

YONGMEI XUAN

Visiting Scholar of Mechanical Engineering, University of Illinois at Urbana-Champaign

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RESEARCH INTERESTS

- Alternative refrigerant
- Low grade energy utilization systems, including ejector refrigeration and absorption refrigeration systems
- Energy efficient air conditioning systems, including evaporative cooling and radiant cooling systems
- Heat transfer and thermodynamics in air conditioning & refrigeration systems

EDUCATION

1994.9-1998.7, Xi'an Polytechnic University, Xi'an, China, Heating, Ventilation and Air Conditioning Engineering, B.S.

1998.9-2001.5, Xi'an Polytechnic University, Xi'an, China, Heating, Ventilation and Air Conditioning Engineering, M.S.

2001.9-2004.7, Zhejiang University, Hangzhou, China, Engineering Thermophysics, Ph.D.

PROFESSIONAL EXPERIENCE

2004.8-2005.3, Lecturer, Zhejiang University, China

2005.4-2017.8, Lecturer (2005.4-2006.12), Associate Professor (2006.12-2012.12), Professor (2012.12-2017.8), Xi'an Polytechnic University, China

2017.9-date, Professor, Vice Director of Department of Energy and Environmental Engineering, NingboTech University, China

2008.8-2009.4, Research Associate, BSE (Department of Building Services Engineering), Hong Kong Polytechnic University

2014.9-2015.9, Visiting Scholar, CBE (Center for the Built Environment), University of California, Berkeley

REPRESENTATIVE PUBLICATION

1. Li, Q.; Chen, G.; Wang, Q.; Tao L.; **Xuan, Y.**; Experimental study of condensation heat transfer of R134a inside the micro-fin tubes at high mass flux, International Journal of Heat and Mass Transfer, 2022, 187, 122524.
2. Shahzad, M.; Ding, Y.; **Xuan, Y.**; Gao, N.; Chen, G., Performance analysis of a novel double stage multifunctional open absorption heat pump system: An industrial moist flue gas heat recovery application. Energy Conversion and Management, Energy Conversion and Management, 2022, 254, 115224.
3. Shahzad, M.; Ding, Y.; **Xuan, Y.**; Gao, N.; Chen, G., Modelling and performance analysis of a single stage open absorption heat pump system in aspen plus using aqueous LiBr and HCOOK: A waste moist heat recovery application. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy. 2021. doi:10.1177/09576509211047831
4. **Xuan, Y.**; Duan, B.; Fang, K.; Ding, Y.; Gao, N.; Chen, G. Vapor Pressure Measurement of Ternary Systems LiCl + [Emim]I + H₂O and LiCl + [Dmim]I + H₂O, J. Chem. Eng. Data, 2021, 66(8):3346-3353

