, Institute of Applied Mechanics, National Taiwan University (1991-)Director, Institute of Applied Mechanics, National Taiwan University (1994-1997)
- Director, Nano-Electro-Mechanical-Systems Research Center, National Taiwan University (2005 to 2006)
- Executive Vice President, National Applied Research Laboratories (2006-2012)

Honors and Awards

- Superior Research Award (研究優等獎), National Science Council (1989, 1992, 1994)
- Outstanding Research Award (研究傑出獎), National Science Council (1990, 1991, 2000, 2001, 2002, 2003, 2004).
- Distinguished Research Fellow Award (傑出特約研究員獎), National Science Council (2005-2007)
- Distinguished Research Fellow (特聘研究員), National Applied Research Laboratories (2006-2012)
- Distinguished Professor (特聘教授), National Taiwan University (2006-)
- Outstanding Alumni Award (傑出校友獎), Department of Civil Engineering, National Taiwan University (2000)
- Superior Teaching Award (教學優良獎), National Taiwan University (1991, 2000)
- Outstanding Teaching Award(教學傑出獎), National Taiwan University (2008)
- Service Award, (服務獎), Society of Theoretical and Applied Mechanics, R.O.C. (1996)
- Sung-Fung Dow Award (孫方鐸獎章), Society of Theoretical and Applied Mechanics, R.O.C. (2005)
- Fellow, Society of Theoretical and Applied Mechanics of Taiwan (2006)

Fields of Research

- Anisotropic Elasticity
- Fracture Mechanics
- Nano- and Micro-Mechanics

Professor Wu's has studied problems associated with elastic anisotropic materials extensively. He has derived the crack-tip fields of a stationary or moving interfacial crack in anisotropic materials, which have been widely cited. He has established a link between three-dimensional elasticity problems and the corresponding two-dimensional and obtained several three-dimensional solutions from their two-dimensional counterparts. He has also proposed a method for analyzing transient motion of anisotropic materials directly in the time domain and applied the method to investigate wave propagation phenomena in anisotropic materials. Recently He has been involved with the mechanics in connection with bio-sensors.

Selected Publications

1. K.-C. Wu (1990) Stress intensity factors and energy release rate for interfacial cracks between dissimilar anisotropic materials. *ASME Journal of Applied Mechanics* 57, pp.882-886.
2. K.-C. Wu (1998) Generalization of the Stroh formalism to three-dimensional anisotropic elasticity. *Journal of Elasticity* 51, pp. 213-225.
3. K.-C. Wu (2000) Extension of Stroh's Formalism to Self-Similar Problems in Two-Dimensional Elastodynamics. *Proceedings of the Royal Society of London (A)*, 456, pp.869-890.
4. K.C. Wu (2004) Diffraction of a plane stress wave by a semi-infinite crack in a general anisotropic elastic material. *Wave Motion* 40, pp.359-372.
5. C. -Y. Wu, J. -S. Chang, and K.-C. Wu (2005) Analysis of wave propagation in infinite piezoelectric plates. *Journal of Mechanics* 21, pp.103-108.
6. K.-C. Wu and S.-H. Chen (2006) Transient motion of an anisotropic elastic half-space due to a buried line source. *International Journal of Solids and Structures* 43, pp.4258-4270..
7. C.-K. Yang, J.-S. Chang, S. D. Chao, and K.-C. Wu (2007) Two-dimensional simulation on immunoassay for a biosensor with applying electro-thermal effect. *Applied Physics Letters* 91, 113904 .
8. C-K. Yang, J.-S. Chang, S. D. Chao, and K.-C. Wu (2008) Effects of diffusion boundary layer on reaction kinetics of immunoassay in a biosensor. *Journal of Applied Physics* 103, 084702.
9. Y.-K. Yen, C.-Y. Huang, C.-H. Chen, C.-M. Hung, K.-C. Wu, C.-K. Lee, J.-S. Chang, S.-M. Lin, L.-S. Huang (2009) A novel, electrically protein-manipulated microcantilever biosensor for enhancement of capture antibody immobilization. *Sensors and Actuators B-Chemical* 141 (2), pp.498-505.
10. K.-C. Wu and J. -C. Chen (2011) Transient analysis of collinear cracks under anti-Plane dynamic loading," *Procedia Engineering* 10, pp.924–929.