

Curriculum Vitae

Yunho Hwang

1. Personal Information.

- **Appointment:** Department of Mechanical Eng., Univ. of Maryland, College Park, MD
- **Current Rank:** Research Professor since 2013

- **Professional Background:**

ASHRAE Fellow, 2019
ASME Fellow, 2014
ASME AESD Executive Committee, Chair, 2018-2019
ASME IMECE, Energy Track Co-Chair, 2016-2018
ASME Energy and Sustainability Conference, General Chair, 2015; Program Chair, 2014
International Sorption Heat Pump Conference, General Chair, 2014
ASHRAE, Refrigeration Committee, 2017-Current
IIR LCCP Working Group, Chair, 2012-2016; Commission B1 Vice President, 2014-2018
Editor in Energy since 2015 and Int. Journal of AC&R since 2013

- **Educational Background:**

Year	Degree	Field	Institution
1997	Ph.D.	Mechanical Engineering	University of Maryland, College Park, MD, USA
1995	M.S.	Mechanical Engineering	University of Maryland, College Park, MD, USA
1983	B.E.	Mechanical Engineering	Korea University, Seoul, Korea

- **Employment Background:**

2009-Present	Associate Director, Center for Environmental Energy Engineering, College Park, MD
2013-Present	Research Professor, Dept. of Mechanical Eng., Univ. of Maryland, College Park, MD
2004-2013	Research Associate Professor, Dept. of Mechanical Eng., Univ. of Maryland, College Park, MD
1996-2004	Faculty Research Assistant, Dept. of Mechanical Eng., Univ. of Maryland, College Park, MD
1993-1996	Graduate Research Assistant, Dept. of Mechanical Eng., Univ. of Maryland, College Park, MD
1983-1993	Senior Researcher, R&D Center, Samsung Electronics Co., Suwon-city, Korea

2. Research Experience.

- Working Fluids
- Heat Transfer
- Compact Heat Exchangers
- Vapor Compression, Sorption Cycles and Caloric Cooling
- Electrochemical Compression
- Alternative Cooling Technologies and Applications
- Advanced Energy Conversion Systems and Integration of Thermal Systems
- Renewable Energy
- Waste Heat Utilization

3. Research, Scholarly and Creative Activities.

Total: 303 publications; 10 Books/Book Chapters; 133 Journal papers; 148 Conference papers; 12 patents; Scopus Citations: 3,373; h-index: 32 (as of 02/05/2019)

a. Books

i. Books authored.

1. Radermacher, R. and Y. Hwang, Vapor Compression Heat Pumps with Refrigerant Mixtures, Published by CRC Press, 2005, Original.
2. Hwang, Y., Technical Heat Transfer, Published by Samsung Electronics Co., 1988, Original.

ii. Chapters in books.

1. Li, Gang, Y. Hwang*, R. Radermacher, Chapter 4: Cold Thermal Energy Storage Materials and Applications Toward Sustainability in Book Edition of *Energy Solutions to Combat Global Warming*, ISBN: 978-3-319-26950-4, Springer, pp. 67-117, April 2017, Original.
2. Lee, H. and Y. Hwang*, Chapter 7: Numerical and Experimental Investigation on Solid Desiccant Assisted Mobile Air Conditioning System in Book Edition of *Desiccant Heating, Ventilating and Air-Conditioning System*, ISBN: 978-981-10-3047-5, Springer, pp. 167-195, April 2017, Original.
3. Li, Gang, Y. Hwang*, Chapter 8: Energy Storage Systems for Buildings in Handbook of Integrated and Sustainable Buildings Equipment and Systems; Volume-I: Energy Systems, ISBN: 9780791861271, ASME Press, New York, 2017, Original.
4. Ling, J., Y. Hwang*, R. Radermacher, Chapter: Separate Sensible and Latent Cooling in Book Edition of *Desiccant-Assisted Cooling: Fundamentals and Applications*, ISBN: 978-1-4471-5564-5, Springer, pp. 143-187, December 2013, Original.
5. Hwang, Y. *, A. Alabdulkarem, A. Mortazavi, R. Radermacher, Chapter 5: Natural Gas Liquefaction Cycle Enhancements and Optimization in Fundamentals of LNG Plant Design, in *Handbook of Liquefied Natural Gas*, 1st Edition, ISBN: 9780124045859, The Elsevier, Oct. 24, 2013, Original.
6. Leighton, D., Y. Hwang*, R. Radermacher, Chapter: Heat Pump Water Heaters in Novel Concepts for Energy-Efficient Water Heating Systems: Theoretical Analysis and Experimental Investigation (Energy Science, Engineering and Technology), March 2013, Springer, Inc., ISBN-13: 9781624170706, Original.
7. Gluesenkamp, K., Radermacher, R. and Hwang, Y., Chapter 4: Thermally driven heat pumps for use in combined cooling, heating and power in Kühn, A., ed. *Handbook of International Energy Agency Annex 34: Thermally Driven Heat Pumps for Heating and Cooling*, 2013, Universitätsverlag der TU Berlin, ISBN (online): 978-3-7983-2596-8.
8. Hwang, Y. *, Chapter: Alternative Refrigeration Cycle, in Book Edition of *Automotive Air-Conditioning*, 2nd Edition, Published by Denso Corp., 2002, Original.

b. Peer Reviewed Journal Papers (133 papers, *: Corresponding author).

1. Dhumane, R., Y. Qiao, J. Ling, J. Muehlbauer, V. Aute, Y. Hwang, R. Radermacher, Improving System Performance of a Personal Conditioning System integrated with Thermal Storage, *Applied Thermal Engineering*, 147, 40-51, January 2019.
2. Su, W., Y. Hwang, Y. Shao, S. Deng, L. Zhao, X. Nie, Y. Zhang, Error analysis of ORC performance calculation based on the Helmholtz equation with different binary interaction parameters of mixture, *Energy*, 166, 414-425, January 2019.
3. Su, W., Y. Hwang, S. Deng, N. Zheng, S. Deng, L. Zhao*, Experimental study on the constituent separation performance of binary zeotropic mixtures in horizontal branch T-junctions, *Int. J. of Heat and Mass Transfer*, 127B, 76-87, December 2018.
4. Kennett, R., T. Cao, Y. Hwang*, CFD Modeling and Testing of an Extended-duct Air Delivery System in High Bay Buildings, *Science and Technology for the Built Environment*, Published Online, Oct. 10, 2018, doi: <https://doi.org/10.1080/23744731.2018.1495016>.
5. Wang, J., M. Li, Y*. Hwang, Modeling of Film Condensation Flow in Oval Microchannels, *Int. J. of Heat and Mass Transfer*, 126A, 1194-1205, 11/2018.
6. Su, W., Y. Hwang, S. Deng, N. Zheng, L. Zhao*, P. Liu, Experimental study on phase separation of refrigerant at horizontal T-junction, *Int. J. of Multiphase Flow*, 105, 217-233, August 2018.

7. Su, W., Y. Hwang, S. Deng, L. Zhao*, D. Zhao, Thermodynamic performance comparison of Organic Rankine Cycle between zeotropic mixtures and pure fluids under open heat source, *Energy Conversion and Management*, 165, 720-737, June 2018.
8. Lin, X., Jiazhen Ling, Yunho Hwang*, Reinhard Radermacher, Byungsoon Kim, Improvement of variable refrigerant flow system performance using energy saving control strategy and chilled water storage, *Science and Technology for the Built Environment*, 24(5), 483-491, 02/26/2018.
9. Rang Tu, Yunho Hwang, Efficient configurations for desiccant wheel cooling systems using different heat sources for regeneration, *Int. J. of Refrigeration*, 86, 14-27, February 2018.
10. Rang Tu, Yunho Hwang, Tao Cao, Mingdong Hou, Hansong Xiao, Investigation of adsorption isotherms and rotational speeds for low temperature regeneration of desiccant wheel systems, *Int. J. of Refrigeration*, 86, 495-509, February 2018.
11. Cao, T., Y. Hwang*, R. Radermacher, Development of an Optimization Based Design Framework for Microgrid Energy Systems, *Energy*, 140(1), 340-351, December 2017.
12. Huang, Z., J. Ling, Y. Hwang*, V. Aute, R. Radermacher, Design and Numerical Parametric Study of a Compact Air-Cooled Heat Exchanger, *STBE*, 23(6), June 28, 2017.
13. Huang, Z., Y. Hwang*, R. Radermacher, **Review Article**: Review of Nature-inspired-Heat Exchanger Technology, *Int. J. of Refrigeration*, 78., 1-17, June 2017.
14. Choi, S., J. Oh, Y. Hwang, H. Lee*, Life Cycle Climate Performance Evaluation (LCCP) on Cooling and Heating Systems in South Korea, *Applied Thermal Engineering*, 120(25), 88-98, June 2017.
15. Rang Tu, Yunho Hwang, Fei Ma, Performance analysis of a new heat pump driven multi-stage fresh air handler using solid desiccant plates, *Applied Thermal Engineering*, 117 (5), 553-567, May 2017.
16. Ye Tao, William Gibbons, Yunho Hwang, Reinhard Radermacher and Chunsheng Wang, Electrochemical ammonia compression, *ChemComm*, 53, 5637, April 2017.
17. Wang Ji, Jun Ming Li, Yunho Hwang, Flow Pattern Transition During Condensation of R134a and R1234ze(E) in Microchannel Arrays, *Applied Thermal Engineering*, 115, 244-255, March 2017.
18. Lee, M., H. Lee, Y. Hwang, R. Radermacher, H.M. Jeong, Optimization of Two-Phase R600a Ejector Geometries Using a Non-Equilibrium CFD Model, *Applied Thermal Engineering*, V. 109(A), pp. 272-282, Oct. 2016.
19. Huang, Z., Z. Li, Y. Hwang*, R. Radermacher, Application of entransy dissipation based thermal resistance to design optimization of a novel finless evaporator, *Science China Technological Sciences*, V. 59, Issue 10, pp 1486–1493, October 2016.
20. Rang Tu, Xiao-Hua Liu, Yunho Hwang, Fei Ma, Performance analysis of ventilation systems with desiccant wheel cooling based on exergy destruction, *Energy Conversion and Management*, V. 123 (1), pp. 265-279, September 2016.
21. Mortazavi, Amir, Alabdulkarem, A., Y. Hwang*, R. Radermacher, Development of a Robust Refrigerant Mixture for Liquefaction of Uncertain Natural Gas Compositions, *Energy*, V 113, pp. 1042-1050, August 2016.
22. Qian, S., Y. Geng, Y. Wang, T. Pillsbury, Y. Hada, Y. Yamaguchi, K. Fujimoto, Y. Hwang, et al., Elastocaloric effect in CuAlZn and CuAlMn shape memory alloys under compression, *Philosophical Transactions of The Royal Society A Mathematical Physical and Engineering Sciences* 374(2074):20150309, August 2016.
23. Lee, H., X. Lin, Y. Hwang*, R. Radermacher, LCCP Evaluation on Various Vapor Compression Cycle options and Low GWP Refrigerants, *Int. J. of Refrigeration* V.70, pp. 128-137, July 2016.
24. Cao, T., H. Lee, Y. Hwang*, R. Radermacher, H. Chun, Modeling of Waste Heat Powered Energy System for Container Ships, *Energy*, V.106, pp 408-421, July 2016.
25. Nan Zheng, Yunho Hwang, Li Zhao, Shuai Deng*, Experimental study on the distribution of constituents of binary zeotropic mixtures in vertical impacting T-junction, *IJHMT*, V.97, pp. 242-252, 2016.

26. Nan Zheng, Li Zhao, Yunho Hwang, Jing Zhang, Xingyang Yang, Experimental study on two-phase separation performance of impacting T-junction, *Int. J. of Multiphase Flow*, V. 83, pp. 172-182, July 2016.
27. Lee, H., X. Lin, Y. Hwang*, R. Radermacher, Performance Investigation on Solid Desiccant Assisted Mobile Air Conditioning System, *Applied Thermal Engineering*, V.103, pp. 1370-1380, June 2016.
28. Zili Yang, Kaisheng Zhang, Yunho Hwang, Zhiwei Lian*, Performance investigation on the ultrasonic atomization liquid desiccant regeneration system, *Applied Energy*, V. 171, 12-25, June 2016.
29. Pesaran, A., H. Lee, Y. Hwang*, R. Radermacher, H. Chun, **Review Article:** Numerical Simulation of Adsorption Heat Pumps, *Energy*, V.100, pp. 310-320, April 2016.
30. Qian, S., Y. Geng, Y. Wang, J. Ling, Y. Hwang*, R. Radermacher, Ichiro Takeuchi, Jun Cui, **Review Article:** A review of elastocaloric cooling: materials, cycles and system integrations, *Int. J. of Refrigeration*, V. 64, pp. 1-19, April 2016.
31. Qian, S., Y. Geng, Y. Wang, J. Muehlbauer, J. Ling, Y. Hwang*, R. Radermacher, Ichiro Takeuchi, Design of a hydraulically driven compressive elastocaloric cooling system, *STBE*, V. 22 (5), 500-506, 03/2016.
32. Ali Al-Aili, Yunho Hwang and Reinhard Radermacher, Solar hybrid air conditioner: Model validation and optimization, *J. of Solar Engineering*, V.138, Paper No.: SOL-15-1174, 06/2016.
33. Lin, X., Hoseong Lee*, Yunho Hwang, Reinhard Radermacher, Byungsoon Kim, A New Variable Refrigerant Flow System Simulation Approach in EnergyPlus, *Int. Journal of Air-Conditioning and Refrigeration*, V.24 (1), 03/2016.
34. Qian, S., D. Nasuta, A. Rhoads, Y. Wang, Y. Geng, Y. Hwang*, R. Radermacher, I. Takeuchi, Not-in-kind cooling technologies: A quantitative comparison of refrigerants and system performance, *Int. J. of Refrigeration*, V. 62, pp. 177-192, 02/2016.
35. Tao, Y., H. Lee, Y. Hwang, R. Radermacher, C. Wang, Electrochemical Compressor Driven Metal Hydride Heat Pump, *Int. J. of Refrigeration*, V.60, pp. 278-288, 08/2015.
36. Lin, X., Lee, H., Y. Hwang*, R. Radermacher, **Review Article:** A Review of Recent Development in Variable Refrigerant Flow Systems, *Science and Technology for the Built Environment*, 21(7), pp. 917-933, 07/2015.
37. Lin, X., Lee, H*, Hwang, Y., Radermacher, R., Oh, S., Field Test of Multi-Functional Variable Refrigerant Flow System, *Science and Technology for the Built Environment*, 21(5), pp. 648-6547, 05/2015.
38. Lee, H., Y. Hwang*, I. Song, K. Jang, Transient thermal model of passenger car's cabin and implementation to saturation cycle with alternative working fluids, *Energy*, V.90(2), pp. 1859-1868, 07/26/2015.
39. Park, C., H. Lee, Y. Hwang*, R. Radermacher, **Review Article:** Recent advances in vapor compression cycle technologies, *Int. J. of Refrigeration*, V. 60, pp. 118-134, 12/2015.
40. Alabdulkarem, A., R. Eldeeb, Y. Hwang*, V. Aute, R. Radermacher, Testing, Simulation and Soft-Optimization of R410A Low-GWP Alternatives in Heat Pump System, *Int. J. of Refrigeration*, V. 60, pp. 106-117, 12/2015.
41. Cao, T., H. Lee, Y. Hwang*, R. Radermacher, H. Chun, Performance investigation of engine waste heat powered absorption cycle cooling system for shipboard applications, *Applied Thermal Engineering*, V. 90 (5), pp. 820-830, 11/2015.
42. Qian, S., Alabdulkarem, A., Ling, J., Muehlbauer, J., Hwang, Y., Radermacher, R., Takeuchi, I., Performance enhancement of a compressive thermoelastic cooling system using multi-objective optimization and novel designs, *Int. J. of Refrigeration*, V. 57, pp. 62-76, 09/2015.
43. Qian, S., Ling, J., Hwang, Y., Radermacher, R., Takeuchi, I., Thermodynamics cycle analysis and numerical modeling of thermoelastic cooling systems, *Int. J. of Refrigeration*, V. 56, pp. 65-80, August 2015.
44. Alabdulkarem, A, Y. Hwang*, R. Radermacher, Multi-functional Heat Pumps Integration In Power Plants For CO₂ Capture and Sequestration, *Applied Energy*, V147, pp. 258-268, June 2015.
45. Qian, S., J. Ling, J. Muehlbauer, Y. Hwang*, R. Radermacher, Study on high efficient heat recovery cycle for solid-state cooling, *Int. J. of Refrigeration*, V. 55, pp. 102-119, July 2015.

