**CURRICULUM VITAE**

**Akio MIYARA**

**Professor**

**Department Mechanical Engineering**

**Sag University**

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PERSONAL INFORMATION

**Name:** Akio Miyara （宮良　明男）

**Date of Birth:** 11th February 1962 (54 years old)

**Place of Birth:** Okinawa, Japan

**Nationality:**  Japanese

**Marital Status:**  Married, Two sons

**Residence:**  316-31, Fukuro, Honjo-machi, Saga-shi, Saga, 840-0023 Japan

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**Email:**  miyara@me.saga-u.ac.jp

EDUCATIONS

**April, 1986 – March, 1989:** Interdisciplinary Graduate School of Engineering Science,

Kyushu University

Awarded the degree of Doctor of Engineering for a thesis entitled

“A study of a high performance heat pump system using

nonazeotropic refrigerant mixtures”

**April, 1984 – March, 1986:** Graduate School of Engineering,

Kyushu University

Awarded the degree of Master of Engineering for a thesis

entitled “Condensation and Evaporation of nonazeotropic

refrigerant mixtures”

**April, 1980 – March, 1984:** Department of Mechanical Engineering,

Ryukyu University

PROFESSIONAL EXPERIENCE

**April, 2003 – To Date:** Professor of Department of Mechanical Engineering,

Saga University

**April, 2015 – March, 2016:** Chairman of Department of Mechanical Engineering, Saga University

**April, 2010 – March, 2011:** Chairman of Department of Mechanical Engineering, Saga University

**April, 2004 – March, 2005:** Chairman of Department of Mechanical Engineering, Saga University

**April, 1995 – Sept. 1995:**  Research Fellow of Stuttgart University, Germany, supported

by German government

**March, 1993 – Jan. 1994:**  Visiting Professor of Stuttgart University, Germany, supported

by Japanese government

**April, 1991 – March, 2003:** Associate Professor of Department of Mechanical Engineering,

Saga University

**April, 1989 – March, 1991:** Lecturer of Ocean Thermal Energy Conversion Laboratory,

Saga University

MEMBERSHIP & ACTIVITIES

* Japan Society of Mechanical Engineering (1983 – To Date)
  + March, 2016 – To Date: Counselor
  + April, 2016 – March, 2017 Reviewer member of Transactions of JSME
  + March, 2013 – Feb., 2014 Editorial member of Transactions of JSME
  + March, 2012 – Feb., 2013 Chair of Saga chapter
  + March, 2011 – Feb., 2012 Counselor
  + March, 2006 – Feb., 2007 Chair of Saga chapter
  + March, 2005 – Feb., 2006 Counselor
* Japan Society of Refrigerating and Air Conditioning Engineers (1989 – To Date)
  + May, 2015 – May, 2017 Vice-President
  + May, 2015 – To Date Asian Associate Society Cooperation Committee
  + May, 2015 – May, 2017 Director
  + May, 2014 – May, 2015 Chair of Annual Conference Organizing Committee
  + May, 2013 – May, 2015 Chair of Academic Conference Steering Committee
  + May, 2013 – May, 2015 Director
  + May, 2013 – May, 2015 Chair of Academic Conference Steering Committee
  + May, 2011 – To Date Chair of Heat Exchanger Technology Committee
  + May, 2009 – May, 2010 Chair of Technology Awards Subcommittee
  + May, 2009 – May, 2010 Director
  + May, 2007 – May, 2009 Director
  + May, 2007 – To Date ASHRAE National Committee
* The Heat Transfer Society of Japan
  + May, 2015 – May, 2017 Chair of Kyushu chapter
  + May, 2015 – To Date Member of Asian Union of Thermal Science and

Engineering

* + May, 2009 – May, 2011 Chair of Student’s Best Presentation Award
* The Society of Chemical Engineers, Japan
* Japan Society of Thermophysical Properties
* American Society of Heating Refrigerating and Air-Conditioning Engineers
  + March, 2015 – To Date Board member of Japan chapter
* International Institute of Refrigeration
  + April, 2008 – To Date Member of commission B1

