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Texas Tech University
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EDUCATION

Ph.D. Iowa State University, Ames, Iowa, Mechanical Engineering, 1984.
M.S. Iowa State University, Ames, Iowa, Mechanical Engineering, 1979.
B.S. National Tsing Hua University, Taiwan. Power Mechanical Engineering, 1977.

EXPERIENCE

Department of Mechanical Engineering, Texas Tech University, Lubbock, TX.
Associate Chair and Undergraduate Program Director, 2013 -2015.
Professor, 1994 - present.
Associate Professor, 1989 - 1994.
Assistant Professor, 1987 - 1989.
Founder and Coordinator, [Healthcare Engineering Option in the Master of Engineering Degree](#) (HEOME), College of Engineering, Texas Tech University, Lubbock, TX, 2008 - present. The TTU Online Graduate Engineering Program including the online portion of HEOME has been ranked No. 1 Best Value Online Graduate Engineering Program.
Adjunct Professor, School of Medicine, Texas Tech University Health Sciences Center, Lubbock, TX, 2004 - present.
Joint Professor, Department of Health, Exercise, and Sport Sciences, Texas Tech University, Lubbock, TX, 2005 - 2011.
NASA-ASEE Summer Faculty Fellowship, NASA Johnson Space Center, Houston, Texas, May-July, 1992.
Summer Faculty Research, Argonne National Laboratory, Argonne, Illinois, May - July, 1989, 1990, 1991.
Assistant Professor, 1984 - 1987. Department of Mechanical and Aerospace Engineering, University of Missouri-Columbia/Kansas City.
Research Assistant, 1979 - 1980, Institute of Process Engineering, University of Hannover, Hannover, Germany.

REGISTRATION

Professional Engineer, State of Texas, certificate no. 66765.

PROFESSIONAL ACTIVITIES

[Healthcare Engineering Alliance Society \(HEALS\)](#)
Founder and Chair, Organizing Board of Directors, 2013-2015.
Founding President and Executive Director, 2015 -
American Society of Mechanical Engineers (ASME)

Heat Transfer Division

K-10 Committee on Heat Transfer Equipment, member, 1984 –.

Advanced Energy Systems Division

Superconductivity Technical Committee:

Secretary, 1991 - 1992

Vice Chair, 1992 - 1993

Chair, 1994 - 2004

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

Technical Committee TC 1.3, Heat Transfer and Fluid Flow, member, 1992 -.

Technical Committee TC 8.5, Liquid to Refrigerant Heat Transfer, member, 1997 -.

Editorial Positions

Founding Editor-in-Chief, [*Journal of Healthcare Engineering*](#) (SCI, Web of Science, PubMed, Engineering Index, SCOPUS), 2010 –.

Editorial Board Member, *Annals of Musculoskeletal Disorders*. 2018 - present.

Board of Editors Member, *Advances in Orthopaedics and Sports Medicine*. 2018 - present.

Editorial Board Member, *International Journal of Orthopaedics and Musculoskeletal Disorders*. 2018 - present.

Editorial Committee Member, *Advances in Robotics & Mechanical Engineering*. 2018 - present.

Editorial Board Member, *Journal of Biomedical Instrumentation and Applications*. 2017 – present.

Associate Editor, *Journal of Electronics Cooling and Thermal Control*, 2011- present.

Editorial Advisory Board member, *Neonatal Monitoring Technologies: Design for Integrated Solutions*, IGI Global, 2010.

Editorial Board Member, *ISRN Mechanical Engineering*. 2010 - present.

Editor, *Journal of Engineering and Technology Research*. 2009 - present.

HONORS AND AWARDS

1. “A Most Influential Faculty Member”, Texas Tech University, 2018.
2. “Professor of the Year”, Pi Tau Sigma (International Mechanical Engineering Honor Society, TTU Student Chapter), 2015.
3. Lockheed Martin Excellence in Teaching Award, Texas Tech University, 2014.
4. Service Award, Department of Mechanical Engineering, Texas Tech University, 2014.
5. Distinguished Achievement Award, Texas Tech University, 2014.
6. “Most useful paper to practitioners”, American Academy of Pain Management, 2012.
7. Fellow, American Society of Mechanical Engineers (ASME)
8. Best Technical Paper Award, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), 1997.
9. Service Award, Texas Tech University, 1995, 2003, 2014, 2018.
10. Outstanding Researcher Award, Texas Tech University, 1992.
11. Certificate of Recognition for Research Contributions, The National Aeronautics and Space Administration (NASA), 1992.
12. Award of Excellence, Halliburton Education Foundation, 1992.
13. Best Paper Award, Advanced Energy Systems Division, American Society of Mechanical Engineers (ASME), 1991.
14. Ralph R. Teetor Educational Award, Society of Automotive Engineers (SAE), 1989.

15. Award of Excellence, Halliburton Education Foundation, 1989.
16. Abel Undergraduate Teaching Award, Texas Tech University, 1989.
17. The New Faculty Award of Ex-Students Association of Texas Tech University, 1989.
18. Dr. Charles L. Burford Faculty Award, 1987.
19. National Science Foundation Engineering Research Initiation Award, 1985.

RESEARCH SPECIALTIES

Healthcare engineering
 Clinical engineering research
 Musculoskeletal biomechanics and diseases
 Thermal fluid sciences
 Energy systems

SPONSORED RESEARCH

1. “Tai Chi for pain management: a pilot mechanistic study”. Shen, L., O’Boyle, M., Neugebauer, V., Brismee, J.-M., Zumwalt, M., Lee, J., Chyu, M.-C., Luk, H.-Y., Watkins, B. (Co-Principal). Center of Excellence for Translational Neuroscience and Therapeutics. \$18,000, 12/1/2018 – 11/30/2019.
2. “Tai Chi for pain management of knee osteoarthritis”. Shen, L., O’Boyle, M., Neugebauer, V., Watkins, B., Brismee, J.-M., Zumwalt, M., Lee, J., Chyu, M.-C., Luk, H.-Y.. Texas Tech University Neuroimaging Institute. \$5,002, 2018-2019.
3. “Learning Lessons from Hurricane Harvey: Improving Hospital Natural Disaster Policies and Practices”. Patricia Maloney, Ming-Chien Chyu, Brandon Wagner. \$5,000. Texas Tech Scholarship Catalyst Program, 2017-2018.
4. “Preparation for GTP Long-Term Clinical Study on Bone Health”. C-L Shen (PI), J-S Wang, Xiao Song, M Jenkins, G Brackee, K Mitchell, MC Chyu. National Institutes of Health (NIH), \$1,585,149, 09/30/2012-6/30/2017.
5. “Martial Arts Exercise Program for Overweight/Obese Premenopausal Women- a Pilot Study”. Chwan-Li Shen, Michael Ragain, Yan Zhang, Ming Chyu. Laura W Bush Institute for Women’s Health, and Texas Tech University Medical Center (UMC) Women’s Innovation Fund, \$5,000, 1/1/2010-12/31/2011.
6. “Green Tea Polyphenols and Tai Chi for Bone Health: a Pilot Study.” C-.L Shen (PI), J-S Wang, M-C Chyu, C Felton, BH Arjmandi, JK Yeh, J Magaziner, KT Xu, BC Pence. National Institutes of Health (NIH/NCCIH AT003735), \$572,720, 2007-2010.
7. "Community Based Approaches to Overweight and Obesity Among Young Children in West Texas", Chris Esperat (PI), Du Feng, Arthur Islas, Robert Hastings, Mallory Boylan, Ming Chyu, Debra Reed, Leslie Thompson, Joaquin Borrego, Darrell Williams, US Department of Agriculture, \$1,480,956. 2006 –2010.
8. “Modified Tai Chi Exercise During Outpatient Hemodialysis Therapy”, Chwan-Li Shen (Principal Investigator), Sorot Phisitkul, M.-C. Chyu, Texas Tech University Health Sciences Center, Clinical and Basic Science Research Seed Grant, \$20,000, 2008-2009.
9. “Development of an in situ high-pressure high-temperature Raman scattering system”, Y. Ma (PI), J. Chaudhuri, M.-C. Chyu, G. Li, National Science Foundation (NSF), \$433,872, 2006-2008.