46. Al-Alili, A., Y. Hwang*, R. Radermacher, Performance of a desiccant wheel cycle utilizing new zeolite material: Experimental investigation, *Energy*, V. 81, pp. 137-145, March 2015.
47. Lee, H., Y. Hwang*, R. Radermacher, H. Chun, Performance investigation of multi-stage saturation cycle with natural working fluids and low GWP working fluids, *Int. J. of Refrigeration*, V. 51, pp. 103-111, 03/2015.
48. Popli, S., Y. Hwang*, R. Radermacher, Deluge Evaporative Cooling Performance of Wavy Fin and Tube Inclined Heat Exchangers, *ASHRAE Transactions*, V.120 P2, SE-14-020, 07/2014.
49. Li, G., M. Eisele, H. Lee*, Y. Hwang, R. Radermacher, Experimental Investigation of Energy and Exergy Performance of Secondary Loop Automotive Air-conditioning Systems Using Low-GWP (global warming potential) Refrigerants, *Energy*, V. 68, pp. 819-831, 04/2014.
50. Yun, Rin, Y. Hwang*, Inflow Condensation Heat Transfer Characteristics of CO₂ in Microchannel, *Int. Journal of Air-Conditioning and Refrigeration*, V.22, N.2, 03/2014.
51. Mortazavi, Amir, Alabdulkarem, A., Y. Hwang*, R. Radermacher, Novel Combined Cycle Configurations for Propane Pre-cooled Mixed Refrigerant (APCI) natural gas liquefaction cycle, *Applied Energy*, V.117, pp.76-86, 03/2014.
52. Horvath, C., Y. Hwang*, R. Radermacher, W. Gerstler, C. Tang, Waste Heat and Electrically Driven Hybrid Cooling Systems for a High Ambient Temperature, Off-grid Application, *Energy*, V. 66, pp. 711-721, 03/2014.
53. Li, G., S. Qian, H. Lee*, Y. Hwang, R. Radermacher, Experimental investigation of energy and exergy performance of short-term adsorption heat storage for residential application, *Energy*, V. 65, 1, pp. 675-691, 02/2014.
54. Cao, T., H. Lee, Y. Hwang*, R. Radermacher, Experimental Investigation on Thin Polymer Desiccant Wheel Performance, *Int. J. of Refrigeration*, V. 44, pp. 1-11, 08/2014.
55. Kwon, L., H. Lee, Y. Hwang*, R. Radermacher, Experimental investigation of multifunctional VRF system in heating and shoulder seasons, *Applied Thermal Engineering*, V. 66, pp. 355-364, 05/2014.
56. Al-Alili, A., Y. Hwang*, R. Radermacher, A hybrid solar air conditioner: experimental investigation, *Int. J. of Refrigeration*, V. 39, pp. 117-124, 03/2014.
57. Li, G., Y. Hwang*, R. Radermacher, Experimental investigation of energy and exergy performance of adsorption cold storage for space cooling application, investigation, *Int. J. of Refrigeration*, V. 44, pp. 23-35, 03/2014.
58. Lee, H., Y. Hwang*, R. Radermacher, Analytical Investigation of Low Temperature Lift Energy Conversion Systems with Renewable Energy Source, *Applied Thermal Engineering*, V.68, pp. 92-99, 05/2014.
59. Al-Alili, A., Y. Hwang*, R. Radermacher, Review Article: Review of Solar Thermal Air Conditioning Technologies, *Int. J. of Refrigeration*, V. 39, pp. 4-22, 03/2014.
60. Qian, S., K. Gluesenkamp, Y. Hwang*, R. Radermacher, H. Chun, Cyclic steady state performance of adsorption chiller with low regeneration temperature zeolite, *Energy*, V. 60, pp. 517-516, 10/2013.
61. Lee, H., S. Li, Y. Hwang*, R. Radermacher, Experimental Investigations on Flow Boiling Heat Transfer in Plate Heat Exchanger at Low Mass Flux Condition, *Applied Thermal Engineering*, V.61 (2), pp. 408-415, 11/2013.
62. Lee, H., J. Bush, Y. Hwang*, R. Radermacher, Modeling of Micro-CHP (combined heat and power) Unit and Evaluation of System Performance in Building Application in United States, *Energy*, V. 58, pp. 364-375, 06/2013.
63. Eisele, M., Y. Hwang*, R. Radermacher, Utilization of Ice Storage in Secondary Loop Automotive Air-Conditioning Systems, *The SAE International Journal of Passenger Cars–Mechanical Systems*, V. 6, N. 2, pp. 512-519, 07/2013.
64. Ling*, J., A. Vikrant, Y. Hwang, and R. Radermacher, A New Computational Tool for Automotive Cabin Air Temperature Simulation, *The SAE International Journal of Passenger Cars–Mechanical Systems*, V. 6, N. 2, pp. 841-846, 07/2013.
65. Lee, H., Y. Hwang*, R. Radermacher, H. Geon, Thermal and Hydraulic Performance of Sinusoidal Corrugated Plate Heat Exchanger for Low Temperature Lift Heat Pump, *Int. J. of Refrigeration*, V. 36 (3), pp. 689-700, 03/2013.

66. Xu, X., Y. Hwang*, R. Radermacher, Performance Comparison of R410A and R32 in Vapor Injection Cycles, *Int. J. of Refrigeration*, V. 36 (3), pp. 892-903, 03/2013.
67. Lee, H., Y. Hwang*, R. Radermacher, H. Chun, Potential Benefits of Saturation Cycle with Two-Phase Refrigerant Injection, *Applied Thermal Engineering*, V.56, pp. 27-37, 01/2013.
68. Qian, S., L. Huang, V. Aute, Y. Hwang, R. Radermacher, Applicability of Entransy Dissipation Based Thermal Resistance for Design Optimization of Two-Phase Heat Exchangers, *Applied Thermal Engineering*, V. 55, pp. 140-148, 01/2013.
69. Lee, H., Y. Hwang*, R. Radermacher, H. Geon, Experimental Investigation of Novel Heat Exchanger for Low Temperature Lift Heat Pump, *Energy*, V.51, 03/2013, pp. 468-474.
70. Gluesenkamp, K., Y. Hwang*, R. Radermacher, Applied Thermal Engineering, High efficiency micro trigeneration systems, *Applied Thermal Engineering*, V. 50, pp. 1480-1486, 02/2013.
71. Li, G., Y. Hwang*, R. Radermacher, H. Chun, Review Article: Review of Cold Storage Materials for Subzero Applications, *Energy*, V.51, pp. 1-17, 03/2013.
72. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, Enhancement Options For Separate Sensible And Latent Cooling Air-Conditioning Systems, *Int. J. of Refrigeration*, V. 36 (1), pp. 45-57, 01/2013.
73. Rodgers, P. *, A. Mortazavi, V. Eveloy, S. Al-Hashimi, Y. Hwang, R. Radermacher, Enhancement of LNG Plant Propane Cycle Through Waste Heat Powered Absorption Cooling, *Applied Thermal Engineering*, V.48, pp. 41-53, 12/2012.
74. Li, G., Y. Hwang*, R. Radermacher, Review Article: Review of Cold Storage Materials for Air Conditioning Application, *Int. J. of Refrigeration*, V.35 (8), pp. 2053-2077, 12/2012.
75. Alabdulkarem, A., Y. Hwang*, R. Radermacher, Energy Consumption Reduction in CO2 Capturing and Sequestration of an LNG Plant through Process Integration and Waste Heat Utilization, *Int. Journal of Greenhouse Gas Control*, V.10, pp. 215-228, 09/2012.
76. Cui, J., Y. Wu, J. Muehlbauer, Y. Hwang, R. Radermacher, S. Fackler, M. Wutting, I. Takeuchi, Demonstration of High Efficiency Elastocaloric Cooling with Large ΔT using NiTi Wires, *Applied Physics Letters*, V. 101 (7), Paper No. 073904, 08/2012.
77. Kwon, L., Y. Hwang*, R. Radermacher, B. Kim, Field performance measurements of a VRF system with sub-cooler in educational offices for the cooling season, *Energy and Buildings*, V. 49, pp. 300-305, 06/2012.
78. Lee, H., K. Saleh, Y. Hwang*, R. Radermacher, Optimization of Novel Heat Exchanger Design for the Application of Low Temperature Lift Heat Pump, *Energy*, V. 42, pp. 204-212, 06/2012.
79. Okuma, T. *, R. Radermacher, Y. Hwang, A Novel Application of Thermoelectric Modules to an HVAC System under Cold Climate Operation, *J. of Electronic Materials*, V. 41, N 6, pp. 1749-1758, 04/2012.
80. Schoenfeld, J., Y. Hwang*, R. Radermacher, CO2 Transcritical Vapor Compression Cycle with Thermoelectric Subcooler, *Int. J. of HVAC&R*, V.18 (3), pp. 297-311, 06/2012.
81. Al-Alili, A., M.D. Islam*, I. Kubo, Y. Hwang, R. Radermacher, Modeling of a Solar Powered Absorption Cycle for Abu Dhabi, *Applied Energy*, V.93, pp. 160-167, 03/2012.
82. Mortazavi, A., C. Somers, Y. Hwang*, R. Radermacher, S. Al-Hashimi, P. Rodgers, Performance Enhancement of Propane Precooled Mixed Refrigerant LNG Plant, *Applied Energy*, V.93, pp. 125-131, 03/2012.
83. Al-Alili, A., Y. Hwang*, R. Radermacher, I. Kubo, A High Efficiency Solar Air Conditioner Using Concentrating Photovoltaic/Thermal Collectors, *Applied Energy*, V.93, pp. 138-147, 03/2012.
84. Alabdulkarem, A., Y. Hwang*, R. Radermacher, Development of CO2 Liquefaction Cycles for CO2 Sequestration, *Applied Thermal Engineering*, V.34(1), pp. 144-156, 02/2012.
85. Popli, S., P. Rodgers*, V. Eveloy, S. A. Hashimi, R. Radermacher, Y. Hwang, Boosting Energy Efficiency Using Waste-Heat-Powered Absorption Chillers, *SPE Projects, Facilities & Construction*, V. 6(4), pp. 232-238, 12/2011.
86. Xu, X., Y. Hwang*, R. Radermacher, Transient and Steady-state Experimental Investigation of Flash Tank Vapor Injection Heat Pump Cycle Control Strategy, *Int. J. of Refrigeration*, V.34 (8), pp. 1922-1933, 12/2011.

