

Yun-Che Wang (王雲哲), Ph.D.

Associate Professor

Department of Civil Engineering, National Cheng Kung University, Tainan 70101, Taiwan.

Phone: +886-6-2757575 ext. 63140, Fax: +886-6-2358542

E-mail: yunche@mail.ncku.edu.tw or yunche@mac.com

17 October 2011

Table of Contents

Professional Experiences	2
Academic Background	2
Synergistic Activities	3
Awards and Honors	3
Salient Journal Publications	4
Journal Publications	5
Books and Book Chapters	10
International and Domestic Conferences	11
Patent	17
Thesis or Dissertation Advisor	18
Research Projects	20

Professional Experiences

2010.08.01 – present: Associate Professor, Department of Civil Engineering, National Cheng Kung University (NCKU), Tainan 701, Taiwan

2006.08.21 – 2010.07.31: Assistant Professor, Department of Civil Engineering, National Cheng Kung University (NCKU), Tainan 701, Taiwan

2005 - 2006.08.15: Director's postdoctoral fellow in CINT (Center for Integrated Nanotechnologies) at Los Alamos National Laboratory, Los Alamos, NM 87545, USA

June 2004 -2005: Director's postdoctoral fellow in MST-8 (Materials Science and Technologies) at Los Alamos National Laboratory, Los Alamos, NM 87545, USA

Feb. 2000 - May 2004: Research Assistant at University of Wisconsin-Madison, Madison, WI 53706, USA

Aug. 1998 - Jun. 1999: Lecturer in Department of Civil Engineering, Chung Yuan Christian University, Chung-Li, Taiwan

Academic Background

May 2004 Ph.D. in the Engineering Mechanics Program, Department of Engineering Physics, UW-Madison, U.S.A. Thesis: The Development of Advanced Materials: Negative Poisson's ratio materials, high damping and high stiffness materials and composites with negative stiffness inclusions.

May 2003 M. S. in the Engineering Mechanics Program, Department of Engineering Physics, UW-Madison, U.S.A.

June 1996 M.S. in Civil Engineering, Department of Civil Engineering, National Cheng-Kung University, Taiwan. Major in Structural Mechanics. Thesis: 3D Geometrically Nonlinear Asymptotic Theory of Composite Plates.

June 1994 B.S. in Civil Engineering, Department of Civil Engineering, Chung Yuan Christian University, Taiwan. Thesis: Large displacement and large rotation analysis of

spatial structures using Euler large rotation formula.

Synergistic Activities

Dr. Wang's research is centered around effects of microstructure on mechanical properties of materials, such as sputtered films, *via* theoretical and experimental methods. His recent research interests are in (1) molecular dynamics simulations of organic and inorganic materials to find optimal atomic conformations; (2) fatigue and energy-dissipation properties of nano-layered metallic films to achieve high strength and high ductility; and (3) composites with phase transforming inclusions to achieve high damping and high stiffness.

Awards and Honors

- 1994 The Phi Tau Phi Scholastic Honor Society of the Republic of China (中華民國斐陶斐榮譽學會榮譽會員)
- 2003 Vilas Fellowship, University of Wisconsin–Madison, USA.
- 2004 Director's Postdoctoral Fellowship, Los Alamos National Laboratory, Los Alamos, NM 87544, USA
- 2009 教育部顧問室大學跨學門科學人才培育銜接計畫 – 優等計畫獎 (九十七年度)
- 2009 Abaqus Taiwan User Conference – Outstanding Technology Award

Salient Journal Publications

1. Lakes, R. S.*, Lee, T., Bersie, A., and **Wang, Y. C.**, “Extreme damping in composite materials with negative stiffness inclusions”, *Nature*, 410(6828), 565-567, 29 March (2001). (EI ; 2006 SCI I.F. : 26.681) (2/50 = 0.040 MULTIDISCIPLINARY SCIENCES) (Times Cited:39)

Journal Publications

Year of 1995

1. Wang, P. H. and **Wang, Y. C.**, “Study on Euler's Angles and Euler's Finite Rotation Formula”, *Journal of Structural Engineering*, 10 (4), 43-64, Dec. (1995), Taipei, Taiwan (in Chinese).

Year of 1996

2. Wang, P. H., Huang, S. L. and **Wang, Y. C.**, “Large Rotation and Large Displacement Analysis of Space Frames”, *Journal of Structural Engineering*, 11 (2), 3-21, June (1996), Taipei, Taiwan (in Chinese).

Year of 2001

3. Lakes, R. S.*, Lee, T., Bersie, A., and **Wang, Y. C.**, “Extreme damping in composite materials with negative stiffness inclusions”, *Nature*, 410(6828), 565-567, 29 March (2001). (EI ; 2006 SCI I.F. : 26.681) (2/50 = 0.040 MULTIDISCIPLINARY SCIENCES) (Times Cited:39)
4. **Wang, Y. C.** and Lakes, R. S.*, “Extreme thermal expansion, piezoelectricity, and other coupled field properties in composites with a negative stiffness phase”, *Journal of Applied Physics*, 90(12), 6458-6465, 15 Dec. (2001). (EI ; 2006 SCI I.F. : 2.316) (14/84 = 0.167 PHYSICS, APPLIED) (Times Cited:8)
5. **Wang, Y. C.**, Lakes, R. S., and Butenhoff, A., “Influence of cell size on re-entrant transformation of negative Poisson's ratio reticulated polyurethane foams”, *Cellular Polymers*, 20(6), 373-385 (2001). (EI ; 2006 SCI I.F. : 0.611) (14/14 = 1.000 MATERIALS SCIENCE, BIOMATERIALS ; 50/75 = 0.667 POLYMER SCIENCE) (Times Cited:3) (* Corresponding author)