10. "Evaporation in Flooded Corrugated Plate Heat Exchangers with Ammonia and Ammonia/miscible Oil", M. Sultan Khan (PI), M.-C. Chyu, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), \$97,585. 2006-2009.
11. "Exercise and Glycemic Control in People with Diabetes", Chris Esperat (PI); Du Feng, Yan Zhang, Leslie Shen, Ming Chyu, Co-Investigators, Texas Tech University Health Sciences Center, \$20,000, 1/1/06 - 8/31/07.
12. "Effects of Tai Chi on Biomechanical Responses Related to Risk of Falls in Elderly Women with Osteoporosis", M Chyu (PI), D Dunn, C Shen, S Sawyer, R James, J-M Brismee, KT Xu. TTU 2004 Inter/Multidisciplinary seed grant, 2005-2006, \$8,988.
13. "Effect of Tai Chi on glycemic index of type II diabetes." C-L Shen (PI), M-C Chyu, CM Esperat, D Feng, B Irons. School of Nursing, Texas Tech University Health Sciences Center. \$10,000, 8/1/2004-7/31/2005.
14. "Exercise and Osteoarthritis." C-L Shen (PI), M-C Chyu, JM Brismee. School of Allied Health, Texas Tech University Health Sciences Center. \$5,000, 1/1/2004-12/31/2004.
15. "Tai Chi for Fitness and Wellness in the Elderly", C.-L. Shen (PI), M.-C. Chyu, Carillon Senior Living Campus. \$4,800, 2004-2007.
16. "Effects of exercise on bone metabolism of the elderly in west Texas." C-L Shen (PI), M-C Chyu, KB Chauncy, JS Williams, FR Prabhu FR. Helen Jones Foundation/Carillon Research and Education Center. \$20,000, 9/1/2002-12/31/2003.
17. "Curriculum Development for the Design, Fabrication, and Utilization of Chip-Based Micro-Analytical Systems", M.-C. Chyu, co-PI. Other co-PIs: Shubhra Gangopadhyay, Beth Ann Thacker, Timothy Dallas, Henryk Tempin, P.K. Dasgupta, Jordan Berg, Lauren Gollahon, \$899,030, NSF \$477,609, TTU cost sharing \$421,421, 2001 - 2004.
18. "Thermal Control of High-Power Electronic Components by Novel Cooling Techniques", \$18,100, Seed Funds for Interdisciplinary/Multidisciplinary Project, M. Chyu (PI), Henryk Temkin, 1999-2000.
19. Graduate student Grant-in-Aid, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Guangpu Jin, \$7,500, 2000-2001.
20. "Thermal Analysis for Stimulation of Oil/Gas Well", Center of Energy Research, Texas Tech University, \$26,000, 1999. Principal investigator.
21. "Evaporation of Ammonia Outside Smooth and Enhanced Tubes with Miscible and Immiscible Oils", American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), \$194,854, 1997-2002. ASHRAE \$115,676. Matching from Texas Tech, \$79,178. Principal and sole investigator.
22. "Measurement of Thermal Conductivity and Heat Capacity of Foam Insulation During Transient Heating", Sandia National Laboratories, 1997-1998, \$25,866. Matching from Texas Tech, \$9,881. \$35,747 total. Principal and sole investigator.
23. "Guides for Future Two-Phase Thermal System Design", NASA Johnson Space Center, 1995. \$6,395. Principle and sole investigator.
24. "The Effect of Moisture Content on the Thermal Conductivity of Insulation Materials Used on District Heating and Cooling Pipes," American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), 1992-1995, \$119,692. Matching from Texas Tech, \$13,500. \$133,192 total. Principal and sole investigator.
25. "Heat Transfer and Fluid Flow Study of Ammonia Spray Evaporators", ASHRAE, 1992-1995. \$100,000. Matching from Texas Tech University, \$39,000. Matching from Center of Energy Research, \$7,400. \$146,400 total. Principal and sole investigator.

26. "Study of Convective Boiling Heat Transfer of Plate-Fin Heat Exchangers," Texas Tech University, 1992-1993. \$10,800. Principal and sole investigator.
27. "Avionics Integrity: Combined Stress Analysis and Accelerated Life Cycle Testing," General Dynamics Corp. Fort Worth Division, 1990. \$99,979. Principal investigator.
28. "Stability Study of a Composite Superconductor in Superconducting Energy Storage (SMES)," State of Texas, 1990. \$5,625. Principal Investigator.
29. "Integrated Circuit Metrology," Center for Automation and Robotics, 1989. \$54,750. Co-principal investigator.
30. "Stability Analysis for Superconducting Magnetic Energy Storage (SMES)," Center of Applied Research for Engineering, 1989, \$12,000. Principal investigator.
31. "Impact of High-Temperature Superconductor on the Design of Superconducting Magnetic Energy," U. S. Department of Energy, Superconductivity Pilot Center at Argonne National Laboratory, and Chicago Bridge and Iron, Inc., 1989, \$100,000. University Participant.
32. "Expanding Operating Range of Industrial Heat Exchanger Through Vapor Suction", The Center of Energy Research, Texas Tech University, 1988. \$11,933. Principal investigator.
33. "Enhancement of Boiling Heat Transfer by Point-Contact Cavities (Continuation)," National Science Foundation, 1987-1988. \$23,420. Principal investigator.
34. "Enhancement of Boiling Heat Transfer by Point-Contact Cavities", Engineering Research Initiation Grant, National Science Foundation, 1985-1987. \$60,000. Principal investigator.
35. "Water Flow Rate Limitations", sponsored by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), 1985. \$29,345. Co-investigator.
36. "Determination of Validity of Refrigerator/Freezer Energy Testing, sponsored by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), 1985. \$32,211. Co-investigator.
37. Engineering Foundation Research Initiation Grant, 1985. \$15,000. (Resigned because of accepting NSF Initiation Grant.)

BOOKS EDITED

1. C. Wu, M. Chyu, J. Lloret, X. Li. (ed). *Proceedings of the 2nd International Conference on Healthcare Science and Engineering*, Springer Nature, 2018.
2. Ming-Chien Chyu (ed). *Advances in Engineering for Cancer Diagnosis and Treatment*. Multi-Science Publishing Company (UK), 2014, 385 pg.
3. Ming-Chien Chyu (ed). *Advances in Engineering for Healthcare Safety - From Surgery Ergonomics to Computational Fluid Dynamics*. Multi-Science Publishing Company (UK). 2013, 292 pg.
4. Ming Chyu (ed). *Advances in Engineering for Surgery – From Information-Guided Surgery to Cell-Based Medicine*, Multi-Science Publishing Company (UK), 2013, 440 pg.
5. Ming Chyu (ed). *Advances in Electronic Health Records*, Multi-Science Publishing Company (UK), October 2012, 495 pg.
6. Ming Chyu (ed). *Advances in Critical Care Engineering*, Multi-Science Publishing Company (UK), ISBN 978-1-907132-28-5, April 2011, 333 pg.

BOOK CHAPTERS

1. Shen, C.-L.; Zhang, J.; Mo, H.; Chyu, M.-C.; Tang, L.; Wang, J-S. *Green tea catechins and tocotrienols in bone protection: evidence from preclinical studies*, a chapter in *Natural Products and Remedies: Evidence-Based Evaluation for Use in Human Disease Prevention*

and Treatment, Prabhakar, S. S. (editor), in the series of *Physiology in Health and Disease*, Springer, 2019.

2. Shen, C.-L., Mo, H., Smith, B., Chen, C., Chen, L., Chyu, M.-C., Kwun, I.-S. (2013). Green tea and other fruit polyphenols attenuate deterioration of bone microarchitecture. *Polyphenols in Health and Disease*. Elsevier Publisher.
3. C.-L. Shen and M. Chyu, “Green tea and bone health promotion” (invited book chapter), *Tea in Health and Disease Prevention*, VR Preedy (editor), Academic Press (Elsevier) 2012.
4. “Two-Phase Pressure Drop of Refrigerants During Flow Boiling in Small Channels: An Experimental Investigation and Correlation Development” (book chapter), T. N. Tran, M.-C. Chyu, M. W. Wambsganss, D. M. France, *Compact Heat Exchangers and Enhancement Technology for the Process Industries*, R. K. Shah (editor), Begell House, Inc., P. 293-302, 1999.
5. “Application of Passive Enhancement to a 400 Ton Propylene Glycol/Ammonia Spray Evaporator” (book chapter), Z. H. Ayub, and M.-C. Chyu, *Process, Enhanced, and Multiphase Heat Transfer*, R. M. Manglik, A. D. Kraus (editors), Begell House, Inc., New York, pp. 333-338, 1996.