JOURNAL EDITORS

* Applied Thermal Engineering
* Trans. JSRAE

JOURNAL REVIEWERS

* Applied Thermal Engineering
* International Journal of Refrigeration
* Trans JSRAE
* AIChE Journal
* ASHRAE Built Environment
* Energy
* Experimental Thermal and Fluid Science
* Geothermics
* Heat Transfer Engineering
* Heat and Mass Transfer
* International Journal of Heat and Mass Transfer
* International Journal of Thermal Sciences
* Energies
* Journals of the Japan Society of Mechanical Engineers

RESEARCH FIELDS

* Heat transfer and pressure drop of pure refrigerants and refrigerant mixtures
* In-tube condensation and evaporation
* Plate type heat exchangers
* Thermophysical properties of refrigerants
* Heat exchangers for ground source heat pump
* Numerical simulations

GRANTS

**2014 – 2018:** Grant on ‘Renewable energy heat utilization technology and development project’ of New Energy and Industrial Technology Development Organization of Japan.

**2013 – 2017:** Grant on ‘The Development of Innovative Utilization Technology for Unused Thermal Energy’ of New Energy and Industrial Technology Development Organization of Japan.

**2013 – 2015:** Grant on ‘Development and Engineering Research in High Efficient Recovery and Utilization of Low and Medium Waste Heat in Metallurgical Industry’ of Japan Science and Technology Agency.

**2011 – 2015:** Grant on ‘The Development of Non-fluorinated Energy-saving Refrigeration and Air Conditioning Systems’ of New Energy and Industrial Technology Development Organization of Japan.

**2001 – 2003:** Grants-in-Aid for Scientific Research from Japan Society for the Promotion of Science

**1999 – 2000:** Grants-in-Aid from TEPCO Research Foundation

**1998:** Grants-in-Aid from Saneyoshi Memorial Foundation

**1997:** Grants-in-Aid from Harada Memorial Foundation

**1996:** Grants-in-Aid for Scientific Research by Japan Society for the Promotion of Science

**1995:** Grants-in-Aid from Harada Memorial Foundation

**1995:** Grants-in-Aid for Scientific Research by Japan Society for the Promotion of Science

**1995:**  Fellowship of Deutsche Akademishe Auschdienst (DAAD)

**1993 – 1994:**  Fellowship of the Ministry of Education I Japan

AWARDS

**2012:** Asian Academic Award (AAA)

The study of next generation heat pump system ‒ Thermophysical properties • Heat transfer • Cycle ‒

**1997:** Excellence in presentation of a paper in the Poster Session in The Poster Session,

The 10th International Symposium on Transport Phenomena (ISTP-10)

**1984:** Excellent student from Japan Society of Mechanical Engineering

LIST OF PUBLICATIONS

a) Peer Reviewed Journals (2000 – To Date)