87. Somers, C., A. Mortazavi, Y. Hwang, R. Radermacher, P. Rodgers, S. Al-Hashimi, Modeling Water/Lithium Bromide Absorption Chillers in ASPEN Plus, *Applied Energy*, V.88(11), pp. 4197-4205, 11/2011.
88. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, Experimental Evaluation and Performance Enhancement Prediction of Desiccant Assisted Separate Sensible and Latent Cooling Air-conditioning System, *Int. J. of Refrigeration*, V.34(4), pp. 946-957, 06/2011.
89. Alabdulkarem, A., A. Mortazavi, Y. Hwang*, R. Radermacher, Optimization of Propane Pre-cooled Mixed Refrigerant LNG Plant, *Applied Thermal Engineering*, V.31, pp.1091-1098, 05/2011.
90. Han, W.*, V. Aute, Y. Hwang, and R. Radermacher, Numerical simulation and optimization of single phase turbulent flow in chevron-type plate heat exchanger with sinusoidal corrugations, *Int. J. of HVAC&R*, V.17, pp. 186-197, 04/2011 .
91. Xing, X., Y. Hwang*, R. Radermacher, **Review Article:** Refrigerant Injection for Heat pumping/Air Conditioning Systems: Literature Review and Challenges Discussions, *Int. J. of Refrigeration*, V.34(2), pp. 402-415, 03/2011.
92. Ma, Y.*, B. Zhang, Y.H. Hwang, X.Y. Peng, and Z.W. Xing, Research and Development of a Semi-hermetic Reciprocating Compressor for Transcritical CO₂ Refrigeration Cycle, *Proceedings of the Institution of Mechanical Engineers, Vol.225, Part A: Journal of Power and Energy Engineering*, pp.101-113, 02/2011.
93. Leighton, D., Y. Hwang*, R. Radermacher, Compact Braze Plate Heat Exchangers for CO₂ Heat Pump Water Heaters, *Int. Journal of Air-Conditioning and Refrigeration*, V.18, N.4, pp.1-7, 12/2010.
94. Al-Alili, A., Y. Hwang*, R. Radermacher, I. Kubo, Optimization of a Solar Powered Absorption Cycle under Abu Dhabi's Weather, *Solar Energy*, V.84(12), pp. 2034-2040, 12/2010.
95. Zhao, Y.*, Y. Hwang, R. Radermacher, A General Geometrical Model for the Positive Displacement Compressors and Expanders, *JRAC*, V.10, pp. 70-75, 11/28/2010.
96. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, Performance Enhancement of the Separate Sensible and Latent Cooling Air-Conditioning Systems by Divided Heat Exchangers, *JRAC*, V.10, pp. 37-43, 11/28/2010.
97. Xing, X., Y. Hwang*, R. Radermacher, Control Strategy of Flash Gas Injection System and Refrigerant Charge Management, *JRAC*, V.10, pp. 53-60, 11/28/2010.
98. Mortazavi, A., C. Somers, A. Alabdulkarem, Y. Hwang*, R. Radermacher, Enhancement of APCI Cycle Efficiency with Absorption Chillers, *Energy*, V.35(9), pp. 3877-3882, 09/2010.
99. Aynur, T., Y. Hwang*, R. Radermacher, Integration of VRF and Heat Pump Desiccant Systems for the Cooling Season, *Applied Thermal Engineering*, V.30, pp. 917-927, 06/2010.
100. Ling, J., Y. Hwang*, R. Radermacher, Theoretical Study on Separate Sensible and Latent Cooling Air-Conditioning System, *Int. J. of Refrigeration*, V.33(3), pp. 510-520, 05/2010.
101. Aynur, T., Y. Hwang*, R. Radermacher, Field Performance Measurements of a Heat Pump Desiccant Unit in Heating and Humidification Mode, *Energy and Buildings*, V..42(5) pp. 678-683, 05/2010.
102. Fernandez, N., Y. Hwang*, R. Radermacher, Comparison of CO₂ Heat Pump Water Heater Performance with Baseline Cycle and Two High COP Cycles, *Int. J. of Refrigeration*, V.33(3), pp. 635-644, 05/2010.
103. Aynur, T., Y. Hwang*, R. Radermacher, Integration of VRF and Heat Pump Desiccant Systems for the Heating Season, *Energy and Buildings*, V.42(4), pp. 468-476, 04/2010.
104. Wang, K., M. Eisele, Y. Hwang*, R. Radermacher, **Review Article:** Review of Secondary Loop Refrigeration Systems with Flammable Refrigerants, *Int. J. of Refrigeration*, V.33(2), pp. 212-234, 03/2010.
105. Aynur, T., Y. Hwang*, R. Radermacher, Simulation comparison of VAV and VRF air conditioning systems in an existing building for the cooling season, *Energy and Buildings*, V.41(11), pp. 1143-1150, 11/2009.
106. Aynur, T., Y. Hwang*, R. Radermacher, Simulation of a VAV Air Conditioning System in an Existing Building for the Cooling Mode, *Energy and Buildings*, V.41(9), pp. 922-929, 09/2009.
107. Wang, X., Y. Hwang*, R. Radermacher, Two-Stage Heat Pump System with Vapor-Injected Scroll Compressor Using R410A as a Refrigerant, *Int. J. of Refrigeration*, V.32(6), pp. 1442-1451, 09/2009.

108. Kalinowski, P., Y. Hwang*, Reinhard Radermacher, Saleh Al Hashimi, and Peter Rodgers, Application of Waste Heat Powered Absorption Refrigeration System to the LNG Recovery Process, *Int. J. of Refrigeration*, V.32(4), pp. 687-694, 06/2009.
109. Nayak, S., Y. Hwang*, R. Radermacher, Performance Characterization of Gas Engine Generator Integrated with a Liquid Desiccant Dehumidification System, *Applied Thermal Engineering*, V.29, pp. 479-490, 02/2009.
110. Wang, X., Y. Hwang*, and R. Radermacher, Investigation of Potential Benefits of Compressor Cooling, *Applied Thermal Engineering*, V.28, pp. 1791-1797, 10/2008.
111. Aynur, T., Y. Hwang*, and R. Radermacher, Simulation Evaluation of the Ventilation Effect on the Performance of a VRV System in Cooling Mode – Part II: Simulation Evaluation, *Int. Journal of HVAC&R Research*, V.14(5), pp. 783-795, 09/2008.
112. Aynur, T., Y. Hwang*, R. Radermacher, Field Performance Measurements of a Heat Pump Desiccant Unit in Dehumidification Mode, *Energy and Buildings*, V.40(12), pp. 2141-2147, 09/2008.
113. Aynur, T., Y. Hwang*, and R. Radermacher, Experimental Evaluation of the Ventilation Effect on the Performance of a VRV System in Cooling Mode – Part I: Experimental Evaluation, *Int. J. of HVAC&R Research*, V.14 (4), pp. 615-630, 07/2008.
114. Hwang, Y.*, A. Gado, and R. Radermacher, Cycling in Climate Control Systems with Orifice Tube and Thermostatic Expansion Valve, *J. of Passenger Cars-Mechanical Systems*, V.116, pp. 1235-1239, 07/2008.
115. Hwang, Y.*, R. Radermacher, A. Al-Alili, I. Kubo, **Review Article:** Review of Solar Cooling Technologies, *Int. J. of HVAC&R Research*, V.14(3), pp. 507-528, 05/2008.
116. Gado, A., Y. Hwang*, R. Radermacher, Dynamic Behavior of Mobile Air Conditioning Systems, *Int. J. of HVAC&R Research*, V.14(2), pp. 307-321, 03/2008.
117. Hwang, Y.*, R. Radermacher, T. Hirata, Oil Mass Fraction Measurement of CO₂/PAG Mixture, *Int. J. of Refrigeration*, V.31(2), pp. 256-261, 03/2008.
118. Zhiwei, Lian, R. Radermacher, Liu Weiwei, Y. Hwang, Xuan Shenglan, Comparisons between hybrid air conditioning system and vapor compression refrigeration system by life-circle cost, *Journal of Central South University of Technology*, 14:136-142. DOI:10.1007/s11771-007-0381-9, 12/2007.
119. Gado, A., Y. Hwang*, R. Radermacher, A Dynamic Test Facility for Mobile Air Conditioning Systems, *Int. J. of Air-Conditioning and Refrigeration*, V.15, N.4, pp. 147-155, 12/30/2007.
120. Yun, R., Y. Hwang*, R. Radermacher, Convective Gas Cooling Heat Transfer and Pressure Drop Characteristics of Supercritical CO₂/Oil Mixture in a Minichannel Tube, *Int. J. of Heat and Mass Transfer*, V.50, pp. 4796-4804, 11/2007.
121. Hwang, Y.*, J. Lee, R. Radermacher, Oil Distribution in a Transcritical CO₂ Air Conditioning System, *Applied Thermal Engineering*, V.27, pp. 2618-2625, 10/2007.
122. Hwang, Y.*, D. Jin, R. Radermacher, Refrigerant Distribution in Minichannel Evaporator Manifolds, *Int. J. of HVAC&R*, V.13(4), pp. 543-555, 07/2007.
123. Hwang, Y.*, D. Jin, R. Radermacher, Comparison of R-290 and Two HFC Blends for Walk-In Refrigeration Systems, *Int. J. of Refrigeration*, V.30(4), pp. 633-641, 06/2007.
124. Hwang, Y.*, V. Singh, R. Radermacher, Heat Exchanger Design for CO₂ Cycle with a Linear Compressor, *Int. Journal of HVAC&R*, V.13(3), pp. 471-483, 05/2007.
125. Hwang, Y.*, D. Jin, and R. Radermacher, Performance Measurements of CO₂ Heat Exchanger, *ASHRAE Transactions*, V.111, Part 2, Paper No. 4814, 06/2005.
126. Cremaschi, L., Y. Hwang*, R. Radermacher, Experimental Investigation of Oil Retention in Air Conditioning Systems, *Int. J. of Refrigeration*, V.28(7), pp. 1018-1028, 11/2005.
127. Hwang, Y.*, Potential Energy Benefits of Integrated Refrigeration System with Microturbine and Absorption Chiller, *Int. J. of Refrigeration*, V.27(8), pp.816-829, 12/2004.
128. Hwang, Y.*, W. Kopko, R. Radermacher, An Experimental Evaluation of a Residential Sized Evaporatively Cooled Condenser, *Int. J. of Refrigeration*, V.24(1), pp. 238-249, 05/2001.
129. Hwang, Y.*, S. I. Haider, B. Markey, W. Kopko, R. Radermacher, Evaporatively-Cooled Condenser with Rotating Disks, *J. of Enhanced Heat Transfer*, V.7(4), pp. 273-287, 12/2000.
130. Hwang Y.*, R. Radermacher, Experimental Investigation of the Carbon Dioxide Refrigeration Cycle, *ASHRAE Transactions*, V.105, Part 1, pp. 1219-1227, CH-99-22-2, 01/1999.

131. Hwang Y.*, R. Radermacher, Theoretical Evaluation of Carbon Dioxide Refrigeration Cycle, Int. J. of HVAC&R, V.4, N.3, pp. 245-263, 07/1998.
132. Hwang, Y.*, J. Judge, and R. Radermacher, Experience with Refrigerant Mixtures, ASHRAE Transactions, V. 103, Part 1, pp. 765-776, 01/1997.
133. Cheung, K., Y. Hwang, J. Judge, A. Singh, R. Radermacher*, Performance Assessment of Multistage Absorption Cycles, Int. J. of Refrigeration, V.19(7), pp. 473-481, 07/1996.

c. Reports.

1. Radermacher, R., Daniel, B., Aute, V., Huang, Z., Hwang, Y., Ling, J., Muehlbauer J., Tancabel, J., Abdelaziz O., Zhang M., Miniaturized Air-to-Refrigerant Heat Exchangers, Technical Report, US Department of Energy, OSTI Identifier: 1358252, 2017. (<https://www.osti.gov/scitech/biblio/1358252>)
2. T.A. Johnson, H.A. Kariya, M.T. Leick, M.D. Zimmerman, M. Li, Y. Du, H. Lee, Y. Hwang, R. Radermacher, Development and Evaluation of a Sandia Cooler-based Refrigerator Condenser, Report published 1 Jul 2015.
3. Spencer, D., Y. Hwang, R. Radermacher, An Investigation of Void Fraction for Domestic Refrigeration Applications, Final Report to GE, July 2013.
4. Alabdulkarem, A., Y. Hwang, R. Radermacher, System Soft-Optimized Test of Refrigerant L-41a in Air Source Heat Pump, Test Report #23 for Low-GWP AREP to AHRI, May 2013.
5. Alabdulkarem, A., Y. Hwang, R. Radermacher, System Drop-In Tests of Refrigerants R-32, D2Y-60, and L-41a in Air Source Heat Pump, Test Report #20 for Low-GWP AREP to AHRI, May 2013.
6. Horvath, C., K. Gluesenkamp, Y. Hwang*, R. Radermacher, Comparison of Waste Heat Driven Water/LiBr Absorption Systems and Conventional Electrically Run Vapor Compression Systems for an Off-grid, High Ambient Temperature Setting, Final Report to GE Global Research and US Army, July 2011.
7. Eisele, M., Jan Muehlbauer, Y. Hwang*, R. Radermacher, Two-Phase Refrigerant Distribution in Minichannel Evaporator Manifolds, Final Report to United Technologies Research Company, October 2009.
8. Fernandez, N., Y. Hwang*, R. Radermacher, Reliability Development and Field Demonstration of CO₂ Heat Pump Water Heaters, Final Report to The National Association of State Energy Office (NASEO), December 2008.
9. Jin, D., Y. Hwang*, and R. Radermacher, Refrigerant Distribution in Evaporator Manifolds, Final Report to ASHRAE, 1260-TRP, August 2006.
10. Hwang, Y.*, D. Jin, and R. Radermacher, Comparison of Hydrocarbon R-290 and Two HFC Blends R404A and R410A for Low Temperature Refrigeration Application, Final Report to ARI Green Program, Nov., 2005.
11. Hwang, Y.*, D. Jin, and R. Radermacher, Comparison of Hydrocarbon R-290 and Two HFC Blends R404A and R410A for Medium Temperature Refrigeration Application, Final Report to ARI Green Program, March 2004.
12. Hwang, Y.*, R. Radermacher, Total Equivalent Warming Impact Analysis of Automobile Air-Conditioning, Final Report to U.S. EPA, May 2000.
13. Cutler, B., Y. Hwang*, R. Radermacher, US Army Breadboard Prototype ECU Design, Construction and Testing, Final Report to U.S. Army, September 2000.
14. Hwang, Y.*, R. Radermacher, An Experimental Evaluation of Carbon Dioxide Refrigeration System, Final Report to U.S. EPA, May, 1998.
15. Hwang, Y.*, R. Radermacher, Compact Heat Pump, Refrigeration and Air-Conditioning Systems with Natural Refrigerants, Final Report to EPRI, December 1997.
16. Hwang, Y.*, R. Radermacher, Experimental evaluation of a novel full-scale evaporatively cooled condenser, Final report to U.S. EPA, 1997.
17. Hwang, Y.*, J. Judge, and R. Radermacher, Testing of Refrigerant Mixtures in Residential Heat Pumps, Final Report to U.S. EPA, EPA/600/SR-95/157, April 1996.
18. Hwang, Y.*, J. Judge, and R. Radermacher, Testing of Refrigerant Mixtures in Residential Heat Pumps, Final Report to EPRI, EPRI TR-105394, August 1995.