REFEREED ARCHIVAL JOURNAL PUBLICATIONS

1. Shen CL, Smith BJ, Li J, Cao JJ, Song X, Mendez M, Corry KA, Tomison MD, Tang L, Wang JS, Chyu MC, Effect of long-term green tea polyphenol supplementation on bone architecture, turnover, and mechanical properties in middle-aged ovariectomized rats. *Calcified Tissue International*, 2018 Nov 9. doi: 10.1007/s00223-018-0489-y.
2. Erik Chumacero, Abdullah Al Masud, Doruk Isik, Chwan-Li Shen, Ming-Chien Chyu. Advances in Powered Ankle-Foot Prostheses, *Critical Reviews in Biomedical Engineering*, 46(3):185–200 (2018). DOI: 10.1615/CritRevBiomedEng.2018025917.
3. Eunhee Chung, Huanbiao Mo, Shu Wang, Yujiao Zu, Manal Elfakhani, Steven R. Rios, Ming-Chien Chyu, Rong-Sen Yang, Chwan-Li Shen. Potential Roles of Vitamin E in Age-Associated Skeletal Muscle Health. *Nutrition Research*, 2018, Vol. 49, 23-26.
4. Shen CL, Brackee G, Song X, Tomison MD, Finckbone VL, Mitchell KT, Tang L, Chyu MC, Dunn, DM, Wang JS. Safety evaluation of green tea polyphenols consumption in middle-aged ovariectomized rat model. *Journal of Food Science*, Vol. 82, Nr. 9, 2017, 2192-2205.
5. Shen CL, Klein A, Chin KY, Mo H, Tsai P, Yang RS, Chyu MC, Ima-Nirwana S. “Tocotrienols for bone health: a translational approach”. *Annals of the New York Academy of Sciences*. 2017, 1401:150-165.
6. Jean-Michel Brisimee; Shengping Yang; Matthew Lambert; Ming-Chien Chyu; Peihuan Tsai; Yan Zhang; Jia Han; Catherine Hudson; Eunhee Chung; Chwan-Li Shen. Differences in musculoskeletal health due to gender in a rural multiethnic cohort: a Project FRONTIER study. *BMC Musculoskeletal Disorders*. 2016, 17:181. DOI: 10.1186/s12891-016-1042-7.
7. Shen CL, Chyu MC. Tea Flavonoids for Bone Health: From Animals to Humans. *Journal of Investigative Medicine*. 2016; 64(7):1151-1157.
8. Ram Haddas, Steven F. Sawyer, Phillip S. Sizer, Toby Brooks, Ming-Chien Chyu, C. Roger James. Effects of Volitional Spine Stabilization and Lower Extremity Fatigue on Trunk Control during Landing in a Recurrent Low Back Pain Population, *Journal of Orthopaedic & Sports Physical Therapy*, 2016, Pages:1–23 DOI: 10.2519/jospt.2016.6048.
9. Laura F. DeFina, David Leonard, Benjamin L. Willis, Carolyn E. Barlow, Carrie E. Finley,

- Marjorie Jenkins, Barbara C. Pence, Yan Zhang, Ming-Chien Chyu, E. Michael Lewiecki, Chwan-Li Shen. "High cardiorespiratory fitness is associated with reduced risk of low bone density in postmenopausal women". *Journal of Women's Health*, 2016 Oct;25(10):1073-1080, doi:10.1089/jwh.2014.5170.
10. Ming-Chien Chyu, Tony Austin, Fethi Calisir, Samuel Chanjaplammoitol, Mark J. Davis, Jesus Favela, Heng Gan, Amit Gefen, Ram Haddas, Shoshana Hahn-Goldberg, Roberto Hornero, Yu-Li Huang, Øystein Jensen, Zhongwei Jiang, J.S. Katsanis, Jeong-A Lee, Gladius Lewis, Nigel H. Lovell, Heinz-Theo Luebbers, George G. Morales, Timothy Matis, Judith T. Matthews, Lukasz Mazur, E.Y.K. Ng, K.J. Oommen, Kevin Ormand, Tarald Rohde, Daniel Sánchez-Morillo, Justo García Sanz-Calcedo, Mohamad Sawan, Chwan-Li Shen, Jiann-Shing Shieh, Chao-Ton Su, Lilly Sun, Mingui Sun, Yi Sun, Senay N. Tewolde, Eric A. Williams, Chongjun Yan, Jiajie Zhang, Yuan-Ting Zhang. "Healthcare Engineering Defined – a White Paper", *Journal of Healthcare Engineering*, Vol. 6, No. 4, Page 635–648, 2015.
 11. Senay Tewolde, Kalarickal Oommen, Donald Y. C. Lie, Yuanlin Zhang, and Ming-Chien Chyu. Epileptic Seizure Detection and Prediction Based on Continuous Cerebral Blood Flow Monitoring – a Review. *Journal of Healthcare Engineering*, 2015(2):159-178.
 12. Shen CL, Han J, Wang S, Chung E, Chyu MC, Cao JJ. "Green tea supplementation benefits body composition and improves bone properties in obese female rats fed with high-fat diet and caloric restricted diet". *Nutr Res*. 35(12), 1095-1105. pii: S0271-5317(15)00227-4. doi: 10.1016/j.nutres.2015.09.014, 2015.
 13. Jacalyn J. Robert-McComb; Ming Chyu; Anna Tacon; and Reid Norman. "The Effects of Tai Chi on Measures of Stress and Coping Style". *Focus on Alternative and Complementary Therapies*, Royal Pharmaceutical Society, UK, Volume 20(2) June 2015 89–96, DOI 10.1111/fct.12179, ISSN 1465-3753.
 14. Shen CL, Chen L, Wang S, Chyu MC (2014). Effects of dietary fat level and feeding duration on musculoskeletal health in female rats. *Food & Function* 5(3): 598-604.
 15. Khan, Mohammad S.; Khan, Tariq S.; Chyu, Ming-C; Ayub, ZH. Evaporation heat transfer and pressure drop of ammonia in a mixed configuration chevron plate heat exchanger. *INTERNATIONAL JOURNAL OF REFRIGERATION*. Volume: 41, Pages: 92-102, MAY 2014.
 16. Shen CL, Chyu MC, Cao JJ, Yeh JK (2013) Green tea polyphenols improve bone microarchitecture in high-fat-diet-induced obese female rats through suppressing bone formation and erosion. *Journal of Medicinal Food*, 16(5):421-427.
 17. Shen, C.-L., Kwun, I.-S., Wang, S., Mo, H., Chen, L., Jenkins, M., Brackee, G., Chen, C.-H., Chyu, M.-C. (2013). Functions and Mechanisms of Green Tea Catechins in Regulating Bone Remodeling. *Current Drug Targets*, 14(13), 1619-30.
 18. Chyu, M.-C., Zhang, Y., Brismée, J., Dagda, R., Chuang, E., Von Bergen, V., Doctolero, Shen, C. (2013). Effects of martial arts exercise on body composition, serum biomarkers and quality of life in overweight/obese premenopausal women: a pilot study. *Clinical Medicine Insights*, 6, 1-11.
 19. Phisitkul, S., Chyu, M.-C., Zhang, Y., Brismée, J., Prabhakar, S., Dagda, R. Y., Dagda, M., Tang, L., Wang, J., Shen, C.-L. (2013). Intradialytic modified Tai Chi exercise among end-stage renal disease patients undergoing hemodialysis: an exploratory pilot study. *Alternative and Integrative Medicine*, 2, DOI: 10.4172/2327-5162.1000123.

20. Shen, C. L., Chyu, M.-C., Wang, J. S. (2013). Tea and bone health: steps forward in translational nutrition. *American Journal of Clinical Nutrition*, 98(6), 1694S-9S.
21. Shen, C.-L., Zhu, W., Gao, W., Wang, S., Chen, L., Chyu, M.-C. (2013). Energy Restricted Diet Benefits Body Composition but Degrades Bone Integrity in Middle-Aged Obese Female Rats. *Nutrition Research*, 33(8), 668–676.
22. Chwan-Li Shen, Ming-Chien Chyu, James K. Yeh, Yan Zhang, Barbara C. Pence, Carol K. Felton, Jean-Michel Brismée, Braham H. Arjmandi, Susan Doctolero, Jia-Sheng Wang. Effect of Green Tea and Tai Chi on Bone Health in Postmenopausal Osteopenic Women: A 6-month Randomized Placebo-Controlled Trial. *Osteoporosis International*, Volume 23, Issue 5 (2012), Page 1541-1552.
23. Shen CL, von Bergen V, Chyu MC, Jenkins MR, Mo H, Chen CH, Kwun IS. Fruits and dietary phytochemicals in bone protection. *Nutrition Research*. 32 (2012), pp. 897-910. DOI information: 10.1016/j.nutres.2012.09.018. (12th most requested article of the journal).
24. Chyu MC, Dagda RY, Doctolero S, Chaung E, Von Bergen V, Zhang Y, Ragain M, Brismee JM, Shen CL. Effect of martial arts exercise on body composition, bone biomarkers, and quality of life in overweight premenopausal women. *Medicine & Science in Sports & Exercise*: May 2012 - Volume 44 - Issue 5S - p 270.
25. Shen CL, Cao JJ, Yeh JK, Chyu MC. Green tea polyphenols improve bone microarchitecture and quality in obese female rats fed with high-fat and restricted diets. *J Bone Miner Res* 28 (S1). SUN0471, 2012.
26. Qian G, Xue K, Tang L, Wang F, Chyu MC, Pence BC, Shen CL, Wang JS. “Mitigation of Oxidative Damage by Green Tea Polyphenols and Tai Chi Exercise in Postmenopausal Women with Osteopenia”. *PLoS ONE*, 2012;7(10):e48090.
27. Chwan-Li Shen, Brenda J Smith, Di-Fan Lo, Ming-Chien Chyu, Dale M Dunn, Chung-Hwan Chen, In-Sook Kwun. “Dietary polyphenols and mechanisms of osteoarthritis”. *Journal of Nutritional Biochemistry*, 2012; 23(11):1367-1377.
28. Shen CL, Chyu MC, Wang JS (2012). Effect of Green Tea and Tai Chi on Bone Health. *The Journal of Frailty & Aging*, 1 (2): 78.
29. Chwan-Li Shen, Jay J. Cao, Raul Y. Dagda, Samuel Chanjaplammoetil, Chuanwen Lu, Ming-Chien Chyu, Weimin Gao, Jia-Sheng Wang, James K. Yeh. “Green tea polyphenols benefits body composition and improves bone quality in long-term high-fat-diet-induced obese rats”. *Nutrition Research*, 32:448-457, 2012. (13th most cited article of the journal.)
30. Cheng Ji, Richard Zheng, Dongbin Hou, Hongyang Zhu, Jianzhe Wu, Ming-Chien Chyu, and Yanzhang Ma. Pressure-induced Phase Transition in Potassium Azide up to 55 GPa. *Journal of Applied Physics*, 111, 112613 (2012); <http://dx.doi.org/10.1063/1.4726212> (5 pages).
31. Y Zhang, M Chyu, C Shen, Martial arts exercise improves quality of life in overweight/obese premenopausal women, *BMC Complementary and Alternative Medicine*, 12 (S1):P83, 12 June 2012.
32. TS Khan, MS Khan, M Chyu, ZH Ayub. “Experimental investigation of evaporation heat transfer and pressure drop of ammonia in a 60° chevron plate heat exchanger”. *International Journal of Refrigeration*, Volume 35, Issue 2, March 2012, Pages 336–348.
33. Shen CL, Cao JJ, Dagda RY, Chyu MC, Wang JS. Green tea polyphenols benefit bone health in obese female rats fed with high-fat and restricted diets. *Federation of American Societies for Experimental Biology (FASEB) Journal*, 2012, 26: 819.37.

