Curriculum Vitae

Nabil Nassif, Ph.D. P.E.
Associate Professor,
Department of Civil and Architectural Engineering and Construction Management
University of Cincinnati
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Area of Specialization

- Building mechanical systems and refrigeration systems
- Modeling, analysis, optimization and control of HVAC Systems
- Sustainable built environment, artificial intelligence applications and smart capabilities in building energy systems,
- Energy efficiency and technologies in buildings
- Fault detection and diagnosis of cooling and heating energy systems
- Continuous and retro-commissioning of HVAC systems
- Heat-mass transport and energy systems

Education:

- **Post-doctoral fellow (2006-2007)** Department of Mechanical Engineering, University of Nevada Las Vegas, NV, USA.
- **Post-doctoral fellow (2005-2006)** Department of Building, Civil & Environmental Engineering, Concordia University, Montreal, Quebec, Canada.
- **Ph.D. (2001-2005)** Mechanical Engineering, Quebec University, École de technologie supérieure, Montréal, Québec, Canada.
- **M.S.(1997-2000)** Mechanical Engineering, Damascus University, Syria
- **Diploma of Advanced Studies (1996-1997)** Mechanical Engineering, Damascus University, Syria
- **B.S.(1986-1991)** Mechanical Engineering, Damascus University, Syria

Employment History

- **Associate Professor (07/2016-Present)**: Department of Civil, Architectural, and Environmental Engineering, North Carolina A&T State University
- **Assistant professor (08/2010-07/2016)**: Department of Civil, Architectural, and Environmental Engineering, North Carolina A&T State University
- **Visiting Research Faculty (06/2014-09/2014):** Oak Ridge National Lab ORNL, TN
- **Research Faculty (08/2009-08/2010)**: Florida Solar Energy Center FSEC, a research institute of the University of Central Florida
- **Director of Engineering (11/2007-08/2009)**: Building Energy Solutions & Technology, Inc. San Jose, California, USA
  Postdoctoral Research Fellow (07/2006-11/2007): Department of Mechanical Engineering, University of Nevada Las Vegas

Postdoctoral Research Fellow (07/2005-07/2006): Department of Building, Civil & Environmental Engineering, Concordia University, Montreal, Quebec, Canada
Research Assistant (08/2001-05/2005): École de technologie supérieure, Montréal, Québec, Canada.

Awards:

- **Postdoctoral Fellowship (7/2005 – 6/2007**), Fonds québécois de la recherche sur la nature et les technologies, Montréal, Québec, Canada. (This award is based on the highest level of achievement)
- **Research Award (9/2001 – 5/2005)**, École de technologie supérieure, Montréal, Québec, Canada
- **Graduate student award (1/2002 – 12/2004)**, École de technologie supérieure, Montréal, Québec, Canada
- **Graduate student award (9/1997–5/2000)**, , Damascus University

Funded Research Projects

- Development of the BEMS (Building Energy Management System) Software Based on the Korean Standard, Korea Agency for Infrastructure Technology Advancement, University of Gachon University, Seongnamsi, Korea . (PI) $101,000
- Engineering Modeling and Computational Research, NSF (co PI) $420,000
- Integrated Variable Air Volume and Terminal VAV Box Control with BACnet DDC, Matlab-Based Monitoring, and Simulation Systems, ASHRAE (PI) $4,800
- Developing an Assessment, Control, and Optimization Tool for HVAC Systems. National Institute of Standards and Technology NIST, 2014-2017. (PI) $253,480.
- A Comprehensive Energy Assessment for the Michelin Building#30, Michelin Americas Research Company, 2015-2016, $5,289
- Investment Grade Energy Audit for 17 Buildings. NCAT Facility Department, North Carolina State Energy office, 2013-2016. (PI) $151,275.
- Center for Energy Research and Technology. North Carolina Department of Environment and Natural Resources (NCDENR), 3013-2015 (Co.PI) $ 408,636
- Effects of Air Filter Cleanliness in Typical HVAC Systems. ASHRAE (PI). $1200.
- Center for Energy Research and Technology. North Carolina Department of Commerce (NCDOC), 3011-2013 (Co.PI) $ 316,242
- Energy Audit and Energy Efficiency Implementation for the City of Satellite Beach, City of Satellite Beach 2010-2011 (PI) $33,322
- Impact of Supply Airflow Rates on the Performance of a Typical HVAC System. ASHRAE (PI). $2000.
- City of Altamonte Springs Solar Feasibility Study and Energy Assessment. City of Altamonte Springs (CO. PI) $34,000
- City of Satellite Beach Energy Assessment. City of Satellite Beach (CO. PI) $17,000
- Impacts of Varying Filter Pressure Drop on Energy Consumption in Typical AC Systems in Residential and Small Commercial Buildings, Etatech Inc. (PI) $18,500

Publications:

Refereed Journal (+ ASHRAE Transactions)