Year of 2002

6. **Wang, Y. C.** and Lakes, R.*, “Analytical parametric analysis of the contact problem of human buttocks and negative Poisson's ratio foam cushions”, *International Journal of Solids and Structures*, 39(18), 4825-4838, Sep. (2002). (EI ; 2006 SCI I.F. : 1.529) (15/109 = 0.138 MECHANICS) (Times Cited:15)

Year of 2003

7. **Wang, Y. C.** and Lakes, R. S.*, “Resonant ultrasound spectroscopy in shear mode”, *Review of Scientific Instruments*, 74(3), 1371-1373 Part 1, Mar. (2003). (EI ; 2006 SCI I.F. : 1.541) (10/53 = 0.189 INSTRUMENTS & INSTRUMENTATION; 28/84 = 0.333 PHYSICS, APPLIED) (Times Cited:5)

Year of 2004

8. **Wang, Y. C.** and Lakes, R. S.*, “Extreme Stiffness Systems due to Negative Stiffness

- Elements”, *American Journal of Physics*, 72(1), 40-50, Jan. (2004). (2006 SCI I.F. : 0.919) (38/68 = 0.559 PHYSICS, MULTIDISCIPLINARY; 8/22 = 0.364 EDUCATION, SCIENTIFIC DISCIPLINES) (Times Cited:8)
9. **Wang, Y. C.**, Ludwigson, M. and Lakes, R. S.*, “Deformation of extreme viscoelastic metals and composites”, *Materials Science and Engineering A - Structural Materials: Properties, Microstructure and Processing*, 370(1-2), 41-49 Sp. Iss. SI, 15 Apr. (2004). (EI ; 2006 SCI I.F. : 1.490) (52/176 = 0.295 MATERIALS SCIENCE, MULTIDISCIPLINARY; 17/32 = 0.531 NANOSCIENCE & NANOTECHNOLOGY) (Times Cited:3)
 10. **Wang, Y. C.** and Lakes, R. S.*, “Stable extremely-high-damping discrete viscoelastic systems due to negative stiffness elements”, *Applied Physics Letters*, 84(22), 4451-4453, 31 May (2004). (EI ; 2006 SCI I.F. : 3.977) (6/84 = 0.071 PHYSICS, APPLIED) (Times Cited:5)
 11. **Wang, Y. C.** and Lakes, R. S.*, “Negative stiffness-induced extreme viscoelastic mechanical properties: stability and dynamics”, *Philosophical Magazine*, 84(35), 3785-3801, 11 Dec. (2004). (EI ; 2006 SCI I.F. : 1.354) (60/176 = 0.341 MATERIALS SCIENCE, MULTIDISCIPLINARY; 22/109 = 0.202 MECHANICS; 7/65 = 0.108 METALLURGY & METALLURGICAL ENGINEERING; 37/84 = 0.440 PHYSICS, APPLIED; 29/58 = 0.500 PHYSICS, CONDENSED MATTER) (Times Cited:4)

Year of 2005

12. **Wang, Y. C.** and Lakes, R. S., “Stability of negative stiffness viscoelastic systems”, *Quarterly of Applied Mathematics*, 63(1), 34-55, March (2005). (EI ; 2006 SCI I.F. : 0.506. 110/150=0.733 MATHEMATICS, APPLIED) (Times Cited:4) (*Corresponding author)
13. **Wang, Y. C.** and Lakes, R. S.*, “Composites with inclusions of negative bulk modulus: extreme damping and negative Poisson’s ratio”, *Journal of Composite Materials*, 39(18), 1645-1657 (2005). (EI ; 2006 SCI I.F. : 0.693. 10/21=0.476 MATERIALS SCIENCE, COMPOSITES) (Times Cited: 3)

Year of 2006

14. **Wang, Y. C.**, Swadener, J. G. and Lakes, R. S., “Two-dimensional viscoelastic discrete triangular system with negative stiffness components”, *Philosophical Magazine Letters*, 86(2), 99-112, Feb. (2006). (EI ; 2006 SCI I.F. : 1.539) (25/58 = 0.431 PHYSICS, CONDENSED MATTER) (Times Cited:1) (* Corresponding author)
15. **Wang, Y. C.**, Misra, A. and Hoagland, R. G., “Fatigue properties of nanoscale Cu/Nb multilayers”, *Scripta Materialia*, 54(9), 1593-1598, May (2006). (EI ; 2006 SCI I.F. : 2.161) (12/32 = 0.375 NANOSCIENCE & NANOTECHNOLOGY; 30/176 = 0.170 MATERIALS SCIENCE, MULTIDISCIPLINARY; 3/65 = 0.046 METALLURGY & METALLURGICAL ENGINEERING) (Times Cited:5) (*Corresponding author)

16. **Wang, Y. C.**, Hoehbauer, T., Swadener, J. G., Misra, A., Hoagland, R. G., Nastasi, M., “Mechanical fatigue measurement via a vibrating cantilever beam for self-supported thin solid films”, *Experimental Mechanics*, 46(4), 503-517, Aug. (2006). (2006 SCI I.F. : 1.133) (28/109 = 0.257 MECHANICS) (Times Cited: 0) (*Corresponding author)
17. **Wang, Yun-Che**, “Mechanical fatigue properties of self-supported nano-layered composites”, *力學會訊(STAM: Society of Theoretical and Applied Mechanics of Taiwan)*, 第117期(專題報導), 1-16, Dec., Taiwan (2006) (in English)