34. Shen CL, Samathanam C, Graham S, Dagda RY, Chyu MC, Dunn DM. Green tea polyphenols and 1- α -OH-vitamin D₃ attenuate chronic inflammation-induced myocardial fibrosis in female rats. *Journal of Medicinal Food*, 2012 Mar;15(3):269-77.
35. M.-C. Chyu, Vera von-Bergen, Jean-Michel Brismee, Yan Zhang, James K Yeh and Chwan-Li Shen. Complementary and Alternative Exercises for Management of Osteoarthritis. Invited review paper, *Arthritis*, special issue: *Rehabilitation of Patients with Osteoarthritis*, Article ID 364319, 1-9. doi:10.1155/2011/364319, May 2011. [Selected by the American Academy of Pain Management as one of the “most useful to practitioners”. See AAPM e-newsletter, *Currents: Pain Management News and Research*, June, 2012.]
36. Chwan-Li Shen, Ph.D.; James K Yeh, Ph.D.; Jay J Cao, Ph.D.; Ming-Chien Chyu, Ph.D.; Jia-Sheng Wang, PhD, MD. Green tea and bone health: evidence from laboratory studies, *Pharmacological Research* (Elsevier), 64:155-161, 2011.
37. C.-L. Shen, J. K. Yeh, C. Samathanam, J. J. Cao, B. J. Stoecker, R. Y. Dagda, M.-C. Chyu, D. M. Dunn, J.-S. Wang. Green tea polyphenols attenuate deterioration of bone microarchitecture in female rats with systemic chronic inflammation. *Osteoporosis International* (2011) 22:327–337, DOI 10.1007/s00198-010-1209-2.
38. C.-L. Shen, M.-C. Chyu, J. K. Yeh, J. J. Cao. Green Tea and Bone Health: Evidence from Laboratory Studies. Invited review paper, *Pharmacological Research*, special issue: *Tea and Health*, 2011, 64:155-161.
39. Chwan-Li Shen, Samuel Chanjaplammoitol, James K Yeh, Jay J Cao, Ming-Chien Chyu, Raul Y Dagda, and Jia-Sheng Wang. Anti-obesity and osteo-protective effect of green tea polyphenols on long-term high-fat-diet-induced obesity in rats. *Federation of American Societies for Experimental Biology (FASEB) Journal*, 2011, 25:776.2.
40. Chwan-Li Shen, Ming-Chien Chyu, James K Yeh, Yan Zhang, Barbara C Pence, Carol K Felton, Jean-Michel Brismee, Raul Y Dagda, Susan Doctolero, Mary J Flores, and Jia-Sheng Wang. Effect of green tea polyphenols and Tai Chi exercise on bone health in postmenopausal women with low bone mass: a 24-week placebo-controlled randomized trial. *Federation of American Societies for Experimental Biology (FASEB) Journal*, 2011, 25:594.3.
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19. "Quenching Recovery of Tape/Film Superconductors," A. Unal and M.-C. Chyu, *Heat Transfer in Superconducting Equipment*, ASME HTD-Vol. 229, pp. 25-32, 1992.
20. "Stability Criterion for a Composite Superconductor of a Large Aspect Ratio," S. Y. Seol, and M.-C. Chyu, *Heat Transfer in Superconducting Equipment*, ASME HTD-Vol. 229, pp. 17-24, 1992.
21. "Study of Quenching and Recovery for Superconductor Wires and Cylinders," A. Unal, and M.-C. Chyu, paper LHD-11, Applied Superconductivity Conference, Chicago, 1992.
22. "Minimization of Refrigeration Power Requirement for Mechanical Supports in Cryogenic Systems," S. Y. Seol, M.-C. Chyu, T. M. Kuzay, and J. R. Hull, *Proc. of 26th Intersociety Energy Conversion Engineering Conference*, Vol. 4, pp. 532 - 537, 1991.
23. "Intrinsic Stability and Recovery Analysis for Tape/Film Type Superconductors," A. Unal, M.-C. Chyu, and T. M. Kuzay, *Proc. of 26th Intersociety Energy Conversion Engineering Conference*, Vol. 4, pp. 497 - 502, 1991.
24. "Stability Analysis for a Composite Superconductor Subjected to a Linear Thermal Disturbance," S. Y. Seol, and M.-C. Chyu, *Proc. of 26th Intersociety Energy Conversion Engineering Conference*, Vol. 4, pp. 515 - 520, 1991.
25. "Two-Dimensional Intrinsic Stability Analysis for Thin Film Superconductors," A. Unal, and M.-C. Chyu, *Proc. of 67th Annual Meeting, American Association for the Advancement of Science*, pp. 28, 1991. (Abstract)
26. "Instability Analysis of Two-Dimensional Composite Superconductors," S. Y. Seol, and M. C. Chyu, *Proc. of 67th Annual Meeting, American Association for the Advancement of Science*, pp. 30, 1991. (Abstract)
27. "Minimization of Cryogenic Refrigeration Power Requirement for Mechanical Supports of Superconducting Coils," S. Y. Seol, M.-C. Chyu, T. M. Kuzay, and J. R. Hull, *Proc. of 67th Annual Meeting, American Association for the Advancement of Science*, pp. 26, 1991. (Abstract)
28. "Characteristics of Boiling Heat Transfer in a Narrow Gap," M.-C. Chyu and S. H. R. Zaidi, *Single and Multiphase Convective Heat Transfer*, ASME HTD-Vol. 145, pp. 47-53, 1990.
29. "Effects of Cylindrical Wall Attachment on Nucleate Boiling," M.-C. Chyu and A. M. Mhgamis, *Heat Transfer with Phase Change*, ASME HTD-Vol. 114, pp. 69-74, 1989.
30. *Heat Transfer Equipment Fundamentals, Design, Applications, and Operating Problems*, ASME HTD-Vol. 108, 1989, Co-editor.
31. "Enhanced Nucleate Boiling Heat Transfer Within a Basic Geometry Found in Structured Surfaces", M.-C. Chyu and J. Fei, *Multiphase Flow, Heat and Mass Transfer*, ASME HTD-Vol. 109. pp. 73—80, 1989.
32. "Enhanced Nucleate Boiling From Two Cylinders in Line Contact", M.-C. Chyu and A. M. Mghamis, *Multiphase Flow, Heat and Mass Transfer*, ASME HTD-Vol. 109, pp. 81-86, 1989.
33. "Thermally Induced Failure of Microelectronic Structures," J. F. Cardenas-Garcia and M.-C. Chyu, ASME Paper 89-WA/EEP-41, 1989.
34. "Enhanced Boiling Heat Transfer in a Restricted Geometry", M.-C. Chyu, J. Fei, and