1. Salsuwanda Selamat, Akio Miyara, Keishi Kariya,   
   Numerical study of horizontal ground heat exchangers for design optimization,   
   Renewable Energy, Vol.95, pp.561-573 (2016)
2. Salsuwanda Selamat, Akio Miyara and Keishi Kariya,  
   Considerations for Horizontal Ground Heat Exchanger Loops Operation,   
   Trans. JSRAE，Vol.32, No.3, pp.345-351 (2015)
3. Jalaluddin, Akio Miyara,   
   Thermal performance and pressure drop of spiral-tube ground heat exchangers for ground-source heat pump,  
   Applied Thermal Engineering, Vol.90,pp.630-637(2015)
4. Salsuwanda Selamat, Akio Miyara and Keishi Kariya  
   Analysis of Short Time Period of Operation of Horizontal Ground Heat Exchangers  
   Resources, Vol.4, pp.507-523(2015)
5. Azridjal Aziz and Akio Miyara  
   Visualization the Distribution of Air-Water Mixtures Flow in Two Outlet Distributor  
   Journal of Applied Science and Engineering,Vol.18,No.1,pp.33-40(2015)
6. Jalaluddin, Akio Miyara  
   Performance investigation of multiple-tube ground heat exchangers for ground-source heat pump  
   American Journal of Energy Engineering, Vol.2, No.5,pp.103-107(2014)
7. Ryo Akasaka, Yukihiro Higashi, Akio Miyara, Shigeru Koyama  
   A fundamental equation of state for cis-1,3,3,3-tetrafluoropropene(R-1234ze(Z))  
   International Journal of Refrigeration, Vol.44, pp.168-176 (2014)
8. Md.Anowar Hossain, Yoji Onaka, Hasan M.M. Afroz, Akio Miyara  
   Heat transfer during evaporation of R1234ze(E),R32,R410A and a mixture of R1234ze(E) and R32 inside a horizontal smooth tube,  
   International Journal of Refrigeration, Vol.36,Issue 2, pp.465-477 (2013)
9. Muh. Anis Mustaghfirin, Akio Miyara and Hirata Yuki,  
   Mal-Uniformity of Two-Phase Flow Distribution in Merged Pipe Distributor under Different Outlet Channel Length,  
   Journal of Mechanics Engineering and Automation, Vol.3, No.2, pp.107-120(2013)
10. Md.Anowar Hossain, Yoji Onaka, Akio Miyara,   
    Experimental study on condensation heat transfer and pressure drop in horizontal smooth tube for R1234ze(E),R32 and R410A,  
    International Journal of Refrigeration, Vol.35,Issue 4, pp.927-938 (2012)
11. Akio Miyara, Yoji Onaka, Shigeru Koyama,  
    Ways of next generation refrigerants and heat pump/refrigeration systems,  
    International Journal of Air-Conditioning and Refrigeration, Vol.20, Issue1 (2012)
12. Mohammad Ariful Islam, Akio Miyara,  
    Numerical Investigation of Flow behavior and Heat Transfer Characteristics inside Herringbone Microfin Tube,  
    International Journal of Engineering Research and Applications, Vol.2, Issue2, pp.1006-1009 (2012)
13. Azridjal, Aziz, Akio Miyara, Fumiaki Sugino,  
    Distribution of two-phase flow in a distributor,  
    Journal of Engineering Science and Technology, Vol.7, No.1, pp.41-55, (2012)
14. Koutaro Tsubaki, Ryoichi Ikeda, Akio Miyara,  
    Effects of Nozzle Outlet Cross-Section Area on Transcritical CO2 Two-Phase Ejector Cycle,   
    Trans. JSRAE, Vol.28, No.4, pp.517-528, (2011) (in Japanese).
15. Yoji Onaka, Md. Anowar Hossain, Akio Miyara,   
    Heat Transfer and Pressure Drop of R1234ze(E) and R32 during Condensation and Evaporation in Horizontal Smooth Tube,   