Year of 2007

18. **Wang, Y. C.**, Swadener, J. G. and Lakes, R. S., “Anomalies in stiffness and damping of a 2D discrete viscoelastic system due to negative stiffness components”, *Thin Solid Films*, 515(6), 3171-3178, 12 February (2007). (EI ; 2006 SCI I.F. : 1.666) (44/176 = 0.250 MATERIALS SCIENCE, MULTIDISCIPLINARY; 3/16 = 0.188 MATERIALS SCIENCE, COATINGS & FILMS; 24/84 = 0.286 PHYSICS, APPLIED; 21/58 = 0.362 PHYSICS, CONDENSED MATTER) (Times Cited: 1) (*Corresponding author)
19. **Yun-Che Wang**, “Influences of negative stiffness on a two-dimensional hexagonal lattice cell”, *Philosophical Magazine*, 87(24), 3671-3688 (2007) (EI ; 2006 SCI I.F. : 1.354) (60/176 = 0.341 MATERIALS SCIENCE, MULTIDISCIPLINARY; 22/109 = 0.202 MECHANICS; 7/65 = 0.108 METALLURGY & METALLURGICAL ENGINEERING; 37/84 = 0.440 PHYSICS, APPLIED; 29/58 = 0.500 PHYSICS, CONDENSED MATTER) (Times Cited: 0) (*Corresponding author)
20. **Yun-Che Wang**, Yng-Ching Wu, Che-Chia Yeh and Chi-Chuan Hwang*, “Structure-activity relationships of Leu-Enkephalin analog with (4-Carboxamido)phenylalanine (Cpa) substituted for tyrosine: A molecular dynamics study”, *Biopolymers*, 86(3), 231-239, JUN 15 (2007) (EI ; 2006 SCI I.F. : 2.480) (131/262 = 0.500 BIOCHEMISTRY & MOLECULAR BIOLOGY; 30/66 = 0.455 BIOPHYSICS) (Times Cited: 0)
21. Aydiner, C. C., Brown, D. W., Misra, A., Mara, N. A., **Wang Y. C.**, Wall, J. J., Almer, J., “Residual strain and texture in free-standing nanoscale Cu-Nb multilayers”, *Journal of Applied Physics*, 102 (8), Art. No. 083514 OCT 15 (2007) (EI ; 2006 SCI I.F. : 2.316) (14/84 = 0.167 PHYSICS, APPLIED) (Times Cited:0)

Year of 2008

22. Jian-Ming Lu, Chi-Chuan Hwang*, Qu-Yuan Kuo, and **Yun-Che Wang**, “Mechanical Buckling of Multi-Walled Carbon Nanotubes: the Effects of Slenderness Ratio”, *Physica E: Low-Dimensional Systems and Nanostructures*, 40, 1305-1308 (2008) [EI ; 2006 SCI I.F.=1.084. 20/32=0.625 NANOSCIENCE & NANOTECHNOLOGY. 36/58 =0.621 PHYSICS, CONDENSED MATTER. NSC 94-2515-S-006-010] (*Corresponding author)
23. Jian-Ming Lu, **Yun-Che Wang**, Jee-Gong Chang, Ming-Horng Su, and Chi-Chuan

- Hwang*, “Molecular-dynamic investigation of buckling of double-walled carbon nanotubes under uniaxial compression”, *Journal of the Physical Society of Japan*, Vol. 77(4), 044603 (2008) (2006 SCI I.F.=1.926. 17/68=0.25 PHYSICS, MULTIDISCIPLINARY)
24. P. J. Wei, **Y. C. Wang** and J. F. Lin, Retardation of indentation cyclic creep exhibited in metal alloys, *Journal of Materials Research*, 23, 2650-2656 (2008) (2007 SCI I.F.=1.916)
25. **Y. C. Wang**, Y. C. Wu, Jing-Wen Chen, L. S. F. Huang, F. R. Tsai, C. C. Hwang, Structure-activity relationships of modified C-terminal endomorphin-2 analogues by molecular dynamics simulations, *Journal of Molecular Graphics and Modelling*, 27, 489-496 (2008) (2006 SCI IF=2.371, 37/60=0.617 BIOCHEMICAL RESEARCH METHODS; 174/263=0.662 BIOCHEMISTRY & MOLECULAR BIOLOGY; 15/92=0.163 COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS; 9/25=0.360 CRYSTALLOGRAPHY; 7/26=0.269 MATHEMATICAL & COMPUTATIONAL BIOLOGY)

Year of 2009

26. **Y. C. Wang**, Jing-Wen Chen, L. D. Liao, H. C. Lin, C. C. Hwang, Relativistic molecular dynamics simulation of laser ablation process on the xenon solid, *Journal of Heat Transfer*, 131, 033112 (2009) (2007 SCI IF=1.202, 11/43=0.256 THERMODYNAMICS; 13/107=0.121 ENGINEERING, MECHANICAL)
27. **Y. C. Wang** and C. C. Ko, Stress analysis of a two-phase composite having a negative-stiffness inclusion in two-dimensions, *Interactive and Multiscale Mechanics: an International Journal*, 2, 321-332 (2009)