- J.J.Luthan, Proceedings of the 31st Heat Transfer and Fluid Mechanics Institute, Sacramento, CA, pp. 185-204, 1989.
35. “Enhanced Nucleate Boiling Heat Transfer Using a Cylindrical Attachment”, M.-C. Chyu and A. M. Mghamis, Proceedings of the 31st Heat Transfer and Fluid Mechanics Institute, Sacramento, CA, pp. 205-220, 1989.
 36. “Formation and Heat Transfer Mechanism of Vapor Mass During Nucleate Boiling”, M.-C. Chyu, *Thermal Non-Equilibrium in Two-Phase Flow*, Proceedings of the 7th Eurotherm Seminar, Rome, Italy, pp. 157-181, 1989.
 37. “A Study on the Failure of Industrial Electric Heater”, M.-C. Chyu, Proceedings of the 10th Annual Industrial Energy Technology Conference, Houston, Texas, pp. 180-185, 1988.
 38. “Behavior of a Liquid Film Observed on a Boiling Wall with High Heat Fluxes”, M.-C. Chyu, *Symposium on Thin Fluid Films*, FED-Vol. 48, ASME, pp. 65-71., 1987
 39. “Thermal Analysis on the Electric Cylindrical Test Heater for Heat Transfer Experiments”, M.-C. Chyu and A. E. Bergles, ASME Paper No. 87-HT-44, 1987.
 40. “An Analysis on Boiling Dryout in a Restricted Annular Crevice”, M.-C. Chyu, *Boiling and Condensation in Heat Transfer Equipment*, HTD-Vol. 85, ASME, pp. 1-8, 1987.
 41. “Falling Film Evaporation on a Horizontal Tube”, M.-C. Chyu and A. E. Bergles, *Multiphase Flow and Heat Transfer*, HTD-Vol. 47, ASME, pp. 39-48, 1985.
 42. “Enhancement of Horizontal Tube Spray Film Evaporators by Structured Surfaces”, M C. Chyu and A. E. Bergles, *Advances in Enhanced Heat Transfer - 1985*, HTD-Vol. 43, ASME, pp. 39-47, 1985.
 43. “Enhancement of Horizontal Tube Spray Film Evaporators”, M.-C. Chyu, A. E. Bergles, and F. Mayinger, *Heat Transfer- 1982*, Vol. 6, pp. 275—280, 1982.
 44. “Characteristics of Nucleate Pool Boiling from Porous Metallic Coatings”, A. E. Bergles and M.-C. Chyu, *Advances in Enhanced Heat Transfer - 1981*, ASME HTD-Vol. 18, pp. 61-71.
 45. “Enhancement of Nucleate Boiling by Use of Porous Metal Coatings”, A. E. Bergles and M.-C. Chyu, *AIChE Symposium Series*, Vol. 77, No. 208, pp. 73, 1981.

REFEREED CONFERENCE PRESENTATIONS

1. Chwan-Li Shen and Ming-Chien Chyu, Effects of dietary green tea polyphenols on bone biomechanical properties: a focus on bone microstructure and quality. 2017 International Conference on Healthcare Science and Engineering, June 1-3, 2017, Zhengzhou, China.
2. Chwan-Li Shen, Shengping Yang, Jean-Michael Brismee, Peihuan Tsai, Ming-Chien Chyu, Yan Zhang, Jia Han, Matthew E. Lambert. Investigation of Gait Disturbance and Grip Strength in a Rural Cohort: A Project FRONTIER study. Paper presented at the 2015 Annual Meeting, World Congress on Exercise in Medicine, and World Congress on the Basic Science of Exercise Fatigue of the American College of Sports Medicine, San Diego, CA, May 26-30, 2015.
3. S. Imam, K. Oommen, M. Weinand, M. Chyu, “Advance Warning of Epileptic Seizure Based on Complexity Measures of Cerebral Blood Flow”. Partners Again Mortality in Epilepsy (PAME) Conference, NIH Epilepsy Channels, Synapses and Circuits, Minneapolis, MN, June 19-22, 2014.
(<http://store.eventarchives.com/archive/aes/2014/pame/sessions/140601401.07/mpg4.html>)

- Imam received a Travel Award for this presentation from National Institute of Neurological Disorders and Stroke (NINDS) at the National Institutes of Health (NIH).
4. Yiran Li, K.J. Oommen, Ming-Chien Chyu, Yuanlin Zhang. A Web-Based Program for Generating Electroencephalographic (EEG) Reports. The 65th Annual Meeting of the American Epilepsy Society, 2011, Baltimore, MD.
 5. K. J. Oommen, J.A. Oommen, D.Y.C. Lie, S. Imam, M. Chyu, Y. Zhang. Relationship Between Cerebral Perfusion And EEG In The Rat Brain. The 5th International IEEE/EMBS (Institute of Electrical and Electronics Engineers / Engineering in Medicine and Biology Society) Conference on Neural Engineering, Cancun, Mexico, April 2011.
 6. Shen CL, Cao J, Dagda RY, Chanjaplammoitol S, Chyu M-C, Yeh JK. Green tea polyphenols supplementation improves bone microstructure and quality on long-term high-fat-diet-induced obesity in rats. Proceedings of American Society for Bone and Mineral Research 2011.
 7. Yanzhang Ma, Cheng Ji, Fuxiang Zhang, Dongbin Hou, Hongyang Zhu, Jianzhe Wu, Ming-Chien Chyu, Behavior of potassium azide under high pressure, Proceedings of Study of Matter at Extreme Conditions (SMEC) 2011, High Pressure Science Society of America.
 8. S.T. Imam, S. Ekwaro-Osire, and M.-C. Chyu, "Application of Probability Theory in Predicting Human Life Expectancy," Proceedings of the 2010 International Conference on Integrated Design and Process Technology, Dallas, Texas, Jun 6–11, 2010.
 9. Shen C-L, M-C Chyu, JK Yeh, CK Felton, KT Xu, BC Pence, J-S Wang. Green tea polyphenols and Tai Chi for Bone Health (experimental design). Proceedings of Support the Bone and Joint Decade-Global Network Conference, October 21-24, 2009.
 10. Yanzhang Ma, Boheng Ma, Hongyang Zhu, and Ming Chyu, Raman spectroscopy measurement of MoS₂ to 43 GPa, American Physical Society (APS) Meeting, March 2009, Pittsburgh, Pennsylvania. Boylan, M., Feng, D., Chyu, M.; Chin, Y., and Esperat, C. "Waist Circumference and Waist-to-Height Ratio are More Highly Correlated to Body Mass Index Than to Percentage Body Fat in Young Children", 2009 Food & Nutrition Conference & Expo (FNCE).
 11. M.-C. Chyu, J. Zheng, and Z. Ayub, "Boiling of Ammonia/Lubricant Mixture on an Enhanced Tube Bundle with Inlet Vapor Quality", AMM 04 - T1-04, Proceedings of 8th International Institute of Refrigeration (IIR) Gustav Lorentzen Conference on Natural Working Fluids, September 7-10, 2008, Copenhagen, Denmark.
 12. Zheng, J. X., Chyu, M.-C., and Ayub, Z. H., "Boiling on a Horizontal Plain Tube Bundle with Ammonia/Lubricant Mixture Subjected to Inlet Vapor Quality", Proceedings of 13th Int. Heat Transfer Conference, Sydney, Australia, August 13-18, 2006.
 13. Zheng, J. X., Chyu, M.-C., and Ayub, Z. H., "Boiling of Ammonia/Lubricant Mixture on a Horizontal Enhanced Tube in a Flooded Evaporator with Inlet Vapor Quality", 7th IIR Gustav Lorentzen Conference on Natural Working Fluids, Trondheim, Norway, 2006.
 14. Zheng, JX, Jin GP, Chyu M-C, Ayub ZH, "Boiling of ammonia/lubricant mixture on a horizontal tube in a flooded evaporator with inlet vapor quality", paper no. 4-a-3, The Sixth World Conference on Experimental Heat Transfer, Fluid Mechanics, and Thermodynamics, Miyagi, Japan, April 17-21, 2005.
 15. Resul Aksoy, Yanzhang Ma, Emre Selvi, Ming-C. Chyu, Atila Ertas, Allen White. "HIGH PRESSURE X-RAY DIFFRACTION STUDY OF MOLYBDENUM DISULFIDE",

International Southwest Region X 2005 Graduate Student Technical Conference, April 1-2, 2005, Lubbock, TX.