19. Hwang, Y.* , The Noise Effects of the Cross Flow Fan and Duct System for the Forced Convection of the Space Heater, The Second Proceedings of the Industrial Graduate School Theses, Samsung Electronics, pp. 3-40, 03/28/1990.

d. Articles in Magazines and Newsletters

1. Huilong*, H., J. Cui, S Qian, D, Catalini, Y. Hwang, R. Radermacher, and I. Takeuchi, Overcoming fatigue through compression for advanced elastocaloric cooling, MRS Bulletin, 43(4), April 2018.
2. Qian, S., Hwang, Y., Radermacher, R., Takeuchi, I., An overview of thermoelastic cooling technology, IEA Heat Pump Newsletter, V. 33(4), pp. 15-18, 2015.
3. Alabdulkarem, A., Y. Hwang*, R. Radermacher, *From Waste Heat to Cooling using Absorption Chillers: A Showcase Natural Gas Liquefaction Facility with CO₂ Capturing Plant*, IEA Heat Pump Center, Newsletter, V.5, No. 1, pp. 26-29, 2012.
4. Radermacher, R.*, B. Yang, and Y. Hwang, *Integrating Alternative and Conventional Cooling Technologies*, ASHRAE Journal, Vol. 49, No. 10, pp. 28-34, October 2007.
5. Hwang, Y.*, A. Gado and R. Radermacher, *Comparing R-290 with R22 in Heat Pumps*, ASHRAE Journal, Vol. 45, No. 1, p. 40, January 2003.
6. Hwang, Y.*, and R. Radermacher, *CO₂ Transcritical Cycle Research at CEEE*, The Magazine of the SAREK, Vol. 31, No. 7, pp. 45-52, ISBN No. 1229-6430, 07/2002.
7. Hwang, Y.*, *Refrigeration Cycle Using CO₂ as its Refrigerant*, The Magazine of the SAREK, Vol. 31, No. 1, pp. 34-44, ISBN No. 1229-6430, 07/2002.
8. Hwang, Y.*, M. Ohadi and R. Radermacher, *Natural Refrigerants*, Mechanical Engineering, Vol. 120, No. 10, pp. 96 - 99, 10/1998.

e. Talks, Abstracts and Other Professional Papers Presented.

i. Key note paper presentation.

1. Hwang, Y.* , What are new cooling technologies?, The 5th International Conference on Refrigeration Technology, Zhuhai, China, 12/6/2018.
2. Hwang, Y.* , Advances in Caloric Cooling Technologies, The 8th Int. Conference on Compressors and Refrigeration, Xi'an, China, 07/21/2017.
3. Hwang, Y.* , New Cooling Technologies, International Symposium on Refrigeration Technology, Zhuhai, China, 10/31/2014.
4. Y. Hwang, Plenary Presentation: New Heat Exchanger Design Approach for Low Temperature Lift Heat Pump, 2nd International Workshop on Heat Transfer Advances for Energy Conservation and Pollution Control (IWHT2013), Xi'an, China, 10/19/13.
5. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, Enhancement Options for Separate Sensible and Latent Cooling Air-Conditioning Systems, 23rd International Congress of Refrigeration, Prague, Czech Republic, 08/25/2011.
6. Gluesenkamp, K.* , R. Radermacher, Y. Hwang, Trends in Absorption Machines, International Sorption Conference (ISHPC11): Sources/Sinks Alternative to the Outside Air for Heat Pump and Air-Conditioning Techniques, Padua, Italy, pp. 13-22, 04/08/2011.
7. Gluesenkamp, K.* , R. Radermacher, Y. Hwang, High Efficiency Trigeneration Systems for Buildings, 2nd European Conference on Polygeneration, Spain, pp. 38-58, 2011.
8. Hwang, Y.* , Trends in Refrigeration Technologies, International Symposium on Refrigeration Technology, Zhuhai, China, 11/02/2010.
9. Hwang, Y.* , Advanced Technology for Air-Conditioning and Refrigeration, The 6th Int. Conference on Compressors and Refrigeration, Xi'an, China, 09/01/2008.
10. Hwang, Y.* , Refrigerant Distribution in Microchannel Evaporators, The 22nd Int. Congress of Refrigeration, Beijing, China, 8/21/2007.
11. Hwang, Y.* , Two-Stage Cycle with Vapor Injection Compressor, The 22nd Int. Congress of Refrigeration, Beijing, China, 8/21/2007.
12. Hwang, Y.* , Oil Management in Hermetic Vapor Compression Cycle, The 5th Int. Conference on Compressor and Refrigeration, Dalian, China, 07/21/2005.
13. Hwang, Y.* , R. Radermacher, Integration of Air-conditioning and Refrigeration with

Distributed System, The 21st Int. Congress of Refrigeration, Washington D.C., 08/22/2003.

14. Radermacher, R. and Y. Hwang*, Alternative Refrigerant Heat Pump and Refrigeration Systems, The 12th Int. Heat Transfer Conference, Grenoble, France, 08/2002.
15. Hwang, Y.*, R. Radermacher, Emerging Refrigerants, IIR Conference, "Emerging Trends," New Delhi, India, 03/20/1998.

ii. Invited talks.

1. Hwang, Y., Compressor Research in Center For Environmental Energy Engineering, Qing An, July 2017.
2. Hwang, Y., CEEE Consortium Research, General Electric, July 2016.
3. Hwang, Y., Review of Not-in-kind Cooling Technologies, US DOE, February, 2016.
4. Hwang, Y., A Control Strategy for Adsorption Heat Pump Systems and Adsorption Energy Storage, Korea Institute of Science and Technology, October 2014.
5. Hwang, Y., New Heat Exchanger Design Approach for Low Temperature Lift Heat Pump Systems, Korea Institute of Energy Research, December 2013.
6. Hwang, Y., Separate Sensible and Latent Cooling, Korea University, May 2013.
7. Hwang, Y., New Heat Exchanger Design Approach for Low Temperature Lift Heat Pump Systems, KAIST, May 2013.
8. Hwang, Y., Refrigerant Mixtures and Transcritical CO₂ Cycles, Emerson, Suzhou, China, August 2012.
9. Hwang, Y., Refrigeration Technologies, Xi'an Jiao Tong University, August 2012.
10. Hwang, Y., Energy Efficiency Enhancement Through Separate Sensible and Latent Cooling, Seoul National University, June 2012.
11. Hwang, Y., Energy Efficiency Enhancement for Sustainable Future Marine Energy Management, Pusan National University, June 2012.
12. Hwang, Y., Net Zero Energy Buildings, Busan Technology Park, June 2012.
13. Hwang, Y., Net Zero Energy Residence, UAE ASHRAE Chapter, April 2012.
14. Hwang, Y., Next Generation Heat Exchanger Design, Korea University, June 2011.
15. Hwang, Y., Advanced Technologies for Air-Conditioning and Refrigeration, Busan Technology Park MP Technology Institute, June 2011.
16. Hwang, Y., Marine Energy Management toward Sustainable Future, Samsung Heavy Industry, June 2011.
17. Hwang, Y., Integration of VRF and Ventilation Systems, The Fourth Busan Refrigeration and Air-Conditioning Center Forum, Busan, Korea, December 2010.
18. Hwang, Y., Study on Application of R290 Technology, International Workshop on Alternatives to HCFC-22 in RAC Sector, CHEAA and UNEP, Hefei, China, November 2010.
19. Hwang, Y., Waste Heat Recovery Technologies, 1st SHI Eco Friendly Energy Forum, June 2010.
20. Hwang, Y., Modeling of the LNG Process, Samsung Heavy Industry, December 2009.
21. Hwang, Y., High Efficient Air-Conditioning and Refrigeration System Design, Pusan National University, September 2008.
22. Hwang, Y., Renewable Energy, Korea University, June 2008.
23. Hwang, Y., Advanced Heat Exchanger Technologies, Busan Technology Park MP Technology Institute, June 2008.
24. Hwang, Y., Combined Cooling, Heating, and Power Generation, Korea University, June 2007.

iii. Presentation during professional conferences, workshops and meetings.

1. Hwang, Y., Regenerative Elastocaloric Cooling, Seminar 31, ASHRAE Winter Conference, Atlanta, GA, January 2019.
2. Hwang, Y., Overview of Elastocaloric Cooling, Seminar 71, ASHRAE Annual Conference, Houston, TX., 2018.

3. Hwang, Y., The new Carbon Metric proves energy efficiency more important than previously appreciated, Stationary A/C Workshop at California Air Resources Board, May 2018.
4. Hwang Y., Development of Advanced Cooling Technologies for Sustainable Future, An International Workshop on Sustainable Energy, Power and Propulsion (ISEPP-2018) at National Institute of Technology (NIT) Kurukshetra, March 2018.
5. Hwang, Y., Improved Life-Cycle Climate Performance (LCCP) Metrics: Room AC Carbon Footprint, 4th Annual Cool Workshop, World Bank, November 2017.
6. Hwang, Y., Design of a hydraulically driven compressive elastocaloric cooling system, Seminar 34, ASHRAE Annual Conference, Long Beach, CA., 2017.
7. Hwang, Y., Demonstration of Elastocaloric Cooling Technology, Seminar 48, ASHRAE Winter Conference, Orlando, FL, 2016.
8. Hwang, Y., CEE's Alternative Refrigerant Research, 2016 Energy Efficiency & Demand Response Symposium, EPRI's Technology Innovation Program, Long Beach, 2016.
9. Hwang, Y., R. Radermacher, Experimental Cooling and Energy Performance of Motor Vehicle AC using HFC-152a, SAE 2015 Thermal Management Systems Symposium, Troy, MI, 2015.
10. Lee, Hoseong, X. Lin, Y. Hwang, R. Radermacher, Performance Investigation of Multi-Functional Variable Refrigerant Flow System, ASME 2015 9th International Conference on Energy Sustainability, San Diego, ESFuelCell2015-49745, June 28-July 2, 2015.
11. Hwang, Y., Cold Climate Heat Pump Technologies, Symposium II on Advanced Heat Pump Applications for Energy Efficiency & Demand Response, EPRI, Capital Hilton, Washington, DC 20036 November 4th & 5th, 2014.
12. Hwang, Y., High Efficient Residential Air-Conditioning System Design Training Camp, China Household Electric Appliance Research Institute, Technical Training Workshop on High Efficiency Room Air Conditioner Design and Manufacturing, December 2-7, 2013, Beijing, China.
13. Hwang, Y., **Plenary Presentation:** New Heat Exchanger Design Approach for Low Temperature Lift Heat Pump, the 2nd International Workshop on Heat Transfer Advances for Energy Conservation and Pollution Control (IWHT2013), October 18-21, 2013, Xi'an, China.
14. Hwang, Y., Energy Efficiency Improvement of RACs, China Household Electric Appliance Research Institute, Technical Training Workshop on High Efficiency Room Air Conditioner Design and Manufacturing, August 2013.
15. Hwang, Y., Review of Life Cycle Climate Performance (LCCP) Analysis and IIR's LCCP Working Party, Advancing Ozone and Climate Protection Technologies – Next Steps, Second International Conference, Bangkok, Thailand, June 29-30, 2013.
16. Hwang, Y.*, Solar Powered Hybrid Air Conditioner, ASME Integrated/Sustainable Building Equipment & Systems Open Research Forum, Washington D.C., 04/2013.
17. Qian, S., K. Gluesenkamp, Y. Hwang*, R. Radermacher, Separate Sensible and Latent Cooling for Trigeration, ASHRAE Annual Meeting, Denver, CO, 2013.
18. Alabdulkarem, A., Y. Hwang*, R. Radermacher, Drop-In Performance Evaluation of Three Alternative Refrigerant Candidates for R-410A, ASHRAE Annual Meeting, Denver, CO, 2013.
19. Hwang, Y., CO₂ Transcritical Vapor Compression Cycle with Thermoelectric Subcooler, ASHRAE Winter Meeting, Dallas, TX, 2013.
20. Hwang, Y., Application of Thermoelectric Modules for Vapor Injection Heat Pump System Under Cold Climate Operation, ASHRAE Winter Meeting, Dallas, TX, 2013.
21. Hwang, Y., **Plenary Presentation:** *IIR Working Party on Life Cycle Climate Performance Evaluation*, Refrigerants Review, Round 2, September 24-25, 2012, Dubai, U.A.E.
22. Al-Alili, A., Y. Hwang*, R. Radermacher, *Experimental Investigation of a Hybrid Air Conditioner for Hot and Humid Climates*, The ASME 2012 6th International Conference on Energy Sustainability & 10th Fuel Cell Science, Engineering and Technology Conference, July 23-26, 2012, San Diego, CA, USA.