Year of 2010

28. C. C. Hwang, **Y. C. Wang**, Q. Y. Kuo, J. M. Lu, Molecular dynamics study of multi-walled carbon nanotubes under uniaxial loading, *Physica E* 42, 775 (2010)
29. J. P. Chu, J. C. Huang, J. S. C. Jang, **Y. C. Wang**, P. K. Liaw, Thin Film Metallic Glasses: Preparations, Properties and Applications, *JOM* 62, 19-24 (April 2010)
30. **Y.C. Wang**, C.Y. Wu, J.P. Chu, P.K. Liaw, Indentation behavior of Zr-based metallic-glass films via molecular-dynamics simulations, *Metallurgical and Materials Transactions A* 41A, 3010-3017 (Nov. 2010)
31. J. P. Chu and **Yun-Che Wang**, Sputter-deposited Cu/Cu(O) multilayers exhibiting enhanced strength and tunable modulus, *Acta Materialia* 58, 6371-6378 (July 2010)
32. **Yun-Che Wang**, Chun-Yi Wu, Qu-Yuan Kuo, Negative stiffness of a buckled carbon nanotube in composite systems via molecular dynamics simulation, *Physica Status Solidi (b)*, 248, 88-95 (Jan. 2011)
33. T. M. Jaglinski and Yun-Che Wang, Measurement of mechanical properties of hollow tubes with resonant ultrasound spectroscopy, *Journal of Acoustic Society of America*

129, 1890-1898 (April 2011)

Books and Book Chapters

1. **Y.-C. Wang**, T. Hoechbauer, J. G. Swadener, T. Darling, A. Misra, R. Hoagland & M. Nastasi, “Study on fatigue and energy-dissipation properties of nanolayered Cu/Nb thin films”, in *High Performance Structures and Materials III*, The Built Environment Volume 85, C.A. Brebbia Ed., Wessex Institute of Technology, UK, (2006). (ISBN: 1-84564-162-0)

International and Domestic Conferences

Year of 1995

1. Wang, P. H., Huang, S. L. and **Wang, Y. C.**, “Large Rotation and Large Displacement of Space Frames”, Proceedings of International Conference on Lightweight Structures in Civil Engineering, pp. 236-245, Warsaw, Poland, 25 – 29 Sept. (1995).

Year of 2002

2. **Wang, Y. C.**, Ludwigson, M. and Lakes, R. S., “Broadband viscoelastic spectroscopy of high damping alloys and composites”, Proceedings of the 2002 SEM Annual Conference Society & Exposition on Experimental and Applied Mechanics, Paper Number 9, Milwaukee, Wisconsin, 10 – 12 June (2002), published by the Society for Experimental Mechanics, Inc., 7 School Street, Bethel, CT, USA.
3. **Wang, Y. C.** and Lakes, R. S., “Advances in composite materials with inclusions of negative stiffness”, Proceedings of the 2002 SEM Annual Conference Society & Exposition on Experimental and Applied Mechanics, Paper Number 10, Milwaukee, Wisconsin, 10 – 12 June (2002), published by the Society for Experimental Mechanics, Inc., 7 School Street, Bethel, CT, USA.
4. **Wang, Y. C.**, Ludwigson, M. and Lakes, R. S., "Study of high damping alloys and composites over eleven decades of time and frequency by broadband viscoelastic spectroscopy", poster presentation, International Conference on Internal Friction and Ultrasonic Attenuation in Solids, ICIFUAS-13, Bilbao, Spain, 7 – 12 July 2002.

Year of 2003

5. **Wang, Y. C.** and Lakes, R. S., “Stability of discrete viscoelastic spring networks with negative stiffness components”, conference abstract, 40th annual meeting, Society of Engineering Science, Ann Arbor, MI, U.S.A., 15 Oct. (2003).
6. Jaglinski, T., **Wang, Y. C.** and Lakes, R. S., “Transient mechanical properties during phase transformations in the Zn-Al system”, conference abstract, 40th annual meeting, Society of Engineering Science, Ann Arbor, MI, U.S.A., 15 Oct. (2003).
7. Lan, J., **Wang, Y.-C.**, Lakes, R. S. and Cooper, R. F., “The impact of Olivine-Orthopyroxene phase boundaries on mechanical absorption: inferences from Resonant Ultrasound Spectroscopy (RUS)”, Eos. Trans. AGU, 84(46), Fall Meet. Suppl., Abstract T42A-0282 (2003).

Year of 2004

8. **Wang, Y. C.** and Lakes, R. S. "Stability of discrete systems containing a negative stiffness element", SIAM Conference on mathematical aspects of materials science, Los Angeles, CA, U.S.A., 16 – 23 May (2004).
9. Lakes, R. S. and **Wang, Y. C.**, "Freedom and stability in elastic solids", 41st Meeting,

Society of Engineering Science, Lincoln, NE, U.S.A., 10 – 13 Oct. (2004).

10. **Wang, Y. C.**, Swadener, J. G. and Lakes, R. S., "A two-dimensional discrete high damping and high stiffness viscoelastic system with negative stiffness elements", The 16th Annual Rio Grande Symposium on Advanced Materials, Albuquerque, NM, U.S.A., 25 Oct. 2004.

Year of 2005

11. Hoechbauer, T., **Wang, Y. C.**, Swadener, J. G., Darling, T., Hoagland, R. G., Zhang, X. and Misra, A., "Investigation of fatigue and viscoelastic properties of nanolayered Cu/Nb thin films: validation of experimental methodology", Spring MRS meeting, San Francisco, California, U.S.A., March 30, 2005.
12. **Wang, Y. C.**, Tobias Hoechbauer, J. Greg Swadener, Tim Darling, Amit Misra, Richard Hoagland, and Michael Nastasi, "Study on energy-dissipation and fatigue properties of nanolayered Cu/Nb thin films", 17th Annual Rio Grande Symposium on Advanced Materials, Albuquerque, New Mexico, U.S.A., 11 Oct. 2005.
13. **Wang Y. C.**, Study on energy-dissipation and fatigue properties of nanolayered Cu/Nb thin films, Second International Conference on Computational Methods and Experiments in Material Characterisation, Portland, Maine, U.S.A., 2-4 Nov. 2005.