16. Aksoy, R, Y. Z. Ma, E. Selvi, M. C. Chyu, A. Ertas and A. White, Equation of state measurement of molybdenum disulfide, Study of Matter at Extreme Conditions (SMEC) Conference, 17-21 April 2005, Miami, Florida.
17. Z. H. Ayub, M.-C. Chyu, A. H. Ayub, "Limited Charge Shell and Tube Ammonia Spray Evaporator with Enhanced Tubes for Thermal Storage System", International Conference of Ammonia Refrigerating Systems, Renewal and Improvement, International Institute of Refrigeration, Ohrid, Republic of Macedonia, May 6-8, 2005.
18. Ayub, Z. H. and Chyu, M.-C., "Case Study of Ammonia Flooded Evaporator with Different Types of Carbon Steel Enhanced Tubes along the Bundle Height", Proceedings of the 6th Gustav Lorentzen Natural Working Fluids Conference, Glasgow, UK, 2003.
19. "An Experimental Study of Spray Evaporation of Ammonia in a Square-Pitch, Low-Fin Tube Bundle," X. Zeng, M.-C. Chyu, Z. H. Ayub, *Proceedings of 34th National Heat Transfer Conference* (CD-ROM), Pittsburgh, PA, August, 2000.
20. "Ammonia Spray Evaporation Heat Transfer Performance of Single Low-Fin and Corrugated Tubes," X. Zeng, M.-C. Chyu, and Z. H. Ayub, *ASME/ZSITS International Thermal Science Seminar*, Slovenia, June, 2000.
21. "Evaporation Heat Transfer Performance of Nozzle-Sprayed Ammonia on a Horizontal Tube," X. Zeng, M.-C. Chyu, and Z. H. Ayub, *Proceedings of the ASME-ZSITS International Thermal Science Seminar*, Slovenia, June, 2000.
22. "Heat and Mass Transfer Considerations of Moist Air", X. Zeng and M.-C. Chyu, Society of Automotive Engineers SAE 2000 World Congress, Detroit, MI., March 6-9, 2000.
23. "A Correlation for Nucleate Flow Boiling in Small Channels," T. N. Tran, M. W. Wambsganss, M.-C. Chyu, D. M. France. *International Conference on Compact Heat Exchangers for the Process Industries*.
24. "Two-Phase Active Thermal Control Systems for Spacecrafts," I. Y. Chen and M.-C. Chyu, *The 31st Intersociety Energy Conversion Engineering Conference*, 1996.
25. "The Design and Operational Characteristics of Ammonia Spray Evaporators," Z. H. Ayub, M.-C. Chyu, and X. Zeng, *Int. Inst. of Ammonia Refrig. (IIR) 18th Annual Meeting*, Atlanta, GA, March 3 - 6, 1996.
26. "Three-Dimensional Stability Analysis for Quenching and Recovery of Superconductor Tapes or Films", A. Unal and M.-C. Chyu, *Tenth Intersociety Cryogenic Symposium, AIChE/ASME/IIR*, Houston, TX, 1995. Also, *International Symposium on Safety of Superconductors and Related Heat Transfer at Low Temperatures*, Fukuoka, Japan, August, 1994.
27. "Stability Criterion for a Composite High-Temperature Tape/Film Superconductor", S. Y. Seol and M.-C. Chyu, *The Sixth International Symposium on Transport Phenomena*, 1993.
28. "Instability Behavior of Superconductor Wires Under Finite Linear Thermal Disturbances," A. Unal, and M.-C. Chyu, *28th Intersociety Energy Conversion Engineering Conference*, 1993.
29. "Thermal Stability Criterion for Composite Superconductor Wires," S. Y. Seol, and M.-C. Chyu, *28th Intersociety Energy Conversion Engineering Conference*, 1993.
30. "Prediction of Superconductor Behavior Subjected to a Local Thermal Disturbance", S. Y. Seol, and M.-C. Chyu, ASME Winter Annual Meeting, 1993.
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- Transfer in Superconducting Equipment*, ASME Winter Annual Meeting, 1992.
32. "Stability Criterion for a Composite Superconductor of a Large Aspect Ratio," S. Y. Seol, and M.-C. Chyu, *Heat Transfer in Superconducting Equipment*, ASME Winter Annual Meeting, 1992.
 33. "Study of Quenching and Recovery for Superconductor Wires and Cylinders," A. Unal, and M.-C. Chyu, Applied Superconductivity Conference, Chicago, 1992.
 34. "Minimization of Refrigeration Power Requirement for Mechanical Supports in Cryogenic Systems," S. Y. Seol, M.-C. Chyu, T. M. Kuzay, and J. R. Hull, *26th Intersociety Energy Conversion Engineering Conference*, 1991.
 35. "Intrinsic Stability and Recovery Analysis for Tape/Film Type Superconductors," A. Unal, M.-C. Chyu, and T. M. Kuzay, *26th Intersociety Energy Conversion Engineering Conference*, 1991.
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 41. "Effects of Cylindrical Wall Attachment on Nucleate Boiling," M.-C. Chyu and A. M. Mhgamis, *Heat Transfer with Phase Change*, ASME Winter Annual Meeting, San Francisco, 1989.
 42. "Enhanced Nucleate Boiling Heat Transfer Within a Basic Geometry Found in Structured Surfaces", M.-C. Chyu and J. Fei, ASME Winter Annual Meeting, San Francisco, 1989.
 43. "Enhanced Nucleate Boiling From Two Cylinders in Line Contact", M.-C. Chyu and A. M. Mghamis, ASME Winter Annual Meeting, San Francisco, 1989.
 44. "Thermally Induced Failure of Microelectronic Structures," J. F. Cardenas-Garcia and M.-C. Chyu, ASME Winter Annual Meeting, San Francisco, 1989.
 45. "Enhanced Boiling Heat Transfer in a Restricted Geometry", M.-C. Chyu, J. Fei, and J.J.Luthan, 31st Heat Transfer and Fluid Mechanics Institute, Sacramento, CA, 1989.
 46. "Enhanced Nucleate Boiling Heat Transfer Using a Cylindrical Attachment", M.-C. Chyu and A. M. Mghamis, 31st Heat Transfer and Fluid Mechanics Institute, Sacramento, CA, 1989.
 47. "Formation and Heat Transfer Mechanism of Vapor Mass During Nucleate Boiling", M.-C. Chyu, 7th Eurotherm Seminar, Rome, Italy, 1989.
 48. "A Study on the Failure of Industrial Electric Heater", M.-C. Chyu, 10th Annual Industrial Energy Technology Conference, Houston, Texas, 1988.
 49. "Behavior of a Liquid Film Observed on a Boiling Wall with High Heat Fluxes", M.-C. Chyu, ASME, pp. 65-71., 1987

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51. "An Analysis on Boiling Dryout in a Restricted Annular Crevice", M.-C. Chyu, ASME, ASME Winter Annual Meeting, Boston, 1987.
52. "Falling Film Evaporation on a Horizontal Tube", M.-C. Chyu and A. E. Bergles, *Multiphase Flow and Heat Transfer*, HTD-Vol. 47, ASME, pp. 39-48, 1985.
53. "Enhancement of Horizontal Tube Spray Film Evaporators by Structured Surfaces", M C. Chyu and A. E. Bergles, ASME Winter Annual Meeting, Miami Beach, FL, 1985.
54. "Enhancement of Horizontal Tube Spray Film Evaporators", M.-C. Chyu, A. E. Bergles, and F. Mayinger, International Heat Transfer Conference, Munich, Germany, 1982.
55. "Characteristics of Nucleate Pool Boiling from Porous Metallic Coatings", A. E. Bergles and M.-C. Chyu, ASME Winter Annual Meeting, 1981.
56. "Enhancement of Nucleate Boiling by Use of Porous Metal Coatings", A. E. Bergles and M.-C. Chyu, AIChE Annual Meeting, 1981.

INVITED LECTURES

- "Advances and Trends of Medical Devices for Chronic Diseases", invited opening keynote speech at the 2nd International Conference on Healthcare Science and Engineering (Healthcare'18), July 2018, Guilin, China.
- "Healthcare engineering: past, current, and future", invited opening keynote speech at the 2017 International Conference on Healthcare Science and Engineering (Healthcare 2017), June 1 – 3, 2017, Zhengzhou, China.
- "Healthcare Engineering: Inspiring Engineering Minds to Advance Human Health", Global Health Lecture Series, March 1, 2017, Texas Tech University Health Sciences Center, Lubbock, Texas.
- "Frontier Research of Orthopaedic Medicine", Chair/speaker. The Orthopaedic Forum, May 26-29, 2017, Chongqing, China.
- "Healthcare Engineering: Inspiring Engineering Minds to Advance Human Health", opening keynote speech at the 4th Annual Global Health Conference-2016, November 18, 2016, Kaohsiung, Taiwan.
- "Healthcare Engineering Defined", The International Conference on Biomedical and Health Informatics (ICBHI2015), Haikou, China, 8-10 October 2015.
- "Healthcare Engineering for Nursing", Keynote Speaker, 8th Healthcare and Nursing 2015 Workshop, Jeju, Korea, December 14-16, 2015.
- The International Conference and Exhibition on Mechanical & Aerospace Engineering, Oct 05-07, 2015, San Francisco, USA.
- The Annual World Congress of Orthopaedics 2015 (WCORT-2015), Xi'an, China, September 24-26, 2015. Rheumatology, Immunology, Inflammation and Osteoarthritis Session.
- Annual World Congress of Smart Materials-2015 (WCSM-2015), March 23-25, 2015, Busan, Republic of Korea.
- "Mitigation of Oxidative Damage by Green Tea Polyphenols and Tai Chi Exercise in Postmenopausal Women", 12th Annual Congress of International Drug Discovery Science & Technology (IDDST 2014), November 18-20, 2014, Suzhou, China.
- "Mechanical Engineering for Healthcare", Department of Mechanical Design Engineering, Andong National University, Andong, S. Korea. June 11, 2012.

“Healthcare Engineering: Healthcare Problems, Engineering Solutions”, Biomedical Science Seminar Series, Andong National University, Andong, S. Korea. June 10, 2012.

“Development of a Seizure Warning System Using Continuous Cerebral Perfusion Blood Flow” (presented by Senay Imam, PhD student), National Institute of Standards and Technology, Gaithersburg, MD, July 26, 2010.

“Healthcare Engineering and Women’s Health”, Laura W. Bush Institute for Women’s Health, Amarillo, TX, August 12, 2008.

“Physical Activity and Bone Health.” Garrison Institute on Aging, Texas Tech University Health Sciences Center, Lubbock, TX, Jan. 18, 2008.

"Tai Chi and Women's Health - Biomechanics". National Women's Health Week Seminar Series, Texas Tech University Health Sciences Center, Lubbock, TX, sponsored by U.S. Department of Health and Human Services, Office on Women's Health, May 15, 2006.

"Benefits of Tai Chi to Type 2 Diabetes". Diabetes Education Center, Texas Tech University Medical Center, June, 2005.

“Tai Chi and Health in the Elderly”, Grand Court Lubbock Retirement Community, Lubbock, Texas, January 6, 2005.