23. Eisele, M., Y. Hwang*, R. Radermacher, *Transient Performance Evaluation of Automotive Secondary Loop Systems with Low-GWP Fluids*, ASHRAE Annual Meeting, San Antonio, 06/2012.
24. Hwang, Y.*, R. Radermacher, *Water/LiBr Absorption System Assisted Vapor Compression System for High Ambient Temperatures*, ASHRAE Annual Meeting, San Antonio, 06/2012.
25. Alabdulkarem, A., Y. Hwang, R. Radermacher, *New Energy Efficient CO₂ Pressurization Strategies for Enhanced Oil Recovery Applications*, 2011 ASME Int. Mechanical Engineering Congress and Exposition, Denver, CO, 11/2011.
26. Eisele, M., Y. Hwang*, R. Radermacher, *Virtual Testing of Off-Period Cooling with Secondary Loop System*, 2011 Alternate Refrigerant and System Efficiency Symposium, SAE, Phoenix, AZ, 2011.
27. Gluesenkamp, K.*, R. Radermacher, and Y. Hwang, *High Efficiency Trigeration Systems for Buildings*, 2nd European Conference on Polygeneration, Tarragona, Spain, 04/01/2011.
28. Hwang, Y.*, *Heat Pump Desiccant Unit and Dehumidification with VRF*, ASHRAE Annual Meeting, Albuquerque, NM, 2010.
29. Hwang, Y.*, *CO₂ Heat Pump Water Heater Performance*, ASHRAE Annual Meeting, Albuquerque, NM, 2010.
30. Hwang, Y.*, *Heat Pump Desiccant Unit and Dehumidification with VRF*, ASHRAE Annual Meeting, Albuquerque, NM, 2010.
31. Hwang, Y.*, *Novel Heat Exchanger Design Using Approximation Assisted Optimization (10AARS-0021)*, 2010 Alternate Refrigerant and System Efficiency Symposium, SAE, Phoenix, AZ, 2010.
32. Hwang, Y.*, *Low GWP Refrigerants in Secondary-Loop Systems*, ASHRAE Winter Meeting, Orlando, FL, 2010.
33. Hwang, Y.*, *CO₂ Heat Pump Water Heater*, ASHRAE Annual Meeting, Louisville, KY, 2009.
34. Hwang, Y.*, R. Radermacher, S. Azarm, O. Abdelaziz, K. Saleh, V. Aute, *Novel Heat Exchangers Design and Optimization using Multi-Scale, Multi-Physics Approximation Assisted Optimization*, Interagency Advanced Power Group, Mechanical Working Group and Electrical Systems Working Group Meetings, Philadelphia, PA, 2009.
35. Schoenfeld, J., Y. Hwang*, R. Radermacher, *Experimental Results: Thermoelectric "Subcooler for CO₂ Transcritical Vapor Compression System"*, VDA Winter Meeting, Saalfelden, Austria, 2009.
36. Hwang, Y.*, R. Radermacher, *Oil Retention in Commercial Refrigeration Systems*, ASHRAE Annual Meeting, Salt Lake City, UT, 2008.
37. Hwang, Y.*, R. Radermacher, D. Shin, E. Seo, and H. Kim, *Dynamic Liquid Hold Up Behavior in the Accumulator*, ASHRAE Annual Meeting, Salt Lake City, UT, 2008.
38. Gado, A., Y. Hwang*, and R. Radermacher, *Dynamic Behavior of Mobile Air Conditioning Systems*, ASHRAE Annual Meeting, Salt Lake City, UT, 2008.
39. Somers, C., A. Mortazavi, Y. Hwang*, R. Radermacher, S. Al-Hashimi, P. Rodgers, *Modeling Absorption Chillers in ASPEN*, The 2nd Int. Energy 2030 Conference, 2008.
40. Mortazavi, A.*, P. Rodgers, Y. Hwang, R. Radermacher, *Enhancement of LNG Plant with Waste Heat Powered Absorption Cooling*, The 2nd Int. Energy 2030 Conference, 2008.
41. Mortazavi, A., Y. Hwang*, R. Radermacher, S. Al-Hashimi, P. Rodgers, *Performance Enhancement of APCI LNG Plant*, The 2nd Int. Energy 2030 Conference, 2008.
42. Al-Alili, A., Y. Hwang*, R. Radermacher, I. Kubo and P. Rodgers, *High Efficiency Solar Cooling Technique*, The 2nd Int. Energy 2030 Conference, 2008.
43. Al-Alili, A., M.D. Islam*, I. Kubo, Y. Hwang and R. Radermacher, *Modeling of a Solar Powered Absorption Cycle for Abu Dhabi*, The 2nd Int. Energy 2030 Conference, 2008.
44. Hwang, Y.*, D. Jin, and R. Radermacher, *Refrigerant Distribution in Microchannel Evaporators*, ASHRAE Annual Meeting, Long Beach CA, 2007.
45. Hwang, Y.*, R. Radermacher, *Oil Concentration Measurement by Capacitance Sensor*, ASHRAE Annual Meeting, 2006.

46. Hwang, Y.*, *Effects of Oil on CO₂ Heat Transfer and System Performance*, C-Dig Meeting at Purdue University, 2006.
47. Radermacher, R. and Y. Hwang*, *Oil Retention in Unitary A/C*, ASHRAE Annual Meeting, 2005.
48. Hwang, Y.*, R. Radermacher, *Oil Retention Modeling in the Suction Line of Air Conditioner*, ASHRAE Annual Meeting, 2005.
49. Hwang, Y.*, R. Radermacher, *Carbon Dioxide as a Refrigerant*, ASHRAE Winter Meeting, 2005.
50. Radermacher, R.*, Y. Hwang, and A. Gado, *Cyclic Performance of Vapor Compression Systems with Emphasis on Moisture Removal*, VDA Alternative Refrigerant Winter Meeting, 2005.
51. Hwang, Y.*, *Performance Potential of Two-stage CO₂ Cycles*, C-Dig Meeting at UIUC, 2004.
52. Cremaschi, L., Y. Hwang*, R. Radermacher, *Comparison of Oil Retention in R134a and CO₂ Climate Control Systems*, 2004 Alternate Refrigerant Systems Symposium, SAE, Phoenix, AZ, 2004.
53. Hwang, Y.*, D. Jin, and R. Radermacher, *Comparison of Hydrocarbon R-290 and Two HFC Blends R-404A and R-410A for Medium Temperature Refrigeration Applications*, 15th Annual Earth Technologies Forum, Washington D.C., 2004.
54. Hwang, Y.*, R. Radermacher, *Alternative Refrigerants Research at CEEE: Two-stage CO₂ System and Hydrocarbon Alternatives*, Int. Seminar on Natural Refrigerants, Japan, 2004.
55. Hwang, Y.*, A. Gado, and R. Radermacher, *Measurement of the Dynamic Performance of Climate Control Systems Using a Dynamic Test Facility*, VDA Alternative Refrigerant Winter Meeting, 2004.
56. Hwang, Y.*, R. Radermacher, *Thoughts on CO₂ Compressor Testing and Rating*, Seminar 24, ASHRAE Winter Meeting, 2004.
57. Hwang, Y.*, J. Lee, R. Radermacher, *Investigation of Oil Distribution in CO₂ Transcritical Cycle*, VDA Alternate Refrigerant Winter Meeting, Austria, 2003.
58. Huff, Y. Hwang*, and R. Radermacher, *High-Side Pressure Optimization in Transcritical CO₂ Cycles with Work-Extracting Expansion Devices*, Proceedings of the 2002 Alternate Refrigerant Systems Symposium, SAE, Phoenix, AZ, 2002.
59. Hwang, Y.*, R. Radermacher, *Alternative Refrigerants for Refrigeration Systems and Options for Performance Improvement*, IMAPS Advanced Technology Workshop on Thermal Management, Palo Alto, CA, 2002.
60. Hwang, Y.*, R. Radermacher, *Comparison of Refrigerants*, Workshop: Vapor Compression with the Critical Point in Mind, University of Maryland, 02/11/2000.
61. Hwang, Y.*, R. Radermacher, *Safety Consideration*, Workshop: Vapor Compression with the Critical Point in Mind, University of Maryland, 02/11/2000.
62. Hwang, Y.*, R. Radermacher, *Carbon Dioxide Heat Pump System*, Proceedings of IIR Workshop on CO₂ Technology in Refrigeration, Heat Pump & Air-Conditioning Systems, pp. 71-78, Trondheim, Norway, 05/14/1997.

iv. Peer reviewed conference proceedings (148 papers).

1. Gao, L., Y. Hwang*, G.S. Kim, *Thermoeconomic Analysis of A Solar MVC Desalination System*, IMECE2018-86212, The ASME 2018 International Mechanical Engineering Congress and Exposition, IMECE2018, November 9-15, 2018, Pittsburgh, PA, USA.
2. Gao, L., Y. Hwang*, R. Radermacher, *A Review of Microgrid Energy Systems*, 7th International Building Physics Conference, Sep. 23-26, 2018, Syracuse, NY.
3. Gao, L., Y. Hwang*, *A Review of Optimization Technologies Adopted in Combined Cooling Heating and Power System*, Proceedings of the 21st Conference on Process Integration, Modelling and Optimization for Energy Saving and Pollution Reduction, PRES 2018, Paper No. 0449, 133-138, Aug. 26-29, 2018, Prague, Czech Republic.
4. Huang, Z., J. Ling, V. Aute, Y. Hwang*, *Design Optimization of An Air-Cooled Bifurcated Tube Heat Exchanger*, 16th International Heat Transfer Conference at Beijing, China, Paper No. 22643, August 10-15, 2018.

5. Baker, J., Y. Tao, Y. Hwang*, C. Wang, Design of Gas Channels for a Carbon Dioxide Electrochemical Compressor, 23rd International Compressor Engineering Conference at Purdue Paper No. 1479, July 9-12, 2018.
6. Klein, E., J. Ling, V. Aute, Y. Hwang*, R. Radermacher, A Review of Recent Advances of Additively Manufactured Heat Exchangers, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2478, July 9-12, 2018.
7. Wan, H., Y. Hwang*, R. Radermacher, S. Oh, Review of Electronic Expansion Valve Correlations for Heat Pump and Air Conditioning Systems, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2480, July 9-12, 2018.
8. Su, W., Y. Hwang*, L. Zhao, Geometric Effects on Phase Separation of Refrigerant at Horizontal Branching T-junction, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2481, July 9-12, 2018.
9. Qiao, Y., A. Mallow, J. Muehlbauer, Y. Hwang*, J. Ling, V. Aute, R. Radermacher, Experimental Study on Portable Air-Conditioning System with Enhanced PCM Condenser, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2483, July 9-12, 2018.
10. Mei, Z., Y. Hwang*, J. Kim, Transient Simulation of Secondary Loop Mobile Air Conditioning Systems, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2484, July 9-12, 2018.
11. Huang, Z., R., Huang, J. Ling, V. Aute, Y. Hwang*, Applicability of A Bifurcated Bare-tube Heat Exchanger in Water-based Hybrid VRF System, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2518, July 9-12, 2018.
12. Dhumane, R., T. Qiu, J. Ling, V. Aute*, Y. Hwang, R. Radermacher, A. Kirkwood, J. Esformes, Evaluating Recharge Options for Phase Change Material Storage of a Personal Conditioning System, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2544, July 9-12, 2018.
13. Nasuta, D.*, S. Li, Y. Hwang*, C. Martin, Experimental Validation of CFD-Based Correlations for 5 mm Louver- and Slit-Fin Heat Exchangers: Lessons Learned, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2582, July 9-12, 2018.
14. Chen, Q*, J. Yu, G. Yan, Y. Hwang*, Theoretical Study on A Modified Subcooling Vapor-compression Refrigeration Cycle Using Hydrocarbon Mixture R290/R600a, 17th International Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2720, July 9-12, 2018.
15. Dhumane, R., Y. Qiao, J. Muehlbauer, J. Ling, V. Aute*, Y. Hwang, Evaluating Recharge Options for Phase Change Material Storage of a Personal Conditioning System, 5th International High Performance Buildings Conference at Purdue, Paper No. 3534, July 9-12, 2018.
16. Tao, Y., Y. Hwang*, R. Radermacher, C. Wang, Electrochemical Compressor for Carbon Dioxide, The 13th Gustav Lorentzen Natural Working Fluids Conference, Valencia, Spain, Paper ID 1108, June 16-20, 2018.
17. Huang, Z., J. Ling, Y. Hwang*, R. Radermacher, Airside Thermal and Hydraulic Performance of a Bare Tube Heat Exchanger with Diameter of 0.8 mm under Dehumidifying Conditions (CH-18-C032), ASHRAE 2018 Winter Conference, Chicago, Jan. 2018.
18. Rang Tu, Yunho Hwang, Performances of Heat Pump Driven Two-stage Desiccant Plates Dehumidifier for Residential Application in Humid Climate, IMECE2017-70124, Proceedings of the ASME 2017 International Mechanical Engineering Congress and Exposition, IMECE2017, November 3-9, 2017, Tampa, Florida, USA.
19. Jianyong Wang, Yunho Hwang*, Jiangfeng Wang, Yiping Dai, Optimal Control Strategy for A Low-temperature Solar Kalina Cycle Power Generation under Off-design Conditions, IMECE2017-70064, The ASME 2017 International Mechanical Engineering Congress and Exposition, IMECE2017, November 3-9, 2017, Tampa, Florida, USA.
20. Nan Zheng, Yunho Hwang*, Li Zhao, Thermodynamic Performance Assessment of R32 and R1234yf Mixtures as Alternatives of R410A, 12th IEA Heat Pump Conference, Rotterdam, Netherlands, Paper ID O.4.1.2, May 2017.