Year of 2006

14. **Wang, Y. C.**, J. G. Swadener, T. Hoechbauer, T. Darling, R. Hoagland, and A. Misra, Investigation of fatigue in nano-layered Cu/Nb thin films, TMS, San Antonio, TX, 3/12-16, 2006.
15. **Wang, Y. C.**, J. G. Swadener, T. Hoechbauer, T. Darling, R. Hoagland, and A. Misra, Fatigue properties of nanolayered Cu/Nb thin laminate films, International Fatigue Congress, Atlanta, Georgia, USA, 5/14-19, 2006.
16. Swadener, J. G. and **Wang, Y. C.**, Experimental study of energy dissipation in nano-layered thin films, USNCTAM, Boulder, CO, USA, 6/25-30, 2006.
17. **Wang, Y.C.** and J. G. Swadener, Stability of mechanical systems with negative stiffness components, USNCTAM, Boulder, CO, USA, 6/25-30, 2006.
18. **Wang, Y. C.** and Lakes, R. S., Investigation of a hexagonal lattice cell with negative stiffness components, SES, PennState, Pennsylvania, USA, 8/13-16, 2006.
19. **Wang, Y. C.**, Hoechbauer, T., Swadener, T. Darling, J. G., Misra, A., Hoagland, R. G., Nastasi, M., "Study in fatigue and energy-dissipation properties of nanolayered Cu/Nb thin films", in *High Performance Structures and Materials III*, C.A. Brebbia Ed., (2006).

Year of 2007

20. Hwang C.C., Lu J.M., and **Wang Y.C.**, Scaling phenomena in mechanical buckling of multi-walled carbon nanotubes, 17th International Conference on the Electronic Properties of Two-Dimensional Systems (EP2DS-17), Genova Magazzini del Cotone,

Italy, July 15-20 2007, pp. 578-579 (Poster: PE78)

21. **Wang, Y. C.**, Yeh, Chang-Hsin, Yu, C. Y., Chou, Yia-Ling, Chu, Jinn P., Investigation of the interfacial effects in sputtered multilayered Cu film, ICCE-15 (15th International Conference on Composites/Nano Engineering), Haikou, Hainan Island, China, 16-21 July (2007)
22. **Wang, Y. C.**, Effects of pre-buckled elements in 2D discrete composite systems, Cross-strait Workshop on Engineering Mechanics (CSWEM), Xiaan/Lanzhou, China, 13-21 August (2007)
23. 盧建銘、**Yun-Che Wang (王雲哲)**、吳俊毅、黃吉川，“水在奈米碳管或碳-60的動態特性之研究”，The 14th National Computational Fluid Dynamics Conference, Nantou county, August 2007, pp. CFD14 B-090~1-10. (Poster: B-090)
24. 盧建銘、郭屈原、**Yun-Che Wang (王雲哲)**、黃吉川，“以分子動力學方法模擬奈米碳管的挫曲行為與尺度效應之研究”，The 14th National Computational Fluid Dynamics Conference, Nantou county, August 2007, pp. CFD14 C-041~1-10. (Poster: C-041)
25. 盧建銘、洪正修、黃吉川、簡文通、李旺龍、**Yun-Che Wang (王雲哲)**、張自恭、簡騰瑞，“奈米碳管場發射顯示器之碳管動態行為分析”，2007台灣光電科技研討會 (Optics and Photonics Taiwan, OTP2007)，中興大學，台中，台灣，2007年11月30~12月1日，pp. 124. (Poster:GP-007-1~3)
26. 郭屈原、**Yun-Che Wang (王雲哲)**、盧建銘、黃吉川，“多壁奈米碳管的力學挫曲行為之探討”，2007年奈米技術與材料研討會 (Nano-Scale Technology and Materials Symposium 2007)，大葉大學，彰化縣，台灣，2007年12月7日，pp. 8 (P07-1~8)
27. 盧建銘、洪正修、黃吉川、簡文通、李旺龍、**Yun-Che Wang (王雲哲)**，“含水奈米碳管的動態行為分析”，The 31th National Conference on Theoretical and Applied Mechanics, December 21-22, 2007, ISU, Kaohsiung, Taiwan, R.O.C. , pp. 448 (P10-1~6)

Year of 2008

28. **Yun-Che Wang**, Lun-De Liao, Hong-Chang Lin, and Chi-Chuan Hwang*, Modeling of clusters in a strong laser electromagnetic field by a three-dimensional relativistic molecular dynamics, The first ASME Micro/Nanoscale Heat Transfer International Conference (MNHT2008), National Cheng Kung University, Tainan City, Taiwan, January 6-9, 2008 (MNHT2008-52226) (oral presentation)
29. Jian-Ming Lu, Chun-Yi Wu, Cheng-Shiu Hung, Wen-Tung Chien, Wang-Long Li, Chi-Chuan Hwang, and **Yun-Che Wang**, Dynamical behavior of water inside a capped single-walled carbon nanotube, The first ASME Micro/Nanoscale Heat Transfer International Conference (MNHT2008), National Cheng Kung University, Tainan City, Taiwan, January 6-9, 2008 (MNHT2008-52227) (oral presentation)
30. **Yun-Che Wang**, Shin-Shiang Yang, Hong-Chang Lin, and Chi-Chuan Hwang*, A