5. Shahzad, M.; Ding, Y.; **Xuan, Y.**; Gao, N.; Chen, G., Energy Efficiency Analysis of a Multifunctional Hybrid Open Absorption System for Dehumidification, Heating, and Cooling: An Industrial Waste Heat Recovery Application. *Energy Conversion and Management*, 2021,
6. Ding, Y.; Gao, N.; Wu, Y.; **Xuan, Y.**; Chen, G., Vapor-Pressure Measurement of Ternary System $\text{CaCl}_2 + [\text{Emim}]\text{Br} + \text{H}_2\text{O}$, $\text{CaCl}_2 + [\text{Emim}]\text{Cl} + \text{H}_2\text{O}$, $\text{CaCl}_2 + [\text{Emim}]\text{Ac} + \text{H}_2\text{O}$, and $\text{CaCl}_2 + [\text{Emim}]\text{NO}_3 + \text{H}_2\text{O}$. *J. Chem. Eng. Data*, 2021, 66, (1), 692-701.
7. Ding, Y.; Gao, N.; Li, N.; Chen, G.; **Xuan, Y.**, Experimental and modelling of vapour–liquid equilibria of ternary systems $\{\text{HCOOK} + [\text{Emim}]\text{Ac} + \text{H}_2\text{O}\}$, $\{\text{HCOOK} + [\text{Emim}]\text{Br} + \text{H}_2\text{O}\}$, $\{\text{HCOOK} + [\text{Emim}]\text{Cl} + \text{H}_2\text{O}\}$, and $\{\text{HCOOK} + [\text{Emim}]\text{NO}_3 + \text{H}_2\text{O}\}$. *J. Chem. Thermodyn.*, 2021, doi: <https://doi.org/10.1016/j.jct.2021.106503>.
8. Hao, X.; Gao, N.; Chen, G.; Volovyk O.; Wang X.; **Xuan Y.**, Experimental Investigation of the Ejector Refrigeration Cycle for Cascade System Application. *J. Therm. Sci.*, 2020
9. **Xuan, Y.**; Fang, K.; Duan, B.; Gao, N.; Chen, G., Vapor Pressure Measurement of Ternary Systems $\text{LiBr} + [\text{Emim}]\text{I} + \text{H}_2\text{O}$ and $\text{LiBr} + [\text{Dmim}]\text{I} + \text{H}_2\text{O}$. *J. Chem. Eng. Data*, 2020, 65, (2), 487-494.
10. Hao, X., Gao, N., Chen, G., Oleksii, V.; Wang, X.; **Xuan, Y.**, Experimental Investigation of the Ejector Refrigeration Cycle for Cascade System Application. *Journal of Thermal Science*, 2020, <https://doi.org/10.1007/s11630-020-1367-2>.
11. **Xuan, Y.**; Ding, X.; Gao, N.; Ding, Y.; Meng X.; Chen, G., Vapor Pressure Measurement of Ternary Systems $\text{LiCl} + [\text{Emim}]\text{Cl} + \text{H}_2\text{O}$, $\text{LiBr} + [\text{Emim}]\text{Cl} + \text{H}_2\text{O}$ and $\text{LiCl} + [\text{Emim}]\text{Br} + \text{H}_2\text{O}$. *J. Chem. Eng. Data*, 2019, 64: 2406-2413.
12. Gao, N.; Wang, X.; **Xuan, Y.**; Chen, G., An artificial neural network for the residual isobaric heat capacity of liquid HFC and HFO refrigerants. *International Journal of Refrigeration*, 2019, 98, 381-387.
13. Huang, X.; **Xuan, Y.**; et al. *Theory and Application of Evaporative Air Conditioning*. Beijing: China Architecture & Building Press, 2010.
14. Huang, X.; **Xuan, Y.**; et al. *Evaporative Air Conditioning Handbook*. Beijing: China Machine Press, 2009 (a Chinese translation of *Evaporative Air Conditioning Handbook* compiled by Watt Brown).
15. **Xuan, Y.**; Xiao, F.; et al. Research and application of evaporative cooling in China: A review (I)– Research. *Renewable & Sustainable Energy Reviews*, 2012, 16(5): 3523-3534.
16. **Xuan, Y.**; Xiao, F.; et al. Research and application of evaporative cooling in China: A review (II)– Systems and equipment. *Renewable & Sustainable Energy Reviews*, 2012, 16(5): 3535-3546.
17. **Xuan, Y.**; Chen, G., Experimental study on HFC-161 mixture as an alternative refrigerant to R502. *International Journal of Refrigeration*, 2005, 28(3): 436-441.

REPRESENTATIVE PATENTS

1. A cold air and hot water combined supply system based on open absorption cycle (201910680138.3), Chinese invention patent.
2. A refrigeration system used for reducing the refrigerant quality at the inlet of evaporator (201910213704.X), Chinese invention patent.
3. A refrigeration system for improving inlet refrigerant distribution uniformity of multi-channel evaporator (201910213077.X), Chinese invention patent.
4. Environmentally friendly alternative refrigerant for HCFC 22 (7595101), PTC patent.