21. Ye Tao, Yunho Hwang*, Chunsheng Wang, Reinhard Radermacher, The Integration of Ammonia Electrochemical Compressor in Vapor Compression System, 12th IEA Heat Pump Conference, Rotterdam, Netherlands, Paper ID O.4.9.1, May 2017.
22. Xiaojie Lin, Yunho Hwang*, Reinhard Radermacher, Byungsoon Kim, Performance of Chilled Water Storage Assisted Variable Refrigerant Flow System, 12th IEA Heat Pump Conference, Rotterdam, Netherlands, Paper ID O.1.2.2, May 2017.
23. Yunho Hwang*, Reinhard Radermacher, Bao Yang, Novel Microemulsion Absorption Cooling Cycle, International Sorption Heat Pump Conference 2017, AB-SY3-1149, Aug. 7-10, 2017, Tokyo, Japan, August 7-10, 2017.
24. Lin, X., Y. Hwang*, R. Radermacher, B. Kim, 2017, A New Control Strategy for Variable Refrigerant Flow Systems, Proceedings of The Third IBPSA-Italy Conference on Building Simulation Applications, Bozen-Bolzano, Italy, February 2017.
25. Tao, C., Hwang, Y., Radermacher, R., Development of an Optimization Framework for Microgrid Energy Conversion Systems, The ASME 2016 International Mechanical Engineering Congress and Exposition, Phoenix AZ, IMECE2016-65371, November 11-17, 2016.
26. Kennett, R., Hwang, Y., Radermacher, R., Evaluation of an Extended-Duct Air Delivery System in Tall Spaces Conditioned by Rooftop Units, The ASME 2016 International Mechanical Engineering Congress and Exposition, Phoenix AZ, IMECE2016-65523, November 11-17, 2016.
27. Du, Y., J. Muehlbauer, J. Ling, V. Aute, Y. Hwang*, R. Radermacher, Rechargeable Personal Air-conditioning Device, ASME 2016 10th International Conference on Energy Sustainability, PowerEnergy2016-59253, June 26-30, 2016, Charlotte, North Carolina, USA.
28. Qian, S., Y. Geng, Y. Wang, J. Ling, J. Muehlbauer, Y. Hwang*, R. Radermacher, Ichiro Takeuchi, Development of Elastocaloric Cooling Technology, The 12th Gustav Lorentzen Natural Working Fluids Conference, Edinburgh, U.K., Paper ID 1013, August 22, 2016.
29. Tao, Ye; Lee, Hoseong; Hwang, Yunho; Radermacher, Reinhard, C. Wang, Experimental Investigation on Electrochemical Ammonia Compressor, The 12th Gustav Lorentzen Natural Working Fluids Conference, Edinburgh, U.K., Paper ID 1016, August 22, 2016.
30. Tao, Ye; Lee, Hoseong; Hwang, Yunho; Radermacher, Reinhard, Performance Investigation on Electrochemical Compressor with Ammonia, 23rd International Compressor Engineering Conference at Purdue, Paper No. 11380, 07/14/2016.
31. Zheng, Nan; Lee, Hoseong; Hwang, Yunho; Radermacher, Reinhard; Zhao, Li, Theoretical Study on Multi-stage Cycles with Zeotropic Mixtures, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22378, 07/14/2016.
32. Huang, Zhiwei; Hwang, Yunho; Aute, Vikrant; Radermacher, Reinhard, Review of Fractal Heat Exchangers, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22384, 07/14/2016.
33. Huang, Zhiwei; Ling, Jiazhen; Hwang, Yunho; Aute, Vikrant; Radermacher, Reinhard, Design and Numerical Parametric Study of Fractal Heat Exchanger, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22381, 07/14/2016.
34. Lin, Xiaojie; Lee, Hoseong; Hwang, Yunho; Radermacher, Reinhard, Control Technology of Heat Pump and Air Conditioning System for Thermal Comfort, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22386, 07/14/2016.
35. Troch, Sarah; Lee, Hoseong; Hwang, Yunho; Radermacher, Reinhard, Harmonization of Life Cycle Climate Performance (LCCP) Methodology, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22382, 07/14/2016.
36. Qian, S., Wang, Y., Geng, Y., Ling, J., Hwang, Y.*, Muehlbauer, J., Radermacher, R., Takeuchi, I., Experimental Evaluation of Compressive Elastocaloric Cooling System, 16th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 22385, 07/14/2016.
37. Qian, S., Ling, J., Hwang, Y., Radermacher, R., Takeuchi, I., Modeling and optimization of a novel heat recovery design for thermoelastic cooling systems, The ASME 2015 International Mechanical Engineering Congress and Exposition, Houston, TX, IMECE2014-52624, November 13-19, 2015.

38. Li, M., Y. Du, H. Lee, Y. Hwang, R., Radermacher, T. Johnson, A. Kariya, Potential of Sandia Cooler Working as Condenser in Refrigerator, Int. Congress of Refrigeration, Yokohama, Japan, Paper No. 0629, 08/2015.
39. Qian, S., Y. Wu, J. Ling, J. Muehlbauer, Y. Hwang, I. Takeuchi, R., Radermacher, Design, development and testing of a thermoelastic cooling prototype, Int. Congress of Refrigeration, Yokohama, Japan, Paper No. 0092, 08/2015.
40. Alabdulkarem, A., J. Muehlbauer, Y. Hwang*, R. Radermacher, Self-sufficient Photovoltaic Powered Chiller for Dairy Applications, ASME 2015 9th International Conference on Energy Sustainability, San Diego, ESFuelCell2015-49027, June 28-July 2, 2015.
41. Alabdulkarem, A., M. Cristiano, Y. Hwang*, R. Radermacher, Separate Sensible and Latent Cooling Packaged Terminal Air Conditioning Unit, ASME 2015 9th International Conference on Energy Sustainability, San Diego, ESFuelCell2015-49065, June 28-July 2, 2015.
42. Qian, S., Alabdulkarem, A., M. Cristiano, Y. Hwang*, R. Radermacher, Study on performance improvement of a compressive thermoelastic cooling system using single objective optimization, ASME 2015 9th International Conference on Energy Sustainability, San Diego, ESFuelCell2015-49745, June 28-July 2, 2015.
43. Cao, T., J. Ling, Y. Hwang*, R. Radermacher, Development of A Novel Two-Stage Heat Pump Clothes Dryer, The ASME 2014 International Mechanical Engineering Congress and Exposition, Montreal, Canada, IMECE2014-36048, November 14-20, 2014.
44. Ling, J., M. Beshr, Y. Hwang*, *Impacts of Refrigerant Mixtures Fractionation on System Performance and Cycle Simulation*, The Third International Symposium on Refrigeration Technology, Zhuhai, China, 10/31/2014.
45. Lee, H. Y. Hwang*, R. Radermacher, Performance Investigation of Saturation Cycle with CO₂ and R290, 11th IIR Gustav Lorentzen Conference on Natural Refrigerants, Paper No. 41, 08/2014.
46. Li, Gang. A. Alabdulkarem, Y. Hwang*, R. Radermacher, Drop in Life Cycle Climate Performance of Low GWP R-410A Alternatives for Heat Pumps, 11th IIR Gustav Lorentzen Conference on Natural Refrigerants, Paper No. 41, 08/2014.
47. Popli, S., H. Lee, Y. Hwang*, R. Radermacher, Visualization of Evaporatively Cooled Heat Exchanger Wetted Fin Area, 15th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2143, 07/14/2014.
48. Qian, S., J. Ling, Y. Hwang*, R. Radermacher, Dynamic performance of a compression thermoelastic cooling air-conditioner under cyclic operation mode, 15th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2244, 07/14/2014.
49. Alabdulkarem, A., H. Lee, Y. Hwang*, R. Radermacher, Evaluation and Soft-Optimization for R410A Low-GWP Replacement Candidates through Testing and Simulation, 15th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2256, 07/14/2014.
50. Lin, X., H. Lee, Y. Hwang*, R. Radermacher, B. Kim, Experimental Investigation of Multi-Functional Variable Refrigerant Flow System, 15th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2375, 07/14/2014.
51. Cao, T., H., Lee, Y. Hwang*, R. Radermacher, Modeling of Hybrid Cooling Systems for Shipboard Application, ASME 2014 8th International Conference on Energy Sustainability, Boston, ESFuelCell2014-6303, June29-July 2, 2014.
52. Y. Hwang*, Harmonizing Life Cycle Climate Performance Analysis of Refrigerants, 11th IEA Heat Pump Conference, AM326272, Montreal, Canada, 05/2014.
53. Ling, J., Y. Hwang*, V. Aute, R. Radermacher, Development of a Control Strategy to Maximize System Performance for Heat Pump Systems, 11th IEA Heat Pump Conference, O.3.8.3, Montreal, Canada, 05/2014.
54. Lin, X., H. Lee, Y. Hwang*, R. Radermacher, J. Kwon and C. Kwon, Experimental Investigation of Desiccant Wheel Assisted MAC System, SAE World Congress, Detroit, MI, Paper No. 2014-01-0689, April 8-10, 2014.
55. Ling, J., M. Eiseler, H. Qiao, V. Aute, Y. Hwang*, and R. Radermacher, Transient Modeling and Validation of an Automotive Secondary Loop Air-Conditioning System, SAE World Congress, Detroit, MI, Paper No. 2014-01-0647, April 8-10, 2014.

56. Li, G., Y. Hwang*, R. Radermacher, Investigation of Adsorption Cold Storage for Residential Application, Int. Sorption Heat Pump Conference, College Park, MD., Paper No. 013, March 30-April 2, 2014.
57. Qian, S., J. Hartsog, K. Gluesenkamp, Y. Hwang*, R. Radermacher, Performance of Trigenation Systems with Adsorption Heat Pump Under Various Climates, Int. Sorption Heat Pump Conference, College Park, MD., Paper No. 013, March 30-April 2, 2014.
58. Alabdulkarem, A., Y. Hwang*, R. Radermacher, Evaluation of Alternative Refrigerant Candidates for R410A through Testing and Simulation, ASHRAE 2014 Winter Meeting Paper No. NY-14-C067, 01/2014.
59. Al-Alili, A., Y. Hwang*, R. Radermacher, Experimental Investigation of a Hybrid Air Conditioner for Hot and Humid Climates, ASHRAE 2014 Winter Meeting Paper No. NY-14-C074, 01/2014.
60. Popil, S., Y. Hwang*, R. Radermacher, Performance Enhancement of Herringbone Wavy-Fin Round Tube Inclined Heat Exchangers with and without Hydrophilic Coating using Spray and Deluge Cooling, V.8B: Heat Transfer and Engineering, The ASME 2013 International Mechanical Engineering Congress and Exposition, Houston, Texas, USA, IMECE2013-62187, November 15-21, 2013.
61. Al-Alili, A., Y. Hwang*, R. Radermacher, Optimization Study of A Hybrid Solar Air conditioner, ASME 2013 7th International Conference on Energy Sustainability, Minneapolis, ESFuelCell2013-18130, July 14-19, 2013.
62. Qian, S., K. Gluesenkamp, Y. Hwang*, R. Radermacher, Experimental Study on Performance of A Residential Combined Cooling, Heating, and Power System under Varying Building Load, ASME 2013 7th International Conference on Energy Sustainability, Minneapolis, ESFuelCell2013-18043, July 14-19, 2013.
63. Nasuta, D.*, J. Bush, Y. Hwang, R. Domitrovic, R. Radermacher, A. Amarnath, Modeling Advanced Heat Pump Water Heater Systems, ASHRAE 2013 Annual Meeting, Paper No 10910, 06/2013.
64. Ling, J., S. Qian, L. Huang, Y. Hwang*, R. Radermacher, The Winner Design of the *Max Tech and Beyond Competition: A High-efficient Residential Air-conditioning System*, ASHRAE 2013 Annual Meeting Paper No. 10867, 06/2013.
65. Lee, H., T. Cao, Y. Hwang*, R. Radermacher, Experimental Investigation of A Desiccant Wheel Cycle, Fourth Conference on Thermophysical Properties and Transfer Processes of Refrigerants, Delft, The Netherlands, Paper No. TP-010, June 17-19, 2013.
66. Ling, J., A. Vikrant, Y. Hwang, and R. Radermacher, A New Computational Tool for Automotive Cabin Air Temperature Simulation, SAE World Congress, Detroit, MI, Paper No. 2013-01-0868, April 16-18, 2013.
67. Eisele, M., Y. Hwang*, R. Radermacher, Utilization of Ice Storage in Secondary Loop Automotive Air-Conditioning Systems, SAE World Congress, Detroit, MI, 2013-01-0235, April 16-18, 2013.
68. Montgomery, G., Y. Hwang*, Review of Life Cycle Climate Performance Analysis, The 2nd IIR International Conference on Sustainability and Cold Chain, April 2-4, 2013, Paris, France.
69. Popil, S., Y. Hwang*, R. Radermacher, Experimental Investigation of a Flat Tube-Louver Fin Heat Exchanger Performance Working As A Cooler in Dry and Wet Conditions, Volume 7: Fluids and Heat Transfer, Parts A, B, C, and D, The ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, USA, IMECE2012-85884, November 9-15, 2012.
70. Alabdulkarem, A., Y. Hwang*, R. Radermacher, Efficiency Improvement of Natural Gas Combined Cycle Power Plant with CO₂ Capturing and Sequestration, Volume 6: Energy, Parts A and B, The ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, USA, IMECE2012-87436, November 9-15, 2012.
71. Al-Alili, A., Y. Hwang*, R. Radermacher, Experimental Investigation of a Desiccant Wheel Cycle, The ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, USA, IMECE2012-86309, November 9-15, 2012.

72. Xu, X., Y. Hwang*, R. Radermacher, *Performance Comparison of R410A and R32 In A Vapor Injection Heat Pump System in A Flash Tank*, 6th Asian Conference for Refrigeration and Air Conditioning at Xi'an, China, Paper No. 2989, 08/28/2012.
73. Hwang Y.*, H. Kim, K. Jang, S. Byon, *Modeling of Suctionline Heat Exchanger for R134a Mobile Air-conditioning System*, 6th Asian Conference for Refrigeration and Air Conditioning at Xi'an, China, Paper No. 2989, 08/28/2012.
74. Ling, J., Y. Hwang*, R. Radermacher, *A Simulation Tool for Radiative Heat Exchangers*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2324, 07/16/2012.
75. Ling, J., Y. Hwang*, R. Radermacher, *Design of Divided Condensers for Desiccant Wheel-Assisted Separate Sensible and Latent Cooling AC Systems*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2325, 07/16/2012.
76. Xu, X., Y. Hwang*, R. Radermacher, H. Pham, *Performance Measurement of R32 Vapor Injection Heat Pump System*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2328, 07/16/2012.
77. Qian, S., L. Huang, V. Vikrant, Y. Hwang*, R. Radermacher, *Effectiveness of Entropy Dissipation Metric and Entropy Generation Units in The Design of Fin-Tube Heat Exchangers*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2329, 07/16/2012.
78. Kwon, L., Y. Hwang*, R. Radermacher, B. Kim, *Field Performance Measurements of VRF System with Subcooling Heat Exchanger*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2330, 07/16/2012.
79. Popli, S., Y. Hwang*, R. Radermacher, *Enhancement of Round Tube and Flat Tube-Louver Fin Heat Exchanger Performance Using Deluge Water Cooling*, 14th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2331, 07/16/2012.
80. Ling, J., Y. Hwang*, R. Radermacher, *Performance Enhancement of R744 Systems by Separate Sensible and Latent Cooling Technology*, The 10th Gustav Lorentzen Conference on Natural Refrigerant at Delft, The Netherlands, Paper No. GL-150, 06/25/2012.
81. Schoenfeld, J., Y. Hwang*, R. Radermacher, *Performance Enhancement of CO₂ Refrigeration Systems by Thermoelectric Subcooler*, The 10th Gustav Lorentzen Conference on Natural Refrigerant at Delft, The Netherlands, Paper No. GL-151, 06/25/2012.
82. Leighton, D., Y. Hwang*, and R. Radermacher, *Modeling of Household Refrigerator Performance with Low Global Warming Potential Alternative Refrigerants*, ASHRAE Transactions, V. 118, Part 1, CH-12-C084, 01/2012.
83. Alabdulkarem, A., Y. Hwang*, R. Radermacher, *New Energy Efficient CO₂ Pressurization Strategies for Enhanced Oil Recovery Applications*, Proceedings of Carbon Management Technology Conference, Paper No. CMTC-151639, 02/2012.
84. Ling, L., Y. Hwang*, V. Aute, *Thermal Comfort Simulation for Low ΔT Heat Exchangers*, Reinhard Radermacher, DKV, Paper No. AA-IV-08, 11/16/2011.
85. Xu, X., Y. Hwang*, R. Radermacher, *CFD Modeling of Two-Phase Fluid Separation in A Flash Tank Used In a Vapor Injection Heat Pump Cycle Control Strategy*, IEA Heat Pump Conference, No. 00225, 08/2011.
86. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, *Enhancement Options for Separate Sensible and Latent Cooling Air-Conditioning Systems*, International Congress of Refrigeration, Paper No. 708, Czech Republic, 08/21/2011.
87. Okuma, T.*, R. Radermacher, Y. Hwang, *A Novel Application of Thermoelectric Modules to an HVAC System under Cold Climate Operation*, The 30th International Conference on Thermoelectrics, Traverse City, Michigan, USA, 07/2011.
88. Eisele, M., Y. Hwang*, R. Radermacher, *Small-Scale Dynamic Test Facility for Automotive Thermal Management Systems*, Vehicle Thermal Management Systems (VTMS) 10 Conference, pp. 523-535, Birmingham, U.K., 05/19/2011.
89. Gluesenkamp, K.*, R. Radermacher, Y. Hwang, *High Efficiency Trigeneration Systems for Buildings*, 2nd European Conference on Polygeneration, Spain, pp. 38-58, 03/30/2011.