Statistical Mechanics Model with Maxwell-Jüttner distributions in Three-Dimensional Relativistic Molecular Dynamics , The first ASME Micro/Nanoscale Heat Transfer International Conference (MNHT2008), National Cheng Kung University, Tainan City, Taiwan, January 6-9, 2008 (MNHT2008-52229) (oral presentation)

31. **Yun-Che Wang**, Nanofabrication with carbon nano-cones as indenter tips, Workshop on Simulation-Based Engineering and Science (SBE&S), National Cheng Kung University, Tainan, Feb. 2008.
32. **Yun-Che Wang**, Molecular dynamics investigation of annealing-induced metallic glass thick films, The 6th International Conference on Bulk Metallic Glasses (BMG-VI), Xi'an, China, 11-15 May 2008.
33. **Yun-Che Wang**, Molecular dynamics simulation of sputtered Zr-based metallic glass film under indentation, Metallic Glass Workshop, NTUST International Workshop Series on Metallic Glasses Part II, Taipei, 26 May 2008.
34. **Yun-Che Wang**, Effects of energy-providing components in 2d discrete structures, 22nd International Congress of Theoretical and Applied Mechanics (ICTAM 2008), Adelaide, Australia, 24-30 August 2008.
35. **Yun-Che Wang**, Stability of Postbuckling Induced Negative Stiffness in Mechanical Systems, The 1st Cross-Strait Conference on Computational Mechanics (CSCCM), Taipei, 25-26 August 2008.
36. **Yun-Che Wang**, Effects of slenderness ratios on mechanical buckling of multi-walled carbon nanotubes, Cross-Strait Workshop on Engineering Mechanics (CSWEM), Tainan, 26 Sept. – 2 Oct. 2008.
37. **Yun-Che Wang**, Perspectives of Quantum Biology, The 6th Workshop on Quantum Science and Engineering, National Cheng Kung University, Tainan, 9 November 2008.
38. **Yun-Che Wang**, Nanofabrication with carbon nano-cone as indenter tips, The Eleventh East Asia-Pacific Conference on Structural Engineering & Construction (EASEC-11), Taipei, 19-21 November 2008.
39. **Yun-Che Wang**, Q. Y. Kuo and J. M. Lu, Buckling shapes of a single-walled carbon nanotube reinforced aluminum composite, The 32nd National Conference on Theoretical and Applied Mechanics, Taiwan, November 28-29, 2008.

Year of 2009

40. **Yun-Che Wang**, Hong-Chang Lin, Chun-Yi Wu, Fengxiao Liu, Chi-Chung Hwang, Jinn P. Chu, Yanfei Gao and Peter K. Liaw, Molecular-dynamics study of shear band formation and propagation in Zr-based metallic glass under indentation, TMS, San Francisco, Feb. 15-19, 2009.
41. **Yun-Che Wang**, Chi-Chuan Hwang, Hong-Chang Lin, Jya-Chun Chiu, Toward understanding nanotoxicology and ecotoxicity of nanomaterials through computational quantum biology, *Twenty-first Century Biofuel International Conference*, National Cheng

Kung University, Tainan, Taiwan, Nov. 20, 2009

42. **Yun-Che Wang** and Chi-Ching Ko, On inclusion-matrix interfacial stresses in composites containing phase-transforming phases, *Second International Symposium on Computational Mechanics (ISCM II) & Twelfth International Conference on Enhancement and Promotion of Computational Methods in Engineering and Science (EPMESC XII)*, Hong Kong – Macau, (November 30 – December 3, 2009). Conference proceedings to be published by **American Institute of Physics (AIP) Publisher**.
43. **Yun-Che Wang**, Qu-Yuan Kuo and Chuan Chen, Interactions between a buckled carbon nanotube and fullerene via molecular-dynamics simulations, *Second International Symposium on Computational Mechanics (ISCM II) & Twelfth International Conference on Enhancement and Promotion of Computational Methods in Engineering and Science (EPMESC XII)*, Hong Kong – Macau, (November 30 – December 3, 2009). Conference proceedings to be published by **American Institute of Physics (AIP) Publisher**.
44. **Yun-Che Wang**, Hung-Ju Chou and Chun-Yi Wu, Mode identifications in Resonant Ultrasound Spectroscopy for Viscoelastic Properties Measurements with Abaqus, 2009 Abacus Taiwan User's Conference, 台灣桃園, Nov. 3-4, 2009
45. **Yun-Che Wang**, Statistical Mechanics Model With Maxwell-Jüttner Distribution in Three-Dimensional Relativistic Molecular Dynamics, 中華民國力學學會年會暨第33屆全國力學會議, 國立聯合大學, 台灣苗栗, Nov. 13-14, 2009