    Trans. JSRAE, Vol.28, No.4, pp.445-456, (2011) (in Japanese)
16. Akio Miyara, Ryota Fukuda, Koutaro Tsubaki,   
    Thermal conductivity of saturated liquid of R1234ze(E)+R32 and R1234yf+R32 mixtures,   
    Trans. JSRAE, Vol.28, No.4, pp.435-443, (2011) (in Japanese)
17. Hasan M.M. Afroz Akio Miyara,  
    Prediction of condensation pressure drop inside herringbone microfin tubes,   
    International Journal of Refrigeration, Vol.34 , No.4 ,pp.1057-1065 , (2011)
18. Jalaluddin, Akio Miyara, Koutaro Tsubaki, Shuntaro Inoue, Kentaro Yoshida,  
    Experimental study of several types of ground heat exchanger using a steel pile foundation,  
    Renewable Energy, Vol.36, No.2,pp.764-771, (2011)
19. Hasan M.M. Afroz, Akio Miyara,  
    Binary mixture of carbon dioxide and dimethyl ether as alternative refrigerants and their vapor-liquid equilibrium data prediction,  
    International Journal of Engineering,Science and Technology, Vol.3, No.1,pp.10-21, (2011)
20. Yoji Onaka, Akio Miyara, Koutaro Tsubaki,  
    Experimental study on evaporation heat transfer of CO2/DME mixture refrigerant in a horizontal smooth tube,  
    International Journal of Refrigeration, Vol.33, No.7,pp.1277-1291, (2010)
21. Yoshimi Matsuo, Koutaro Tsubaki, Akio Miyara,  
    Effect of fin-collar shape at contact area between tube and fin on heat exchanger performance,   
    Trans. JSRAE, Vol.27, No.2, pp.129-137, (2010) (in Japanese)
22. Mohammad Ariful Islam, Akio Miyara, Toshiaki Setoguchi,  
    Numerical investigation of steam absorption in falling film of LiBr aqueous solution with solitary waves,  
    International Journal of Refrigeration, Vol.32, No.7,pp.1597-1630, (2009)
23. Yoji Onaka, Akio Miyara, Koutaro Tsubaki,  
    Performance Analysis of heat pump cycle using CO2/DME refrigerant mixture,   
    Trans. JSRAE, Vol.26, No.3, pp.245-252, (2009) (in Japanese).
24. B. Kundu, A. Miyara,  
    An analytical method for determination of the performance of a fin assembly under dehumidifying conditions: A comparative study,  
    International Journal of Refrigeration, Vol.32, No.2, pp.369-380, (2009)
25. Hasan M.M. Afroz, Akio Miyara,Koutaro Tsubaki,  
    Heat transfer coefficients and pressure drops during in-tubecondensation of CO2/DME mixture refrigerant,  
    International Journal of Refrigeration, Vol.31, No.8,pp.1458-1466, (2008)
26. Akio Miyara,  
    Condensation of hydrocarbons － A review,  
    International Journal of Refrigeration, Vol.31, No.4, pp.621-631, (2008)
27. Koutaro Tsubaki, Akio Miyara, Yuma Nagai, Naoe Sasaki, Yoshihiko Mizuta,  
    The Effects of Fin Collar Form on Heat Transfer Performance of Cross Fin-tube Heat Exchanger,   
    Trans. JSRAE, Vol.24, No.4, pp.423-430, (2007) (in Japanese).
28. Mohammad Ariful Islam , Akio Miyara,   
    Liquid film and droplet flow behaviour and heat transfer characteristics of herringbone microfin tubes,   
    International Journal of Refrigeration, Vol.30, No.8,pp.1408-1416, (2007).
29. Hasan M.M. Afroz, Akio Miyara,   
    Friction factor correlation and pressure loss of single-phase floｗ inside herringbone microfin tubes,   