“Comparison of Effects of Resistance Training and Tai Chi on Bone Metabolism of the Elderly”, Carillon Senior Living Campus, Lubbock, TX, 2004.

“New Developments in Ammonia Evaporators”, West Texas Chapter of ASHRAE, 2000.

“Applications of Superconductivity”, ASME Texas Section, 1996.

“ASHRAE Research Projects Conducted at Texas Tech University”, West Texas Chapter of ASHRAE, May, 1994.

“Study of Plate-Fin Heat Exchanger and Cold Plate for the Thermal Control System of Space Station,” McDonnell Douglas Space Systems Company, Space Station Division, Houston, Texas, July, 1992.

“Questionable Issues in Superconductor Stability Theory”, Argonne National Laboratory, Argonne, IL, 1989.

A series of lectures on Enhanced Boiling Heat Transfer, Beijing Polytechnic University, Beijing, China, 1988.

“Analysis of Local Boiling Dryout Phenomenon in a Tube-Baffle Region”, 18th Annual Pittsburgh Conference on Modeling and Simulation, Pittsburgh, PA, 1987.

“Enhancement of Falling-Film Evaporator Using Structured Heat Transfer Surfaces”, Columbia University, New York, NY, 1986.

“Enhancement of Nucleate Boiling Heat Transfer in Industrial Equipment”, The Trane Company, La Crosse, WI, 1983.

GRADUATE STUDENTS & POSTDOCTORAL RESEARCHERS SUPERVISED (current affiliation parenthesized)

1. Dylan Babb-Ampson (Weatherford International)
2. Valerie Boelmann (Assistant Vice President, UnityPoint Health, Des Moines, Iowa)
3. Samuel Chanjaplammoetil (Director, Technology & Systems Support, Texas Tech University Health Sciences Center, Amarillo, Texas).
4. Jessica Cortez (US Dept. of Energy).
5. Mark J. Davis (Texas Health Presbyterian Hospital, Dallas).
6. Kazeem Dayo (Accenture Ltd, New York).
7. Sergio Diaz (American Construction Metals, Houston)

8. Johnson Fei (Ford Motor Company).
9. Justin Hopple (US Army).
10. Bernard Hurtault (Texas Instruments Inc.)
11. Cheng Ji (Argone National Lab, Chicago).
12. Yinping Jiao (Professor, South Texas College, McAllen, Texas).
13. Guangpu Jin (Applied Materials, Inc. Santa Clara, California).
14. Kushal Janardan Kapse (Aphasia Research Laboratory, Boston University).
15. Jarod King (Blackboard Inc.).
16. Deepak Kumar (Apple Inc.).
17. Yiran Li (Texas Tech University).
18. Zhaoxuan Li (University of Texas, San Antonio).
19. Daniel Lloyd
20. J. J. Luthan (Professor, Trisakti University, Indonesia)
21. Andrew Madunemi, MD, MBA (Surgeon, Charlotte, NC).
22. Amos Magallan (Fanning and Associates, Inc.)
23. Adnan Mghamis (Southwestern Bell, Kansas City, Missouri)
24. George Morales (Associate Vice President, Texas Tech University Healthcare Sciences Center).
25. Chris Moreau (University of Texas Health Science Center at San Antonio | UT HSC - Transplant Center)
26. Sandeep Nair (Minerva Home Health, Inc., Texas).
27. Tri Nguyen (Aruba Networks, San Francisco).
28. Isaac Olivas (ConocoPhillips, Midland, Texas)
29. Kevin Ormand (Director, Chartis Group).
30. Manhas Pranav (IBM).
31. Seoung Yun Seol (Professor, Chungnam National University, Korea).
32. Gina Sewell (Vitality Institute, Chicago).
33. Jeff Snider (C2 Technologies, Abilene, Texas)
34. Senay N. Tewolde (Advancement of Military Medicine, Navy Medical Research Unit, San Antonio, Texas).
35. Thanh Tran (Naval Surface Warfare Center, Washington DC).
36. Jeff Turner (Manager, Logan District Hospitals, Australia).
37. Ahmet Unal (Professor, Karadeniz University, Turkey).
38. Ganesh Venkatesan (CD-adapco, Austin, Texas)
39. Lyle Villarta (Texas Tech University).
40. Xin Zeng (Air International Thermal Systems, Shanghai, China).
41. Jianxue Zheng (Haliburton, Houston, Texas).
42. Liang Ye (Chongqing University, Chongqing, China)
43. Li Yi (Division of Standardization System Research, National Institutes for Food and Drug Control, Beijing, China)

TEACHING EXPERIENCE

GRADUATE

Conduction Heat Transfer

Convection Heat Transfer

Two-Phase Flow and Heat Transfer

UNDERGRADUATE

Heat Transfer

Solar Energy Utilization

Fluid Mechanics

Advanced Heat Transfer	Engineering Thermodynamics I
Analysis of Engineering Systems	Engineering Thermodynamics II
Intermediate Fluid Mechanics	Thermal-Fluid Systems
Introduction to Microelectromechanical Systems (MEMS) (co-instructor)	Thermal-Fluid Systems Laboratory
Healthcare Engineering	Instrumentation and Measurement I and II
	Healthcare Engineering
	Heating, Ventilating, and Air-Conditioning Systems Design

NEW COURSE DEVELOPMENT

Developed and taught Healthcare Engineering, a brand-new course (no textbook on the market, no standard curriculum) covering engineering involved in all major aspects of healthcare, including (a) engineering for healthcare intervention and (b) engineering for healthcare systems, to prepare students of various engineering majors for a career in healthcare industry or graduate education in Healthcare/Biomedical Engineering.

CONTINUING EDUCATION SHORT COURSES IN HEALTHCARE ENGINEERING

(contents updated constantly to keep up with rapid technology advancements)

1. Artificial intelligence for healthcare
2. Artificial intelligence for diagnosis
3. Assistive devices
4. Brain monitoring devices
5. Design of medical devices
6. Digital health
7. Drug delivery
8. Engineering and devices for arthritis
9. Engineering and devices for cancer
10. Engineering and devices for cardiovascular disease
11. Engineering and devices for concussion
12. Engineering and devices for diabetes
13. Engineering and devices for diagnosis
14. Engineering and devices for nanomedicine
15. Engineering and devices for rehabilitation
16. Engineering and devices for surgery
17. Healthcare networks and communications
18. Internet of medical things
19. Manufacturing of medical devices and 3D printing
20. Medical monitoring devices
21. Ophthalmology devices
22. Prostheses
23. Smart phone for healthcare
24. Virtual reality, augmented reality and mixed reality for healthcare
25. Wearable medical devices

PROFESSIONAL CONFERENCE SERVICES

1. International Scientific Committee, the 2nd Global Conference on Healthcare Systems

- Engineering and Management (GCHSEM), 2020, Antalya, Turkey.
2. International Scientific Committee, Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE), 2020, Antalya, Turkey.
 3. International Scientific Committee, Global Conference on Industrial Engineering (GCIE), 2020, Antalya, Turkey.
 4. International Scientific Committee, Global Conference on Engineering and Technology Management (GCETM), 2020, Antalya, Turkey.
 5. Conference Co-Chair, International Conference of Healthcare Science and Engineering, Guilin, China, June 1-3, 2018.
 6. Track Chair, *Medical Devices*, International Conference of Healthcare Science and Engineering, Guilin, China, June 1-3, 2018.
 7. Scientific Advisory Board, The Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE) 2018, 21-22 June, 2018, Cappadocia, Turkey.
 8. Scientific Advisory Board, The 3rd Global Conference on Industrial Engineering (GCIE), 21-22 June, 2018, Cappadocia, Turkey.
 9. Scientific Advisory Board, The 5th Global Conference on Engineering and Technology Management (GCETM), 21-22 June, 2018, Cappadocia, Turkey.
 10. Scientific Advisory Board, The 4th Global Conference on Healthcare Systems Engineering and Management (GCHSEM), 21-22 June, 2018, Cappadocia, Turkey.
 11. Technical Program Committee, 2017 International Conference on Biological Sciences and Technology, November 17th-19th, 2017, Zhuhai, China.
 12. International Chair, World Congress of Biomedical Engineering 2017, Nov 9-11, 2017, Xi'an, China.
 13. Program Chair, 2017 International Conference on Healthcare Science and Engineering (Healthcare 2017), June 1 – 3, 2017, Zhengzhou, China.
 14. International Scientific Committee, Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE) 2017, Vienna, Austria.
 15. International Scientific Committee, the 1st Global Conference on Industrial Engineering (GCIE), 2017, Vienna, Austria.
 16. International Scientific Committee, the 3rd Global Conference on Engineering and Technology Management (GCETM), 2017, Vienna, Austria.
 17. International Scientific Committee, the 2nd Global Conference on Healthcare Systems Engineering and Management (GCHSEM), 2017, Vienna, Austria.
 18. Scientific Advisory Board, the Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE) 2016, July 14-15, 2016, Istanbul, Turkey.
 19. Scientific Advisory Board, the 1st Global Conference on Industrial Engineering (GCIE), 2016, Istanbul, Turkey.
 20. Scientific Advisory Board, the 3rd Global Conference on Engineering and Technology Management (GCETM), 2016, Istanbul, Turkey.
 21. Scientific Advisory Board, the 2nd Global Conference on Healthcare Systems Engineering and Management (GCHSEM), 2016, Istanbul, Turkey.
 22. Technical program committee, International Conference on Intelligent Cloud Computing, Wuhan, China, December 17-18, 2016.
 23. Symposium organizer and chair, “Big data analytics for healthcare”. International Conference of Numerical Analysis and Applied Mathematics 2015 (ICNAAM 2015), September 2015, Rhodes, Greece.

