

Natarajan (Rajan) Rajendran

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Highlights

- One of the leading experts on the use of alternate refrigerants in air conditioning, heat pumps, and refrigeration systems in the U.S., Europe, and Asia.
- Research, product development, program management and customer service expertise
- ESG & Innovation leadership, facilitation skills to bring global teams together and accomplish enterprise wide objectives
- Strong public speaking skills, teaching and mentoring skills (undergraduate and graduate levels)

Accomplishments and Awards

- Authored papers, published, and presented in various conferences:
 - Atmosphere America
 - Air-Conditioning, Heating and Refrigeration Institute (AHRI)
 - American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
 - Food and Marketing Institute's Energy and Store Development Conference
 - International Institute of Ammonia Refrigeration (IIR)
 - International Institute of Refrigeration (IIR)
 - Purdue University Compressor Conference
- Ten patents in the areas of compressors, electronics and systems in HVACR
- Air-Conditioning Heating and Refrigeration Institute (AHRI) Richard C. Schulze award for Distinguished Service to the Industry, 2014
- Recognized as one of ACHR magazine THE NEWS' 2012 NEWSMakers

Experience

GLOBAL VICE PRESIDENT, ENVIRONMENTAL SUSTAINABILITY | COPELAND | 7/14 TO PRESENT

- **Past Director of the Helix Innovation Center on the University of Dayton campus (7/14 - 7/21)**
- Global sustainability, policy and regulatory lead; member/chair of the Govt Affairs Committee of AHRI
- Vice-chair of the Systems Steering Committee of AHRI
- Co-chair of the Global Food Cold Chain Council
- Member of the board of Alliance for Responsible Atmospheric Policy
- Past Chair of the Refrigeration Committee at ASHRAE
- Past Member of Technology Council at ASHRAE
- Member, Food & Marketing Institute (FMI) Retail & Supplier Council
- Chapter lead and member of United Nations Environment Programme (UNEP) Refrigerant Technical Options Committee
- Advisory board member at three U.S. universities - University of Dayton, Ohio Northern University, Washington University
- Board member of the Dayton Area Chamber of Commerce

VICE PRESIDENT, ENGINEERING SERVICES AND SUSTAINABILITY | EMERSON | 10/11 - 7/14

- Led a team of technical and commercial (sales) personnel to grow end-use sales in the cold chain for Emerson
- Laid the groundwork for Emerson's sustainability leadership position in the industry through various programs, the most notable being the "Emerson's E-360"

DIRECTOR (ENGINEERING; SERVICES; APPLICATIONS) | EMERSON | 10/98 - 10/11

- Led teams that developed and released for production various new products - cryogenic scrolls, horizontal scroll for rail A/C, aluminized scroll for marine applications, open drive scroll for truck refrigeration, vapor injected scroll, digital modulated scroll for A/C and refrigeration, electronic controls for compressor monitoring and operation

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LARGE PROGRAM LEADER – GLOBAL ENGINEERING | EMERSON | 7/01 TO 9/04

- Led teams to establish global engineering design and development capability for Emerson Climate Technologies in India and China (both centers now over 2000 engineers strong with test lab capability) and a service team in Manila, Philippines that is also now a 1000+ strong service center for Emerson

SR. ENGINEER/MANAGER | EMERSON | 7/90 TO 10/98

- Conducted components and systems research and product development, both mechanical and electronics

Selected Patents

- Ice Machine Including Vapor-Compression System, VO Bahel, N Rajendran, KJ Knapke - US Patent App. 16/686,759, 2020
- Compressor control system, H Millet, N Rajendran, W McCroskey - US Patent App. 10/769,704, 2004
- Compressor vibration protection system, H Millet, N Rajendran, W McCroskey - US Patent App. 10/769,707, 2004
- Compressor configuration system and method, H Millet, N Rajendran, W McCroskey - US Patent App. 10/769,706, 2004
- Compressor communication and control system, H Millet, N Rajendran, W McCroskey - US Patent App. 10/769,703, 2004
- Horizontal scroll compressor N Rajendran, DH Cabe, J Prenger, D Noffsinger - US Patent 6,264,446, 2001
- Compressor with control and protection system, HE Millet, N Rajendran, WW McCroskey - US Patent 6,302,654, 2001
- Open drive scroll machine, JP Elson, N Rajendran, TA DeVore - US Patent 6,129,531, 2000
- Refrigeration control using fluctuating superheat, N Rajendran - US Patent 5,771,703, 1998
- Refrigeration control using fluctuating superheat, N Rajendran - US Patent 5,502,970, 1996

Selected Presentations and Publications

- Regulatory/Policy Side of Refrigerant Transitions, Rajan Rajendran, Ph.D., Associate Member, Emerson Climate Technologies, Inc., Dayton, OH, ASHRAE Seminar Recordings, 2019 Annual Conference, Atlanta, GA
- Steady-State Modeling of Condensing Units with an Economizer Loop, Haithem Murgham, David Myszka, Vijay Bahel, Nathan Burns, Kyaw Wynn, Mike Saunders, Rajan Rajendran, 2018 International Refrigeration and Air Conditioning Conference
- Simulation Model of an Automatic Commercial Ice Machine, Haithem Murgham, David Myszka, Vijay Bahel, Rajan Rajendran, Kurt Knapke, et al., 2016 International Refrigeration and Air Conditioning Conference
- “Refrigerant and Regulatory Developments: Changes Impacting the Opportunities for Natural Refrigerants” presented at the 2015 IIR Industrial Refrigeration Conference & Exhibition by Rajan Rajendran, Ph.D
- Presenter at Food Marketing Institute’s Energy & Store Development Conference, September 9, 2013, session aimed to help the supermarket and food service industries select appropriate choices among “greener” alternatives.
- Potential Impact of An HFC Phase-Down On the HVAC&R Industry, Rajan Rajendran, Ph.D., Emerson Climate Technologies, Inc., ASHRAE Seminar Recording, 2012 Annual Conference, San Antonio, TX
- Lower-GWP Refrigerants in Refrigeration, Hung Pham, Member ASHRAE; Rajan Rajendran, PhD, Member ASHRAE Conference Proceeding, 2012
- Presenter at Carrier’s 11th Global Engineering Conference, March 18-20, 2012 in Las Vegas on the topic “20/20 the Future in Focus: Rethink. Restore. Regenerate.”
- R32 And HFOs As Low-GWP Refrigerants For Air Conditioning, Hung M. Pham, Rajan Rajendran, 2012 International Refrigeration and Air Conditioning Conference

Education

M.B.A. | 1997 | WRIGHT STATE UNIVERSITY

- Major: Finance

PH.D. | 1990 | IOWA STATE UNIVERSITY

- Major: Mechanical Engineering (Thermal Fluid Sciences)

M.S | 1985 | IOWA STATE UNIVERSITY

- Major: Mechanical Engineering (Thermal Fluid Sciences)

B.E. | 1982 | UNIVERSITY OF MADRAS, INDIA

- Major: Mechanical Engineering