    International Journal of Refrigeration, Vol.30, No.7,pp.1187-1194, (2007).
30. Mohammad Ariful Islam, Akio Miyara,Takehiro Nosoko,Toshiaki Setoguchi,  
    Numerical Investigation of Kinetic Energy and Surface Energy of Wavy Falling Liquid Film,   
    Journal of Thermal Science,Vol.16,No.3,pp.237-242(2007)
31. T. Nosoko, A. Miyara,   
    The evolution and subsequent dynamics of waves on a vertically falling liquid film,   
    Physics of Fluid, Vol.16 No.4, pp.1118-1126, (2004).
32. Akio Miyara, Mohammad Ariful Islam, Yoshihiko Mizuta and Atsushi Kibe,   
    Experimental Observation of two phase flow of R123 inside a herringbone microfin tube,   
    Journal of Thermal Science, Vol.12 No.3, pp.270-274, (2003).
33. Akio Miyara, Tomoki Yamamoto, Toru Iemura, Takashi Shimada,   
    Gas absorption by wavy falling liquid film formed on inner surface of vertical tubes,   
    Journal of Thermal Science, Vol.12 No.1, pp.57-61, (2003).
34. Akio Miyara, Yusuke Otsubo, Satoshi Ohtsuka and Yoshihiko Mizuta,   
    Effects of fin shape on condensation in herringbone microfin tubes,   
    International Journal of Refrigeration, Vol.26, pp.417-424, (2003)
35. Akio Miyara and Yusuke Otsubo,   
    Condensation heat transfer of herringbone micro fin tubes,   
    International Journal of Thermal Sciences, Vol.41 No.7, pp.639-645, (2002).
36. Takehiro Nosoko, Akio Miyara,   
    Characteristics of falling film flow on completely-wetted horizontal tubes and the associated gas absorption,   
    International Journal of Heat and Mass Transfer, Vol.45 No.13, pp.2729-2738, (2002).
37. Akio Miyara, Yusuke Otsubo, Satoshi Ohtsuka,  
    Effects of Fin Shape on Condensation Heat Transfer and Pressure Drop inside Herringbone Micro Fin Tubes,   
    Trans. JSRAE, Vol.18, No.4, pp.463-472, (2001) (in Japanese).
38. Akio Miyara,   
    Flow Dynamics and Heat Transfer of Wavy Condensate Film,   
    Transactions of the ASME Journal of Heat Transfer, Vol.123, No.3, pp.492-500, (2001).
39. Akio Miyara,   
    A Numerical Scheme for the Simulation of Interfacial Waves on a Falling Liquid Film,   
    International Journal of Transport Phenomena, Vol.2, pp.241-252, (2001).
40. Akio Miyara,   
    Numerical simulation of wavy liquid film flowing down on a vertical wall and an inclined wall,   
    International Journal of Thermal Sciences, Vol.39, pp.1015-1027, (2000).
41. Akio Miyara,   
    Numerical Analysis on Heat Transfer Enhancement by Waves on Falling Liquid Film,   
    Journal of Thermal Sciences, Vol.9 No.3, pp.236-242, (2000).
42. Akio Miyara,   
    Numerical Analysis for a Falling Liquid Film with Interfacial Waves on an Inclined Plate. Part2: Effects of Interfacial Waves on Flow Dynamics and Heat Transfer,   
    Heat Transfer – Asian Research, Vol.29 No.3, pp.233-248. (2000).
43. Akio Miyara,   
    Numerical Analysis for Flow Dynamics and Heat Transfer of Wavy Condensate Film,   
    Trans. JSME (B), Vol.66 No.642, pp.482489, (2000) (in Japanese).
44. Akio Miyara, Kengo Nonaka, Mitsunori Taniguchi,   
    Condensation Heat Transfer and Flow Pattern inside a Herringbone-Type Micro-Fin Tube,   
    International Journal of Refrigeration, Vol.23 No.2, pp.141-152, (2000).