24. Scientific Advisory Board, 2nd Global Conference on Engineering & Technology Management (GCETM), September 4-5, 2015, Chicago, Illinois, USA.
25. The 2nd Annual World Congress of Orthopaedics 2015 (WCORT-2015). Chair: Rheumatology, Immunology, Inflammation and Osteoarthritis, Xi'an, China, September 24-26, 2015.
26. Technical Program Committee Member, The International Conference on Biological Information and Engineering (ICBIE 2015), May 2015, Yichang, China.
27. Organizing Committee Member, Industrial Engineering-2014, Dec 08-10, 2014, San Francisco, USA.
28. Member of Organizing Committee, International Conference and Exhibition on Mechanical & Aerospace Engineering (Mech Aero-2013), September 30-October 2, 2013, San Antonio, TX.
29. International Advisory Board, International Conference on Intelligence Fusion (ICIF2013), June 2013, Busan, Korea.
30. Session organizer, Engineering for Exercise/Sport Equipment Design, American College of Sport Medicine Annual Meeting, 2013.
31. Organizing/Technical Program Committee of MASAUM International Conferences, 2012.
32. Member, International Scientific Committee of the inaugural 2009 US-EU-China Thermophysics Conference - Renewable Energy (UECTC-RE), Beijing, 2009.
33. Member, Program Committee, the Eighth World Conference on Integrated Design & Process Technology, Beijing China, June, 2005.
34. Member, Program Committee, the Seventh World Conference on Integrated Design & Process Technology, Beijing China, June, 2003.
35. Paper session co-chair and co-organizer: "Cryogenic Heat Transfer in Energy Engineering", 2002 International Mechanical Engineering Congress and Exposition (ASME), New Orleans, LA.
36. Paper session co-chair and co-organizer: "Miniature Refrigeration Systems", 2002 International Mechanical Engineering Congress and Exposition (ASME), New Orleans, LA.
37. Paper session chair & organizer, "Boiling and Condensation in Heat Transfer Equipment", National Heat Transfer Conference, Anaheim, CA, June, 2001.
38. Paper session co-chair and co-organizer, "Cryogenic Engineering", 2001 ASME International Mechanical Engineering Congress & Exposition, New York City, New York, November, 2001.
39. Paper session chair and organizer, "Heat Transfer and Enhancement in Heat Exchanger System-II", ASME/AIChE/ANS National Heat Transfer Conference, August, 2000, Pittsburgh, PA.
40. Paper session co-chair and co-organizer, "Heat Transfer and Enhancement in Heat Exchanger System-I", ASME/AIChE/ANS National Heat Transfer Conference, August, 2000, Pittsburgh, PA.
41. Paper session co-organizer, "Boiling and Condensation in Heat Transfer Equipment", 1999 ASME/AIChE National Heat Transfer Conference, Albuquerque, NM.
42. Paper session co-organizer, "Advancements in Heat Transfer Equipment Technology", 1998 IMECE, ASME, Anaheim, CA.
43. Paper session co-organizer, "Low-Temperature Electronics", 1997 ASME International Mechanical Engineering Congress & Exposition, Dallas, TX.

44. Paper session co-chair, “Superconductivity Applications”, 31st Intersociety Energy Conversion Engineering Conference, Aug., 1996, Washington DC.
45. Paper session co-chair, 1995 National Heat Transfer Conference, Portland, Oregon.
46. Paper session co-chair, Heat Transfer Equipment Fundamentals, Design, Applications, and Operating Problems, ASME Winter Annual Meeting, 1989.

REVIEW SERVICES

- Reviewer for US Army Medical Research and Materiel Command, Congressionally Directed Medical Research Programs (<http://cdmrmr.army.mil/prmrmr>), 2010-.
- Reviewer, Georgian National Science Foundation, Tbilisi, Republic of Georgia. 2008 -.
- Review Panelist, Division of Industrial Innovation and Partnerships (IIP), National Science Foundation, 2007.
- Review Panelist, Thermal Transport Processes, National Science Foundation, 2007.
- Reviewer/consultant, South African Medical Research Council, Department of Health, Republic of South Africa, 2007.
- Reviewer, US Civilian Research and Development Foundation, National Science Foundation, 2004.
- Reviewer, National Research Council, Cooperation in Applied Science and Technology Program. 1995 - present.
- Reviewer, U. S. Department of Agriculture, Small Business Innovation Research Program, 1992 - present.
- Consultant, Sandia National Laboratories, Flooded Cavity Boiling Research for Heavy Water New Production Reactor, 1993.
- Review Panelist, U.S. Department of Energy, Superconductivity and Ceramic Materials Program, 1992.
- Reviewer, National Science Foundation, Division of Chemical and Transport Systems, 1985 - present
- Reviewer, Kansas Defense 2010 DEPSCoR program.
- Reviewer, US Civilian Research and Development Foundation.
- Journal Reviewer:
1. *Advances in Orthopedics and Sports Medicine*
 2. *Applied Clinical Informatics (official journal of the International Medical Informatics Association and the Association of Medical Directors of Information Systems)*
 3. *Applied Mechanics Reviews (ASME)*
 4. *Applied Superconductivity*
 5. *Applied Thermal Engineering*
 6. *ASHRAE Transactions*
 7. *Canadian Journal of Chemical Engineering*
 8. *Chemical Engineering Communications*
 9. *Chemical Engineering Research and Design (Official journal of the European Federation of Chemical Engineering)*
 10. *Clinical Rehabilitation*
 11. *Cryogenics*
 12. *Experimental Heat Transfer*
 13. *Experimental Thermal and Fluid Science*

14. *Health Promotion Practice*
15. *Heat Transfer Engineering*
16. *Heat and Fluid Flow*
17. *IEEE Transactions on Components and Packaging Technologies*
18. *International Journal of Heat and Fluid Flow*
19. *International Journal of Heat and Mass Transfer*
20. *International Journal of Heating, Ventilating, Air-Conditioning and Refrigerating Research (ASHRAE)*
21. *International Journal of Numerical Methods for Heat & Fluid Flow*
22. *International Journal of Orthopaedics and Musculoskeletal Disorders*
23. *International Journal of Transport Phenomena*
24. *ISRN Mechanical Engineering*
25. *Journal of Advances in Medicine and Medical Research*
26. *Journal of Electronics Cooling and Thermal Control*
27. *Journal of Energy Resources Technology (ASME)*
28. *Journal of Engineering and Technology Research*
29. *Journal of Enhanced Heat Transfer*
30. *Journal of Functional Foods*
31. *Journal of Health Science Studies*
32. *Journal of Healthcare Engineering*
33. *Journal of Heat Transfer*
34. *Journal of Mechanical Science and Technology*
35. *Journal of Nutritional Biochemistry*
36. *Journal of Orthopaedics and Physiotherapy*
37. *Journal of Thermophysics and Heat Transfer (AIAA)*
38. *Materials*
39. *Mediators of Inflammation*
40. *Microscale Thermophysical Engineering*
41. *Online Journal of Medicine and Medical Science Research*
42. *Open Journal of Orthopedics*
43. *Sustainable Cities and Society*

MAJOR INTRAMURAL SERVICES

Koh Scholarship Committee, the largest endowed scholarship (\$4.1 million) in Texas Tech University. Founding member, 1999-2015; Chair, 2008-2015.

Horn Professor Nomination Review Committee

Tenure and Promotion Committee (College of Engineering)

Tenure and Promotion Guidelines Committee (College of Engineering)

Academic Programs Committee (College of Engineering)

Honors and Awards Committee (College of Engineering)

Enrollment Management Committee (College of Engineering)

Assessment Committee (College of Engineering)

Chair, Accreditation (ABET) Committee

Chair, Scholarship Committee

Faculty Affairs Committee

Graduate Affairs Committee, Chair

Faculty Search Committees
Chair, Laboratory Committee
Grade appeal committee

CONSULTING EXPERIENCE

Lockheed Martin Vought Systems, Dallas, Texas.
Sandia National Laboratory, Albuquerque, New Mexico.
Texas Instruments, Dallas, Texas.
Whirlpool Corporation, Benton Harbor, Michigan.
Armstrong World Industries, Inc., Lancaster, Pennsylvania.
Joshi Production Technologies, Inc., Tulsa, Oklahoma.
Hobbs Bonded Fibers, Groesbeck, Texas.
Medadvances, Inc., Lubbock, Texas.
Black and Veatch, Engineers-Architects, Kansas City, Missouri.

SOCIETY MEMBERSHIPS

American Society of Mechanical Engineers
American College of Sport Medicine
Healthcare Engineering Alliance Society
American Society for Engineering Education
National Society of Professional Engineers
Pi Tau Sigma

CITIZENSHIP

USA