Year of 2010

46. **Yun-Che Wang**, C. Y. Wu, Molecular dynamics studies of metallic-glass thin film under nanoindentation, Forum on Computational Mechanics of Discontinua, Jan. 29, 2010
47. **Yun-Che Wang**, C.Y. Wu, J. P. Chu, P. K. Liaw, Stress and temperature induced phase transformation in Zr-based metallic glass via molecular dynamics simulation, TMS conference, Seattle, WA, USA, Feb. 14-18, 2010
48. **Wang, Y.C.**, Wu, C.Y., Jiang, F., Chu, J.P., and Liaw, P.K., Comparative studies of molecular dynamics simulation and in-situ synchrotron experiment on the atomic deformation of Cu-Zr-Al metallic glass, 2010 Taiwan Tech International Workshop on Metallic Glasses, Taipei, Taiwan, May 31, 2010.
49. **Wang, Y.C.**, Wu, C.Y., Fatigue behavior of sputter deposited polycrystalline Al thin film via molecular dynamics simulation, Advances in Interaction and Multiscale Mechanics (AIMM'10), Jeju, South Korea, May 30 – June 3, 2010.
50. **Wang, Y.C.***, Ko, C.C., Effects of fluid flow around geometrically nonlinear cantilever beams, The Third Conference on Wind Engineering, National Chung Hsin University, Taichun, Taiwan, Oct. 15 2010
51. **Wang, Y.C.*** and Ko, C.C., Pendulum-type Vibrational Apparatus for Measuring Viscoelastic Properties of Materials, Structural dynamics and structural vibration

(SDSV2010), YunTech, Yunlin, Taiwan, Nov. 23 2010

52. **Wang, Y.C.***, Resonant ultrasound spectroscopy for tube geometry, The 34th National Conference on Theoretical and Applied Mechanics, YunTech, Yunlin, Taiwan, Nov. 19-20 2010
53. **Wang, Y.C.***, Ko, C.C., Wu, T.C., Viscoelastic Properties of Polymeric Foam Under Dynamic Loading, The Tenth Conference on Structure Engineering, Taoyun, Taiwan, Dec. 1-3, 2010
54. **Wang, Y.C.***, Ko, C.C., Chang, T.S., Geometrically Nonlinear Cantilever Beam Under Base Excitation, The Tenth Conference on Structure Engineering, Taoyun, Taiwan, Dec. 1-3, 2010

Year of 2011

55. **Yun-Che Wang**, Molecular dynamics studies of Cu-Zr-Al metallic glass in connection with in-situ synchrotron experiment, TMS conference, Seattle, WA, USA, Feb. 27, 2011
56. **Yun-Che Wang**, Development of High-Temperature Viscoelastic Spectroscopy (HTVS) for Solids, Department of Mathematics, Hokkaido University, Japan, Mar. 16, 2011
57. **Yun-Che Wang**, Experimental studies of dynamic mechanical properties of solid materials, Civil Engineering Department, National Cheng Kung University, May 6, 2011
58. **Yun-Che Wang**, Molecular dynamics studies of Cu-Zr-Al metallic glass under uniaxial tension/compression loading, BMG 8, May 15, 2011
59. **Yun-Che Wang**, Indentation behavior of Cu-Zr-Al metallic-glass composite thin films via atomistic simulations, 2011 Taiwan Tech International Workshop on Metallic Glasses, Taipei, Taiwan, May 23, 2011

Patent

1. 王雲哲、連敬偉，複合式薄膜，中華民國專利，Pending，2010

Thesis or Dissertation Advisor

Year of 2008

1. Jheng, Hong-Huei (鄭鴻輝), “Development of Resonant Ultrasound Spectroscopy for Determination of Material Properties of Solids at High Frequency”, July 2008 (Master Thesis)
2. Yeh, Chang-Hsin (葉昌鑫), “Viscoelastic properties of nano-layered metallic thin films by nanoindentation ”, July 2008 (Master Thesis)

Year of 2009

3. Yang, Pei-Long (楊培崙), “Indentation problems of elastic micropolar materials”, January 2009 (Master Thesis)
4. Wu, Chun-Yi (吳俊毅), “Investigation of Sputter Deposition and Mechanical Indentation Behavior of Zr-based Multi-Component Amorphous Nano-Scale Thin Films via Molecular Dynamics Simulation”, June 2009 (Master Thesis)
5. Kuo, Qu-Yuan (郭屈原), “Mechanical Properties and Buckling of Carbon Nanotubes and Related Composites via Molecular Dynamics Simulation”, June 2009 (Master Thesis)
6. Chou, Hong-Ju (周鴻儒), “Refinements on Resonant Ultrasound Spectroscopy for Measuring Viscoelastic Properties of Solids”, July 2009 (Master Thesis)
7. Chen, Shung-Tzung (陳修宗), “Discrete Dislocation Dynamics Simulation in Homogenous and Isotropic Media”, July 2009 (Master Thesis)

Year of 2010

8. Lien, (連敬偉), Simultaneous determination of multiple elastic moduli and loss tangents of materials with resonant ultrasound spectroscopy, July 2010 (Master Thesis)
9. Ko, (柯智欽), Simultaneous determination of multiple elastic moduli and loss tangents of materials with resonant ultrasound spectroscopy, July 2010 (Master Thesis)

Year of 2011

10. Hu (胡志豪), Simultaneous determination of multiple elastic moduli and loss tangents of materials with resonant ultrasound spectroscopy, July 2011 (Master Thesis)
11. Ko (柯朝智), Measurement of viscoelastic properties of thin-film materials via cantilever beams under base excitation, 2011 (Master Thesis)

12. Dinh, Gia Bao (丁迦堡), Numerical studies of creep behavior of concrete-filled steel tubular columns under compression at high temperatures, July 2011 (Master Thesis)
13. Wu (吳致年), Simultaneous determination of multiple elastic moduli and loss tangents of materials with resonant ultrasound spectroscopy July 2011 (Master Thesis)

Research Projects

Year of 2004~2006

1. **Yun-Che Wang (王雲哲)**, “Microscopic High Stiffness and High Damping Materials”, Los Alamos National Laboratories, Los Alamos, NM, USA, 2004~2006