90. Gluesenkamp, K.*, R. Radermacher, Y. Hwang, Trends in Absorption Machines, International Sorption Conference (ISHPC11), Padua, Italy, pp. 13-22, 04/08/2011.
91. Gluesenkamp, K.*, C. Horvath, R. Radermacher, Y. Hwang, *Air-cooled, Single Effect, Waste Heat-driven Water/LiBr Absorption System for High Ambient Temperatures*, International Sorption Conference (ISHPC11), pp. 135-144, Padua, Italy, 04/08/2011.
92. Gluesenkamp, K., R. Radermacher, Y. Hwang*, *Crystallization Inhibitors for Water/LiBr Absorption Chillers*, International Sorption Conference (ISHPC11), pp. 145-154, Padua, Italy, 04/08/2011.
93. Gluesenkamp, K.*, R. Radermacher, Y. Hwang, *Preliminary Design of a Low Regeneration Temperature Residential Adsorption Chiller*, International Sorption Conference (ISHPC11), pp. 615-624, Padua, Italy, 04/08/2011.
94. Popli, S.*, P. Rogers, S. A. Hashimi, V. Eveloy, R. Radermacher, Y. Hwang, *Opportunities for Energy Efficiency Enhancements in the Oil and Gas Industry using Waste Heat Powered Absorption Chillers*, SPE-The 14th Abu Dhabi Int. Petroleum Exhibition and Conference, Abu Dhabi, UAE, 11/2010.
95. Ma, Y.*, Y. Hwang, and R. Radermacher, *A General Geometrical Model for the Positive Displacement Compressors and Expanders*, Int. Symposium on Refrigeration Technology, Zhuhai, China, Paper No. GRE056, pp. 361-369, 08/07/2010.
96. Ling, J.*, O. Kuwabara, Y. Hwang, R. Radermacher, *Enhancement of the Separate Sensible and Latent Cooling Air-Conditioning Systems by Divided Heat Exchangers*, Int. Symposium on Refrigeration Technology, Zhuhai, China, Paper No. GRE057, pp. 7-16, 08/07/2010.
97. Xu, X., Y. Hwang*, R. Radermacher, H. Pham, *Control Strategy and Refrigerant Charge Management of Vapor Injection Cycle with a Flash Tank*, Int. Symposium on Refrigeration Technology, Zhuhai, China, Paper No. GRE058, pp. 17-25, 08/07/2010.
98. Kuwabara, O.*, J. Ling, Y. Hwang, and R. Radermacher, *Experimental Evaluation of Separate Sensible and Latent Cooling Air-Conditioning System Integrated with Desiccant Wheel*, 13th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2250, 07/15/2010.
99. Xu, X., Y. Hwang*, R. Radermacher, H. Pham, *Control Strategy of Vapor Injection Cycle*, 13th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2249, 07/15/2010.
100. Ling, J., O. Kuwabara, Y. Hwang*, R. Radermacher, *Enhancement of the Separate Sensible and Latent Cooling Air-Conditioning Systems*, 13th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2251, 07/15/2010.
101. Aynur, T., Y. Hwang*, R. Radermacher, *Experimental Evaluation of The Effect of The Control Mode on The Performance of a VRF System in Cooling Mode*, Clima 2010- 10th REHVA World Congress, Istanbul, Turkey, Paper No. 712, 05/12/2010.
102. Al-Alili, A.*, Y. Hwang, R. Radermacher, I. Kubo, P. Rodgers, *High Efficiency Solar Cooling Technique*, Energy 2030, Abu Dhabi, U.A.E., November 4-5, 2008.
103. Fernandez, N., Y. Hwang*, and R. Radermacher, *Performance of CO₂ Heat Pump Water Heaters*, The 8th IIR Gustav Lorentzen Conference on Natural Working Fluids, Copenhagen, Paper No. HPU-05-T2-05, 09/10/2008.
104. Kalinowski, P., Y. Hwang*, and R. Radermacher, *Waste Heat Powered Absorption Refrigeration System In The LNG Recovery Process*, Int. Sorption Heat Pump Conference, Seoul, Korea, Paper No. 6-IV-078, 09/06/2008.
105. Aynur, T., Y. Hwang*, R. Radermacher, *A Heat Pump Desiccant Unit for Dehumidification and Humidification*, 12th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2118, 07/17/2008.
106. Aynur, T., Y. Hwang*, R. Radermacher, *The Effect of the Ventilation and the Control Mode on the Performance of a VRV System in Cooling and Heating Modes*, 12th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2264, 07/17/2008.
107. Ling, J., Y. Hwang*, R. Radermacher, *Theoretical Study on Separate Sensible and Latent Cooling Air-Conditioning System*, 12th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2120, 07/17/2008.

108. Schoenfeld, J., Y. Hwang*, R. Radermacher, *Integration of a Thermoelectric Subcooler into a Carbon Dioxide Transcritical Vapor Compression Cycle Refrigeration System*, 12th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2229, 07/17/2008.
109. Wang, X., Y. Hwang*, R. Radermacher, *Performance Investigation of Refrigerant Vapor-Injection Technique for Residential Heat Pump Systems*, 12th Int. Refrigeration and Air Conditioning Conference at Purdue, Paper No. 2119, 07/17/2008.
110. Hwang, Y.*, A. Gado, and R. Radermacher, *Cycling in Climate Control Systems with Orifice Tube and Thermostatic Expansion Valve*, SAE World Congress, Detroit, MI, Paper No. 2007-01-1195, 04/16/2007.
111. Aynur, T., Y. Hwang*, R. Radermacher, *Field Performance Measurements of a VRV AC/HP System*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/20/2006.
112. Yun, R., Y. Hwang*, R. Radermacher, and R. Zecirovic, *Comparison of Performance of a Residential Air-Conditioning System Using Microchannel and Fin-and-Tube Heat Exchanger*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/26/2006.
113. Hwang, Y.*, R. Radermacher, S. Hwang, H. Lee, S. Ha, *Performance Potential of CO₂ Cycle with a Linear Compressor*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/26/2006.
114. Yun, R., Y. Hwang*, R. Radermacher, *Gas Cooling Heat Transfer and Pressure Drop Characteristics of CO₂/Oil Mixture in a Microchannel*, Proceedings of 7th IIR Gustav Lorentzen Conference on Natural Working Fluids, pp. 487-490, Trondheim, Norway, 05/31/2006.
115. Hwang, Y.*, R. Radermacher, S. Hwang, H. Lee, and S. Ha, *Performance Potential of CO₂ Cycle for a Medium Temperature Refrigeration System*, Proceedings of The 3rd Asian Conference on Refrigeration and Air-conditioning, Gyeongju, Korea, 05/23/2006.
116. Hwang, Y.*, D. Jin and R. Radermacher, *Comparison of Hydrocarbon R-290 and Two HFC Blends R-404A and R-410A for Low Temperature Refrigeration Applications*, IIR Conference for Commercial Refrigeration, Italy, 08/31/2005.
117. Hwang, Y.*, X. Wang and R. Radermacher, *Performance of a Two-Stage Carbon Dioxide Compressor with an Intercooler*, The 5th Int. Conference on Compressor and Refrigeration, pp. 152-163, Dalian, China, 07/21/2005.
118. Hwang Y.*, Reinhard Radermacher, *Interfacial Friction Factor between Gaseous CO₂ and Oil*, 6th World Conference on ExHTF, pp. 96-97, Miyagi, Japan, 04/21/2005.
119. Gado, A., Y. Hwang*, R. Radermacher, *Dynamic Performance Measurement Method Integrated with Cabin Model*, Paper No. 2005-01-1510, SAE World Congress, 04/11/2005.
120. Hotta, T.*, Y. Ozaki, T. Hirata, and Y. Hwang, *Oil Circulation Rate in CO₂ Cycle*, The Int. Symposium on New Refrigerants and Environmental Technology, JRAIA, Japan, 11/2004.
121. Hwang Y.*, R. Radermacher, *Life Cycle Climate Performance (LCCP) Analysis of Propane and Two HFC Blends in Direct Expansion Medium Temperature Refrigeration Systems*, The 6th Gustav Lorentzen Natural Working Fluids Conference at Glasgow, UK, 09/01/2004.
122. Hwang, Y.*, J. Muehlbauer, R. Radermacher, *Performance Evaluation of A Two-Stage Carbon Dioxide Compressor*, The 6th Gustav Lorentzen Natural Working Fluids Conference at Glasgow, UK, 09/01/2004.
123. Dreiman, N.*, R. Bunch, Y. Hwang, R. Radermacher, *Two-stage Rolling Piston Carbon Dioxide Compressor*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/15/2004.
124. Cremaschi, L., Y. Hwang*, R. Radermacher, *Investigation of Oil Retention in Residential Heat Pump*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/15/2004.
125. Gado, A., Y. Hwang*, R. Radermacher, *Measurements of the Dynamic Performance and Behavior of Air-Conditioning Systems Using a Dynamic Test Facility*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/15/2004.

126. Celik, A., Y. Hwang*, R. Radermacher, *Performance of CO₂ Cycles with a Hermetic, Two-Stage CO₂ Compressor*, Int. Refrigeration Conference at Purdue, West Lafayette, IN, 07/15/2004.
127. Hwang, Y.*, R. Radermacher, S. Spinazzola, and Z. Menachery, *Performance Measurements of A Forced Convection Air-Cooled Rack*, IThERM, V. 1, pp. 194-198, 06/04/2004.
128. Hwang, Y.*, L. Cremaschi, R. Radermacher, T. Hirata, Y. Ozaki, and T. Hotta, *Oil Circulation Behavior in Low Temperature CO₂ Climate Control Systems*, Paper No. 2004-01-0915, pp. 33-38, SAE World Congress, 03/08/2004.
129. Hwang, Y.*, A. Gado, and R. Radermacher, *Performance of Propane in a Unitary Heat Pump*, Proceedings of the 21st Int. Congress of Refrigeration, Washington D.C., 08/22/2003.
130. Hwang, Y.*, L. Cremaschi, R. Radermacher, T. Hirata, Y. Ozaki, and T. Hotta, *Oil Circulation Ratio in CO₂ Climate Control Systems*, Paper No. 2003-01-0730, SAE World Congress, 03/03/2003.
131. Hwang, Y.*, A. Gado, R. Radermacher, *Performance Comparison of Hydrocarbon R-290 with R-22 in Residential Heat Pump System*, Proceedings of the 5th IIR-Gustav Lorentzen Conference, pp. 603-610, Guangzhou, China, 09/20/2002.
132. Huff, H., Y. Hwang*, and R. Radermacher, *Options for A Two-stage Transcritical Carbon Dioxide Cycle*, Proceedings of the 5th IIR-Gustav Lorentzen Conference, pp. 143-149, Guangzhou, China, 09/20/2002.
133. Hwang, Y.*, L. Cremaschi, R. Radermacher, T. Hirata, Y. Ozaki, and T. Hotta, *Oil Circulation Ratio Measurement in CO₂ Cycle*, Proceedings of the 2002 Int. Conference "New Technologies in Commercial Refrigeration," pp. 22-28, Urbana-Champaign, IL, 07/23/2002.
134. Lee, J., Y. Hwang*, and R. Radermacher, *An Experimental Investigation on Oil Retention Characteristics in CO₂ Air-Conditioning Systems*, Int. Compressor Engineering Conference and Refrigeration and Air Conditioning Conference, Purdue, IN, 07/19/2002.
135. Hwang, Y.*, R. Radermacher, *Opportunities with Alternative Refrigerants*, IThERM 2002, pp. 777-784, San Diego, CA, 06/01/2002.
136. Hwang, Y.*, H. Huff, M. Preissner, R. Radermacher, *CO₂ Transcritical Cycles for High Temperature Applications*, ASME Int. Mechanical Engineering Congress, New York, NY, IMECE2001/AES-23630, V.41, pp- 255-260, 11/16/2001.
137. Lee, J., Y. Hwang*, R. Radermacher, and S. Mehendale, *Experimental Investigations on Oil Accumulation Characteristics in a Vertical Suction Line*, ASME Int. Mechanical Engineering Congress, New York, NY, IMECE2001/AES-23607, V.41, pp. 63-69, 11/16/2001.
138. Hwang, Y.*, J. Lee, and R. Radermacher, *An Experimental Investigation on Flow Characteristics of Refrigerant/Oil Mixture in Vertical Upward Flow*, Proceedings of 4th IIR-Gustav Lorentzen Conference, Purdue, IN, 07/28/2000.
139. Cutler, B., Y. Hwang*, R. Radermacher, *Development of Carbon Dioxide Environmental Control Unit*, Proceedings of 4th IIR-Gustav Lorentzen Conference, Purdue, IN, 07/28/2000.
140. Preissner, M.*, B. Cutler, S. Singanamalla, Y. Hwang, and R. Radermacher, *Comparison of Automotive Air-Conditioning System with CO₂ and R134a*, Proceedings of 4th IIR-Gustav Lorentzen Conference, Purdue, IN, 07/28/2000.
141. Hwang, Y.*, R. Radermacher, *Development of Hermetic Carbon Dioxide Compressor*, Proceedings of the Int. Refrigeration Conference at Purdue, pp. 171-175, West Lafayette, IN, 07/17/1998.
142. Hwang, Y.*, R. Radermacher, *Experimental Evaluation of CO₂ Water Heater*, Proceedings of the IIR-Gustav Lorentzen Conference, pp. 321-328, Oslo, Norway, 06/05/1998.
143. Hwang, Y.*, B. Kim, R. Radermacher, *Boiling Heat Transfer Correlation for Carbon Dioxide*, Proceedings of IIR-Conference, "Heat Transfer Issues in Natural Refrigerants," pp. 81-94, College Park, MD, 11/07/1997.

