

ASHRAE NEWSLETTER

DECEMBER
2024

A Message from your SWFL ASHRAE President

CASEY A. Hazen

Greetings SWFL Chapter,

As the year winds down, I want to take a moment to thank each of you for making our chapter a vibrant and impactful part of the HVAC community. Your energy, commitment, and enthusiasm make our organization not just great, but downright fun!

First, let's give a big round of applause to our generous sponsors. Your support fuels our events, education, and outreach, and we couldn't do it without you. From all of us, thank you!

You might notice something a little different about this December newsletter—our new and improved format! We hope it's as easy to navigate as it is exciting to read.

Speaking of events, a huge thank-you goes out to everyone who joined us on December 4th for the refrigeration tour at FGCU. What a fantastic turnout! Whether you came for the cool insights, the networking, or just the barbecue (no judgment here!), we appreciate you showing up and making it memorable.

Now, let's talk January. Mark your calendars for Wednesday, January 8th—our first dinner meeting of 2025! Join us from 5:30 to 8:00 PM for a presentation by the esteemed Mike Wolfe, P.E., from Greenheck. It's an excellent opportunity to learn, connect, and enjoy a great evening with your fellow members.

Finally, I want to thank you, our amazing chapter members. It's your involvement that makes this organization not just a professional group but a community. Together, we're learning, growing, and having a lot of fun doing it.

Wishing you all a joyful holiday season and an even brighter New Year. See you in 2025!

Cheers,

Casey Allen Hazen, BSME
SWFL Chapter President 2024-2025



CARBON DIOXIDE FOR INDUSTRIAL REFRIGERATION

Refrigeration Chair - Kevin Jewell

The increasing demand for efficient cooling technologies has led researchers to explore two-stage vapor compression refrigeration systems (TSVCRS) as an alternative to single-stage systems in high-pressure ratio scenarios where single-stage systems face challenges such as high compressor work, low volumetric efficiency and elevated discharge temperature, particularly for low-temperature applications (see <https://tinyurl.com/JournalExtras>). To investigate the performance of the TSVCRS, an experimental test facility was designed. The test facility allows the system to operate in both two-stage vapor compression mode and single-stage vapor compression mode by manipulating manual shut-off valves. The performance of the system is examined under the different condenser water temperatures supplied to the condenser.

Authors: Vaibhav Jain, Ph.D.; Kanchan Mudgil, Ph.D.; Sonal Khurana, Ph.D.; Anuradha Parinam, Ph.D.; Gulshan Sachdeva, Ph.D.; Aditya Kumar; Kamran Ali

Citation: ASHRAE Journal, Vol. 66, no. 11, November 2024

Pages: 7

Publish Date: November 2024

Publisher: ASHRAE

MONTHLY MEETINGS

- **JANUARY 8TH: DINNER**
- **FEBRUARY 12TH: LUNCH**
- **MARCH 12TH: DINNER**
- **APRIL 9TH: DINNER**
- **MAY 14TH: DINNER**

2024-2025 SPONSORSHIPS OPPORTUNITIES

Research Promotion Chair - Gary DeVore

Diamond Sponsorship:

Trane Technologies

GOLD SPONSORSHIP:

Tom Barrow Company (TBCo), Commercial Air Management (CAM), B&I Contractors, Manhattan Construction, Gilbane Building Company, Thermal Concepts

Silver Sponsorship:

Diversified Fluid Controls, Integrated Cooling Solutions

BRONZE SPONSORSHIP:

Victaulic, Johnson Controls International (JCI), George A. Israel Jr. Inc.

I would like to thank those of you who have already committed to sponsorships for the 24-25 society year.

We would encourage anyone who values their membership in SWFL ASHRAE to review the many benefits of sponsorship detailed in the annual sponsorship letter attached at the end of this newsletter.

If you'd like to either join our 24-25 sponsors or have already agreed to be a 24-25 sponsor and do not see your name listed above, please reach out.

gdevore@bandiflorida.com / (239) 671-6448

Thank you, we appreciate your continued support.

GOVERNMENT AFFAIRS

Government Affairs Chair - Trevor Cltek

FEDERAL GOVERNMENT AFFAIRS

EPA Updates Ventilation and Respiratory Viruses Guidance, References ASHRAE Standard 241

The U.S. Environmental Protection Agency (EPA) shared updated guidance on how to most effectively use ventilation to prevent the spread of common respiratory viruses in homes, schools, offices, and commercial buildings. It highlights ventilation as a key measure to combat the spread of viruses including COVID-19, influenza, and respiratory syncytial virus (RSV) which can spread easily indoors. For schools, offices, and commercial buildings, EPA encourages professionals to consult ASHRAE guidance and consider the specific characteristics of their building. The guidance “reflects the latest science on indoor air quality” and includes a link to ASHRAE Standard 241, Control of Infectious Aerosols. Read the guidance [here](#) and accompanying press release [here](#).