Total 66 peer reviewed papers. (from 1987 to date)

b) Invited Presentations & Keynote Lectures

1. Akio Miyara,   
   Measurements of transport properties and heat transfer coefficients for low GWP refrigerants,   
   ERAC2014 (2014).
2. A. Miyara, K. Tsubaki, N. Sato, R. Fukuda,   
   Thermal Conductivity of Saturated Liquid of HFO-1234ze(E) and HFO-1234ze(E)+HFC-32 Mixture,   
   The 23rd IIR International Congress of Refrigeration, Prague, Czech Republic, ID:900 (2011)
3. Akio Miyara, Yoji Onaka, and Shigeru Koyama,   
   Ways of Next Generation Refrigerants and Heat Pump/Refrigeration Systems,   
   Proceedings of International Conference on Air-Conditioning & Refrigeration, Yongpyong Resort, Gangwon-Do, KOREA, pp.70-75(2011).
4. Akio Miyara,   
   Search for Next Generation Refrigerants and Heat Pump/Refrigeration Cycle,   
   International Conference on Mechanical, Industrial and Energy Engineering 2010, Khulna, BANGLADESH, No.MIE10-KN2, pp.1-9 (2010).
5. Akio Miyara,   
   Effects of Surface Wave on Absorption into Falling Liquid Film,   
   Thermally Powered Sorption Technology, Proceedings of the International Seminar on Thermally Powered Sorption Technology, Fukuoka, Japan, pp.55-65 (2003.12).
6. Akio Miyara,   
   Numerical Simulations of Heat and Mass Transfer of Wavy Falling Films,   
   Fortschritt-Betrichte VDI, Reihe 3, Nr.817, 2nd International Berlin Workshop on Transport Phenomena With Moving Boundaries, Berlin, Germany, pp.81-94 (2003).

c) International Conference Proceedings

1. M. Mostaqur Rahman, Keishi Kariya and Akio Miyara, AN EXPERIMENTAL STUDY OF HEAT TRANSFER DURING CONDENSATION OF REFRIGERANT R134a INSIDE HORIZONTAL MULTIPORT MINICHANNEL,   
   Proceedings of the 8th ACRA, May 15–17, 2016, Taipei, TAIWAN, 075（2016,5）
2. Md. Hasan Ali, Salsuwanda SELAMAT , Akio MIYARA and Keishi KARIYA, PERFORMANCE ANALYSIS OF SLINKY LOOP HORIZONTAL GROUND HEAT EXCHANGERS,   
   Proceedings of the 8th ACRA, May 15–17, 2016, Taipei, TAIWAN, 070（2016,5）
3. Akitoshi KAWAZOE, Keishi KARIYA, Akio MIYARA,   
   MEASUREMENTS OF LOCAL HEAT TRANSFER COEFFICIENT DURING CONDENSATION AND EVAPORATION IN PLATE HEAT EXCHANGER,   
   The 24th IIR International Congress of Refrigeration,ICR2015,ID:847(2015,8)
4. Mohammad Sultan MAHMUD, Akitoshi KAWAZOE, Muh. Anis MUSTAGHFIRIN, Keishi KARIYA, Akio MIYARA,   
   FLOW CHARACTERISTICS OF AIR-WATER TWO PHASE FLOW IN A PLATE HEAT EXCHANGER,   
   The 24th IIR International Congress of Refrigeration,ICR2015,ID:687(2015,8)
5. Salsuwanda SELAMAT , Akio MIYARA , Keishi KARIYA,   
   COMPARISON OF HEAT EXCHANGE RATES BETWEEN STRAIGHT AND SLINKY HORIZONTAL GROUND HEAT EXCHANGER,   
   The 24th IIR International Congress of Refrigeration,ICR2015,ID:676(2015,8)
6. Keishi KARIYA, Soichiro MORI, Akio MIYARA,   
   VISCOSITY MEASUREMENT OF LOW GWP REFRIGERANTS WITH A TANDEM CAPILLARY TUBES METHOD,   
   The 24th IIR International Congress of Refrigeration,ICR2015,ID:684(2015,8)
7. Akio Miyara,   
   Measurements of transport properties and heat transfer coefficients for low GWP refrigerants,   
   ERAC2014 (2014).
8. A. Miyara, K. Tsubaki, N. Sato, R. Fukuda,   
   Thermal Conductivity of Saturated Liquid of HFO-1234ze(E) and HFO-1234ze(E)+HFC-32 Mixture,   
   The 23rd IIR International Congress of Refrigeration, Prague, Czech Republic, ID:900 (2011)

Total 80 papers in various International conferences.

d) Japanese Conference Proceedings

Total 134 papers in various Japanese local conferences.