Year of 2006

2. **Yun-Che Wang (王雲哲)**, “New faculty support”, Department of Civil Engineering, NCKU(成功大學土木系), Sept. 2006
3. **Yun-Che Wang (王雲哲)**, “New faculty support”, College of Engineering, NCKU (成功大學工學院), Sept. 2006

Year of 2007

4. **Yun-Che Wang (王雲哲)**, “Study of nano-scale laminates containing phase-transforming nano-layers”, NCKU Landmark Project Grant (ID: C0095, Oct. 2007 – 30 Sep. 2008) (Phase 1)
5. 盧建銘、**Yun-Che Wang (王雲哲)**, “前瞻性次世代奈米碳管(carbon nanotube)顯示器之力學、熱學以及電性耦合效應的探討(1/3)”, 行政院國家科學委員會(National Science Council of Taiwan)專題研究計畫(計畫編號: NSC 96-2221-E-492-007-MY3, 執行期間: 96/8/1-99/7/31) (共同主持人)。Materials World Network: Structures and Mechanical Behavior of Nanocrystalline Phase-Containing Glass-Forming Thin Films (NSC 96-2628-E-011-117-MY3, Period: 1 Aug. 2007 - 31 July 2010) (Co-PI)
6. 朱瑾、**Yun-Che Wang (王雲哲)**, “材料世界網: 含奈米晶之金屬玻璃薄膜(metallic glass)之結構與機械性質研究(1/3)”, 行政院國家科學委員會專題研究計畫(計畫編號: NSC 96-2628-E-011-117-MY3, 執行期間: 96/8/1-99/7/31) (共同主持人)。Investigation into the coupling effects including mechanical, thermal, and electrical properties of advanced carbon nanotube-field emission display (CNT-FED) for sub-generations (NSC 96-2221-E-492-007-MY3, Period: 1 Aug. 2007 - 31 July 2010) (Co-PI)
7. **Yun-Che Wang (王雲哲)**, “藉由懸臂梁動態彎曲探討薄膜(thin film)材料機械性質之識別:理論及實驗”, 行政院國家科學委員會專題研究計畫(計畫編號: NSC 96-2221-E-006-068-), 執行期間: 96/8/1-99/7/31) (主持人)。Identification of mechanical properties of thin-film materials via dynamic bending of cantilevers: theoretical and experimental development (96-2221-E-006-068, Period: 1 Aug. 2007 - 31 July 2008)

8. **Yun-Che Wang (王雲哲)**, “工程電動力學博士班課程補助”, PhD course, NCKU 2007

Year of 2008

9. **Yun-Che Wang (王雲哲)**, “藉由懸臂梁動態彎曲探討薄膜(thin film)材料機械性質”, NCKU R&D(成功大學研發處), 2008
10. **Yun-Che Wang (王雲哲)**, “大學跨學門科學人才培育銜接計畫-奈米材料變形機制之固體力學模擬”, Department of Education, Taipei 2008
11. **Yun-Che Wang (王雲哲)**, “奈米金屬/非晶多層膜力學性質的理論與實驗探討”, College of Engineering, NCKU 2008 (明日之星)
12. **Yun-Che Wang (王雲哲)**, “高等應用數學博士班課程補助”, PhD course, NCKU 2008
13. **Yun-Che Wang (王雲哲)**, “Study of nano-scale laminates containing phase-transforming nano-layers(續)”, Landmark, NCKU 2008 (Phase 2)
14. **Yun-Che Wang (王雲哲)**, “奈米金屬多層膜力學性質之研究”, NSC 2008 – 2009
15. 參與“高屏溪斜張橋監測系統修復及更新委託設計及監造工作”(台聯工程顧問股份有限公司), 交通部台灣區國道高速公路局南區工程處, 2008-2009
16. **Yun-Che Wang (王雲哲)**, “奈米金屬多層膜的力學性質之研究”, Study of the mechanical properties of carbon-nanotube composites for hydrogen storage using (NSC 97-2221-E-006 -143 -, Period: 1 Aug. 2008 - 31 July 2009)

Year of 2009

17. **Yun-Che Wang (王雲哲)**, “儲氫奈米碳管複合材料之機械性質的分子動力模擬研究”, Study of the mechanical properties of carbon-nanotube composites for hydrogen storage using (NSC 98-2221-E-006 -131 -MY3, Period: 1 Aug. 2009 - 31 July 2012) Phase 1
18. **Yun-Che Wang (王雲哲)**, “大學跨學門科學人才培育銜接計畫-奈米材料變形機制之固體力學模擬(續)”, Department of Education, Taipei 2009 (Phase2)

Year of 2010

19. **Yun-Che Wang (王雲哲)**, “儲氫奈米碳管複合材料之機械性質的分子動力模擬研究”, Study of the mechanical properties of carbon-nanotube composites for hydrogen storage using (NSC 98-2221-E-006 -131 -MY3, Period: 1 Aug. 2009 - 31 July 2012) Phase 2.

20. **Yun-Che Wang (王雲哲)**, “大學跨學門科學人才培育銜接計畫-”, Department of Education, Taipei 2010.

Year of 2011

21. **Yun-Che Wang (王雲哲)**, “儲氫奈米碳管複合材料之機械性質的分子動力模擬研究”, Study of the mechanical properties of carbon-nanotube composites for hydrogen storage using (NSC 98-2221-E-006 -131 -MY3, Period: 1 Aug. 2009 - 31 July 2012) Phase 3.
22. **Yun-Che Wang (王雲哲)**, “大學跨學門科學人才培育銜接計畫-”, Department of Education, Taipei 2011.