GLOBAL GOVERNMENT AFFAIRS

UN Climate Change Conference COP-29 Begins November 11

COP-29, also known as the United Nations Climate Change Conference, will be held from November 11th to November 22nd. The meeting will take place in Baku, the capital of Azerbaijan. The annual conference started in 1994 and has been a decades-long effort to spur action on climate change. The parties to the conference have explicit aims developed by the Paris Climate Accords and the Kyoto Climate Protocol, where developed economies are expected to lead the way and fund the process of climate mitigation. ASHRAE Presidential Member Jim Wolf will be present on a panel as part of the [America Is All In Pavilion](#) on Friday November 15, which you can watch on a

IT'S (NOT) ROCKET SCIENCE: DEMYSTIFYING DESICCANT DEHUMIDIFICATION

YEA Chair – Justin Fales

Some believe desiccant dehumidification is too complex and confusing to understand or that it is inefficient, overly expensive and should only be applied in extreme cases where there is no alternative. This article hopes to put those misconceptions to rest. In fact, desiccant dehumidification is an energy-efficient, sustainable and cost-effective solution for almost any environment requiring moisture removal. When properly applied, desiccant dehumidification can be a thermodynamically eloquent option.

ASHRAE has defined dehumidification as the removal of water vapor from air, gases or other fluids. For this article, we will explore the dehumidification of ambient air. This process applies whether the air is coming from indoors (recirculated), outdoors (ventilation) or any combination of both. The goal is to regulate indoor built environments to specific relative humidity levels or dew-point temperatures. Taken one step further, dehumidification is about the removal and subsequent transfer of moisture from where it is considered objectionable (usually indoors) to where it is not (usually outdoors).

Desiccant dehumidifiers are used to remove moisture from the air to create and sustain comfortable, healthy, productive indoor environments. They function by removing water from the air in its molecular state, using the vapor pressure differences between the air and the desiccant surface to first attract (adsorb or absorb) and then release (desorb) moisture. A desiccant is a hygroscopic material defined as a substance that has a high affinity for moisture. There are two categories of desiccants commonly used in HVAC systems today.

Adsorbents (Ad). These are traditionally used in the commercial HVAC marketplace. They are typically solid substances that can withstand being saturated with water molecules and avoid changing into a liquid form. Silica gel is a common material used for removing moisture from the air, and its high hydrogen bonding capabilities make it an ideal desiccant. It is economically priced, commercially available, chemically inert, odorless, nontoxic and noncorrosive.

Viewing silica gel through a microscope would reveal a massive internal network of passages and crevices. It is this structural porosity that allows it to adsorb and hold large quantities of moisture. In fact, silica gel can retain up to 40% of its mass in water.

Absorbents (Ab). These are (or can change into) a liquid form if saturated with water. They are applied to industrial processes where increased capacity may be required. Lithium chloride (salt water) is a typical example. Liquid desiccants may also be corrosive.

Authors: David Schurk

Citation: ASHRAE Journal, Vol. 66, no. 11, November 2024

Pages: 5

Publish Date: November 2024

Publisher: ASHRAE

November ASHRAE Meeting



Thank you to our 2024-2025
Annual Sponsors!

2024-2025 Diamond Sponsor

TRANE
TECHNOLOGIES

2024-2025 Gold Sponsors



Manhattan
Building excellence.



2024-2025 Silver Sponsors



2024-2025 Bronze Sponsors



THANK YOU FOR YOUR SUPPORT!



From: ASHRAE Southwest Florida Chapter

Subject: ASHRAE Southwest Florida Sponsorship Opportunities for 2024-2025

The ASHRAE Southwest Florida Chapter RP fund-raising events are excellent sponsorship opportunities. Your company reaches many key decision makers and sends a strong message of supporting the research that the community relies upon for comfort and sustainability.

The Southwest Florida Chapter is continuing to make sponsorships even easier by offering levels that include the promotion of your company at all chapter events! If you are unable to contribute at one of these levels, sponsorship opportunities for the Golf and Fishing tournaments will be offered separately before each event!

Go To: <https://www.swflashrae.org/sponsorship> for an on-line payment option!

Annual Sponsorship Levels

Gold Level - \$3,500 (Savings: \$885)

- Golf Tournament: Gold Sponsorship Package (Value: \$2,385)
 - (8) Player Entries, (1) Tee Sponsorship, (1) Flag Sponsorship, (8) Mulligans, (1) Arm Length Raffle, (8) Putting Contest Entries
- Fishing Tournament: Gold Sponsorship Package (Value: \$850)
 - (4) Entries, Company Logo on Shirt, and special recognition
- Tech Topic Presentation (Value: \$250)
- (4) YEA Cornhole Tournament Entries (Value: \$100)
- (10) Monthly Meeting Tickets (Value: \$350)
- (1) Meeting Sponsorships (Value: \$250)
- Signage at each monthly meeting (Value: \$100)
- Logo on Monthly Newsletter (Value: \$100)