144. Hwang, Y.*, R. Radermacher, *Evaluation of Carbon Dioxide Heat Exchanger*, Proceedings of IIR-Conference, "Heat Transfer Issues in Natural Refrigerants," pp. 105-114, College Park, MD, 11/07/1997.
145. Pande, M.*, Y. Hwang, J. Judge, and R. Radermacher, *An Experimental Evaluation of Flammable/Non-Flammable High Pressure HFC Replacements for R-22*, Proceedings of the Int. Refrigeration Conference at Purdue, pp. 21-27, Purdue, IN, 07/17/1996.
146. Hwang, Y.*, J. Judge, and R. Radermacher, *Evaluation of R-22 Alternatives for Heat Pumps*, Proceedings of the ASME Int. Mechanical Engineering Congress, AES-Vol. 34, pp. 11-17, San Francisco, CA, 11/17/1995.
147. Judge, J.*, Y. Hwang, R. Radermacher, *Experimental Results of Two Drop-In Replacement Refrigerants for HCFC-22*, Proceedings of 19th Int. Congress of Refrigeration, Vol. IVb, pp. 1168-1175, The Hague, The Netherlands, 08/25/1995.
148. Hwang, Y.*, J. Judge, R. Radermacher, *An Experimental Evaluation of Medium and High Pressure HFC Replacements for R-22*, Proceedings of the Int. CFC and Halon Alternatives Conference, pp. 41-48, Washington D.C., 10/23/1995.

f. Patents.

1. Cui, J., I. Takeuchi, M. Wuttig, Y. Wu, R. Radermacher, Y. Hwang, J. Muehlbauer, Thermoelastic Cooling, U.S. Patent, US10119059B2, 2018.
2. Radermacher, R., I. Takeuchi, Y. Hwang, Y. Wu, S. Qian, J. Ling, Solid-state Heating or Cooling Systems, Drives and Methods, U.S. Patent, US10018385B2, 2018.
3. Cole, B., L. Shapiro, D. Wilkins, B. Noel, H. Lee, Y. Hwang, Condenser Heat Exchanger Plate, U.S. Design Patent, US D735,842S, 2015.
4. Cole, B., L. Shapiro, D. Wilkins, B. Noel, H. Lee, Y. Hwang, Evaporator Heat Exchanger Plate, U.S. Design Patent, US D736,361S, 2015.
5. Radermacher, R.*, T. Ishihara, H. Huffs, Y. Hwang, M. Otake, O., Kuwabara, I., Kamimura, Method of operating a multi-stage refrigeration system with pressure control - European Patent Office -, European Patent, EP1703229B1, 2014.
6. Kuwabara, O., R. Radermacher, Y. Hwang, J. Ling, Air conditioner having a desiccant rotor with moisture adsorbing area, U.S. Patent, US8584479, 2013.
7. Hwang, Y.*, H. Lee, J. Muehlbauer, L. Shapiro, B. Cole, Heat Exchanger Plate, U.S. Design Patent, US D658,748, 2012
8. Hwang, Y.*, H. Lee, J. Muehlbauer, L. Shapiro, B. Cole, Heat Exchanger Plate, U.S. Design Patent, US D657,856, 2012
9. Hwang, Y.*, H. Lee, J. Muehlbauer, L. Shapiro, B. Cole, Heat Exchanger Plate, U.S. Design Patent, US D657,855, 2012
10. Hwang, Y.*, H. Lee, J. Muehlbauer, L. Shapiro, B. Cole, Heat Exchanger Plate, U.S. Design Patent, US D657,854, 2012
11. Sim, J.*, Y. Ko, J., Shin, B. Choi, J. Hwang, Y. Jeong, S. Ha, Y. Hwang, Refrigerator and Method for Controlling Operation of the Same, U.S. Patent, US7726141B2, 2010.
12. Radermacher, R.*, T. Ishihara, H. Huffs, Y. Hwang, M. Otake, O., Kuwabara, I., Kamimura, Multi-stage refrigeration system including sub-cycle control characteristics, U.S. Patent, US7631510B2, 2009.

g. Extension Activities.

- a. Student design competition participations
 - 2017 Solar Decathlon, Hosted by the U.S. DOE, Lead Faculty for HVAC Team; **Won Second Place** among 13 University Teams selected.
 - Graduate and undergraduate students: **MaxTech and Beyond**, Ultra-low Energy Use Appliance Design, Hosted by Lawrence Berkeley National Laboratory, Fall 2012 - Spring 2013; **Won First Place** among Eight Project Teams selected.
 - Graduate and undergraduate students: **MaxTech and Beyond**, Ultra-low Energy Use Appliance Design, Hosted by Lawrence Berkeley National Laboratory, Fall 2011 - Spring 2012; **Won First Place** among Nine Project Teams selected.

- Undergraduate student: Modeling and Design of Highly Efficient Graphite Foam Heat Exchangers, Hosted by Lockheed Martin, Fall 2009.

h. Awards.

1. **Best Paper Award**, Rang Tu and Yunho Hwang, "Performances of Heat Pump Driven Two-stage Desiccant Plates Dehumidifier for Residential Application in Humid Climate" in the Energy Track, ASME 2018 International Mechanical Engineering Conference and Exhibition.
2. **Best Student Paper Award**, Tao Cao, Yunho Hwang and Reinhard Radermacher, "Evaluation of an extended-duct air delivery system in tall spaces conditioned by rooftop units" in the Energy Track, ASME 2017 International Mechanical Engineering Conference and Exhibition.
3. **1st Place Student Paper Award**, Ye Tao, Hoseong Lee, Yunho Hwang, Reinhard Radermacher, Performance Investigation on Electrochemical Compressor with Ammonia, 23rd International Compressor Engineering Conference at Purdue, Paper No. 11380, 07/14/2016.
4. **Best Paper Award**, Magnus Eisele, Yunho Hwang*, Reinhard Radermacher, Small-Scale Dynamic Test Facility for Automotive Thermal Management Systems", in Vehicle Thermal Management Systems (VTMS) 10 Conference, 2011.
5. **Honorable Mention Award**, Abdul Alabulkarem, Yunho Hwang, Reinhard Radermacher "New Energy Efficient CO₂ Pressurization Strategies for Enhanced Oil Recovery Applications" in 2011 ASME Int. Mechanical Engineering Congress and Exposition.
6. **Best Paper Presentation Award** at Sixth World Conference on Experimental Heat Transfer, Fluid Mechanics, and Thermodynamics (ExHFT-6), 2005.

i. Editorships, Editorial Boards and Reviewing Activities for Journals.

1. Editor:
 - Energy, Elsevier (Netherlands), Subject Editor (2015-present)
 - Int. Journal of AC&R, World Scientific (US), Editor (2013-present)
2. Guest Editor
 - 2014 International Sorption Heat Pump Conference, S&T for the Built Environment, Vol. 21, Issue 3, 2015.
 - Special Edition: Expander, Int. Journal of HVAC&R, V15, N4, 2009.
3. Editorial Board
 - International Journal of Low-Carbon Technologies, Oxford Academic (UK) (2017-present)
 - Journal of Petroleum Engineering, Hindawi (UK) (2012-2017)
 - Open Journal of Energy Efficiency, Scientific Research Publishing (US) (2012-present)
 - Engineering, Scientific Research Publishing (US) (2010-present)
4. Reviewing Activities for Journals:
 - Applied Energy
 - Applied Thermal Engineering
 - Energy
 - International Journal of Heat and Mass Transfer
 - International Journal of Refrigeration
 - International Journal of Thermal Sciences
 - Science and Technology for the Built Environment (Former: International Journal of HVAC&R)

4. Service.

a. Professional

i. Offices and committee memberships held in professional organizations.

Dates	Committee memberships	Professional organization
2011 to 2016	Chair, LCCP Working Group	Int. Institute of Refrigeration
2011 to Current	Vice President, Commission B1	Int. Institute of Refrigeration
1999 to 2011	Secretary, Commission B2	Int. Institute of Refrigeration

2017 to present	Member, Refrigeration Committee	ASHRAE
2002 to present	Member, TC 3.4, 8.4, 8.7, 8.11, SPC118, CEC	ASHRAE
2008-2011	Chair, TC10.10	ASHRAE
2018 to present	Chair of Executive Committee, Advanced Energy System Division (AESD)	ASME
2014 to present	Executive Committee Member in AESD	ASME
2013 to 2014	Chair, Technical Committee of Renewable Energy and Energy Conversion in AESD	ASME
2011 to 2013	Vice Chair, Technical Committee of Renewable Energy and Energy Conversion in AESD	ASME

ii. Proposal reviewing activities

- 2010 to Present: Department of Energy's Grant Application
- 2010 to Present: Qatar National Research Fund
- 2003 to Present: California State's Energy Innovations Small Grant Program

iii. International activities not listed above.

- Scientific Committee, the 5th IIR Conference on Thermophysical Properties and Transfer Processes of Refrigerants, April 2017.
- Scientific Committee, the 3rd International Symposium on Refrigeration Technology, Zhuhai, China, October 2014.
- Scientific Committee, the 4th IIR Conference on Thermophysical Properties and Transfer Processes of Refrigerants, June 2013.
- Scientific Committee, the 8th International Conference on Multiphase Flow, June 2013.
- Scientific Committee, the 8th World Conf. on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics will be held in Lisbon, June 24-27, 2013.
- Scientific Committee, the 6th World Conference on Experimental Heat Transfer, Fluid Mechanics, and Thermodynamics, 2005.

iv. Organizing Conferences

- General Chair in ASME 2015 9th International Conference on Energy Sustainability, San Diego CA, June 28-July 2, 2015.
- Executive Advisory Committee in ASME 2015 9th International Conference on Energy Sustainability, San Diego CA, June 28-July 2, 2015.
- Technical Program Chair in ASME 2014 8th International Conference on Energy Sustainability, Boston, MA, June 30-July 2, 2014.
- General Chair in 2014 International Sorption Heat Pump Conference, College Park, MD, March 31-April 3, 2014.

b. Service Awards and Honors.

- **ASHRAE Fellow**, January 2019
- **ASME Fellow**, December 2014
- **ASHRAE Exceptional Service Award**, June 2013.
- **ASHRAE Distinguished Service Award**, June 2010.
- **SAE Member Service Award**, November 2008.

c. Certifications.

- EPA Certified Universal Technician per Section 608 of Clean Air Act

5. Teaching.

a. Courses taught in the last five years.

Course	Years Taught (S: Spring; F: Fall)
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ENPM808C: Ocean Energy Harvesting	2017S
ENME635: Energy Conversion Systems	2013S, 2012S, 2010S, 2009S
ENME635: Energy Conversion Systems, International Joint Summer Course	2010, Shanghai Jia Tong University 2009, Hong Kong Poly Tech Univ. 2008, Pusan National University
ENME701: Sustainable Energy Production & Utilization	2018F
ENME701: Sustainable Energy Production & Utilization International Joint Summer Course	2015, Korea University 2013, University of Maryland
ENPM 651: Heat Transfer for Modern Applications	2019S, 2016S, 2013S
ENME423: Building Cooling, Heating & Power Integration	2010F, 2009F, 2008F
ENME489M: Special Topics in Mechanical Eng., Ultra-low Energy Use Appliance Design II	2015S, 2014S, 2013S, 2012S
ENME489M: Special Topics in Mechanical Engineering, Ultra-low Energy Use Appliance Design I	2017S, 2014F, 2013F, 2012F, 2011F
ENME808L: Ultra-low Energy Use Appliance Design II	2015S, 2014S, 2013S, 2012S
ENME808P: Ultra-low Energy Use Appliance Design I	2017S, 2014F, 2013F, 2012F, 2011F
ENME371: Product Engineering and Manufacturing	2011F

b. Course Development.

Course Developed	Years Started
ENPM808C: Ocean Energy Harvesting	2017S
ENME701: Sustainable Energy Production & Utilization	2018F
ENME701: Suitability, International Joint Summer Course	2013 Summer
ENPM 651: Heat Transfer for Modern Applications	2013S
ENME635: Energy Conversion Systems, International Joint Summer Course	2010, Shanghai Jia Tong University 2009, Hong Kong Poly Tech University 2008, Pusan National University
ENME808L: Ultra-low Energy Use Appliance Design II	2012S
ENME808P: Ultra-low Energy Use Appliance Design I	2011F
ENME489M: Special Topics in Mechanical Engineering, Ultra-low Energy Use Appliance Design II	2012S
ENME489M: Special Topics in Mechanical Engineering, Ultra-low Energy Use Appliance Design I	2011F