Silver Level - \$1,500 (Savings: \$615)

- Golf Tournament: Silver Sponsorship Package (Value: \$1,265)
 - (4) Player Entries, (1) Tee Sponsorship, (4) Mulligans, (1) Arm Length Raffle, (4) Putting Contest Entries
- Fishing Tournament: Silver Sponsorship Package (Value: \$425)
 - (2) Entries, Company Logo on Shirt
- (2) YEA Cornhole Tournament Entries (Value: \$50)
- (5) Monthly Meeting Tickets (Value: \$175)
- Signage at each monthly meeting (Value: \$100)
- Logo on Monthly Newsletter (Value: \$100)

Bronze Level - \$1,000 (Savings: \$350*)

- Golf Tournament: Tee Sponsorship (Value: \$500)
- Fishing Tournament: Bronze Sponsorship Package (Value: \$625*)
 - (1) Entry, Company Logo on Shirt
- (1) YEA Cornhole Tournament Entry (Value: \$25)
- (2) Entries in either Golf or Fishing Tournaments (Value: \$250)
- Signage at each monthly meeting (Value: \$100)
- Logo on Monthly Newsletter (Value: \$100)

Portion of Proceeds to Benefit ASHRAE Research and the SWFL ASHRAE Chapter Endowment Fund
SWFL ASHRAE is a 501©(3) not for profit organization



ASHRAE Membership

ashrae.org/benefits

Five Benefit Options Available.



Full Members and Associates can now select **1** of the following options:

<p>eLearning Course</p>  <p>150+ to choose from</p>	<p>ASHRAE Standard or Guideline</p>  <p>100+ to choose from</p>	<p>ASHRAE Handbook</p>  <p>PDF version of the most recent</p>	<p>Handbook Online</p>  <p>4 most recent</p>	<p>ASHRAE Certification Exam Study Guide</p>  <p>3 to choose from</p>
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First Year New Members automatically get:

<p>1 Free Registration</p>  <p>to Winter or Annual Conference</p>	<p>12 Months FREE</p>  <p>Handbook Online</p>
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Additional Member Benefits

<p>12 month subscription to ASHRAE Journal</p> 	<p>25% discount On 400 publications in the Bookstore</p> 
<p>2000+ free resources for members in the ASHRAE Technology Portal</p>	

50,000+
Members



190+ Chapters **16** Regions across the world



STEM@Work

SCIENCE . TECHNOLOGY . ENGINEERING . MATH
<http://www.leeschoolfoundation.org>

Scheduled Technical Tours at B&I Office:

- Wednesday, November 13th
(10am-12pm) - School TBD
- Wednesday, December 4th
(10am-12pm) - School TBD
- Wednesday, January 22nd
(10am-12pm) - School TBD
- Wednesday, February 12th
(10am-12pm) - School TBD
- Potential for One Additional Stem@Work





Message from the Foundation

Since 1986 the mission of the Foundation has been to enhance the quality of public education in Lee County by increasing community involvement in, and support for, Lee County Public Schools. A diverse group of local business and community leaders realized that the cornerstone of an economically strong community was a quality public education system.

The purpose of every initiative of The Foundation for Lee County Public Schools is to enhance and enrich the quality of public education in Lee County for students and educators. View our various programs to learn more about our students' unique learning opportunities and how teachers themselves are recognized and encouraged in their dedicated efforts.

Stem@Work

Our focus on STEM began with the notion that students need more opportunities in the areas of Science, Technology, Engineering, and Math related fields. The National Science Foundation estimates that 80% of the jobs created in the next decade will require some form of math and science skills.

Our STEM Initiatives are a collaboration between the Foundation and the School District of Lee County. Funded through the generosity of our business partners, this initiative offers students the opportunity to participate in field trips and internships, as well as experience hands-on activities through partnerships with businesses in the community. Check out more information at: <https://leeschoolfoundation.org/>



Student Advocacy & Mentoring Partnership (STAMP)

Realizing the great impact that mentors have on students, the Foundation has implemented the Student Advocacy & Mentoring Partnership (STAMP). STAMP is a program that offers students the opportunity to achieve success by providing them college and career planning resources and volunteer mentors to give students assistance, guidance, motivation and accountability to work hard and to ensure they graduate from high school to continue their education either through technical training or earning a college degree. It is a multi-year commitment for at-risk high school students to invest in their future and increase the high school graduation rate and post-secondary educational opportunities.

The STAMP program strives to accommodate eligible students, match them with mentors, and assist them in acquiring scholarships to cover the cost of attending college or other post-secondary training. Students and their families, mentors, school coordinators, and Foundation staff all work together through the STAMP program and are instrumental in helping students pursue their post-high school education and career goals. Students will also be able to attend STEM@work events to learn about local businesses.



Apply to STAMP