[1]. Arida, M., N **Nassif**, R., Talib and T., Abu-Lebdeh (2017). Building Energy Modeling Using Artificial Neural Networks. Energy Research Journal, Volume 7, Issue 2, Pages 24-34. DOI: 10.3844/erjsp.2016.24.34
[2]. **Nassif**, N. and Gooden, J. (2017). Development and Validation of a Heat Pump System Model Using Artificial Neural Network. Advances in Science, Technology and Engineering Systems Journal Vol. 2, No. 3, 182-185.
[3]. **Nassif**, N. and AlRaees, N. (2017). Optimizing the Design of Chilled Water Plants for Commercial Building Energy Systems. ASHRAE Transactions, Volume 123 (2).
[4]. **Nassif**, N, J. Buford, T. Abu-Lebdeh. (2017). Developing and Testing Dynamic Models for HVAC Systems Using System Identification Approach. American Journal of Engineering and Applied Sciences, Volume 10 (1): 192-199. DOI :10.3844/ajeassp.2017.192.199.
[5]. **Nassif**, N., M. Arida, and R. Talib. (2016). Development and Testing of Building Energy Model Using Non-Linear Auto Regression Neural Networks. 2016 ASHRAE Meeting, St Louis, MO.
[6]. Buford J. N. **Nassif**. (2016). The Dynamic Modeling of Chilled Water HVAC Systems Using System Identification Methods. 2016 ASHRAE Meeting, St Louis, MO.
[7]. **Nassif**, N., K. Rice, B. Shen (2015). Development of a Matlab-Based Integrated Model for Optimal Design and Operation of Heat Pumps. 2015 ASHRAE Annual Conference, Atlanta, GA
[8]. Gooden, J., N. **Nassif**, (2015). Modeling and Validation of a DX Heat Pump System Using Artificial Neural Network. 2015 ASHRAE Annual Conference, Atlanta, GA
[9]. **Nassif**, N., R. Tesiero, and N. AlRaees (2014). A new air conditioning system fan model based on numerical analysis. American Journal of Engineering and Applied Sciences 7(1): 32-40.
[10]. Tesiero, R., N. **Nassif**, H. Singh, and K. M. Flurchick (2014). Low-cost strategies to save energy in k-12 schools. American Journal of Engineering and Applied Sciences 7(1): 41-53.
[11]. AlRaees, N., N. **Nassif**, and F. Al Rifaie (2014). The effect of ventilation and economizer on energy consumptions for air source heat pumps in schools. American Journal of Engineering and Applied Sciences 7(1): 54-61.
[12]. **Nassif**, **N.,** and N. Al Raees. (2014). Energy Analysis of CO_2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools. ASHRAE Transactions 120 (1).
[13]. Tesiero, R. **N. Nassif**, H. Singh. (2014). Low-Tech/No-Cost" Control Strategies to Save Energy in K-12 Schools, ASHRAE Transactions 120(1).
[14]. **Nassif**, **N.,** C. Halls, and D., Freeland. (2014) Optimal Design and Control of Ice Thermal Storage System for a Typical Chilled Water Plant, ASHRAE Transactions 120(1).
[15]. Lin, Y., **N. Nassif**, and M. Liu, (2014). Implementation of Energy Efficiency Measures in a Semiconductor Building, Journal of Energy Engineering 111 (4), 34-58 (Association of Energy Engineers (AEE).
[16]. Choi. W., **N. Nassif**, and S.-H. Oh (2014) Comparison of Temperature Susceptibility for Three Types of Outdoor Farrowing Huts. Applied Engineering in Agriculture 30(2):241-247.

[17]. **Nassif, N**. (2014). Modeling and Optimization of HVAC Systems Using Artificial Neural Network and Genetic Algorithm. International Journal of Building Simulation 7 (3):237-245.

[18]. **Nassif, N.**, R. Tesiero, and N. Al Raees. (2013). Energy Performance Analysis of Ice Thermal Storage for Commercial HVAC Systems. Journal of Energy and Power Engineering 7: 1713-1718

[19]. **Nassif, N**. (2013). Single and Multivariate Regression Models for Estimating Monthly Energy Consumptions in Schools in Hot and Humid Climates. Energy Engineering 110 (5), 33-54.

[20]. **Nassif, N**, R.C. Tesiero, and H. Singh. (2013). Impact of Ice Thermal Storage on Cooling Energy Cost for Commercial HVAC Systems. ASHRAE Transactions 119(1)

[21]. **Nassif, N**, R.C. Tesiero, and H. Singh. (2013). Developing and Validation of HVAC System Fan Model Based on Numerical Analysis. ASHRAE Transactions 119(1)

[22]. **Nassif, N**. (2012). The Impacts of Air Filters on the Performance of Typical Air-Conditioning Systems. International Journal of Building Simulation 5(4): 345-350.

[23]. **Nassif, N**. (2012). A robust CO_2-based demand-controlled ventilation control strategy for multi-zone HVAC systems. Elsevier, Energy and Buildings 45:72-81.

[24]. **Nassif, N**. (2012). Modeling and Optimization of HVAC Systems Using Artificial Intelligence Approaches. ASHRAE Transactions 118 (2), 133.

[25]. **Nassif, N**. (2012). Impacts of Air Filters on Energy Consumption in Typical HVAC Systems. ASHRAE Transactions 118 (2), 74.

[26]. **Nassif, N**. (2012). Supply Air CO_2-Based Demand-Controlled Ventilation for Multi-Zone HVAC Systems. ASHRAE Transactions 118 (2), 300.

[27]. **Nassif, N**. (2012). Regression Models for Estimating Monthly Energy Consumptions in Schools in Hot and Humid Climate. ASHRAE Transactions 118 (1), 225.

[28]. **Nassif, N**. and S. Moujaes (2011). Improved Delta-Q Measurement Technique for Estimating the Total and Local Leakages in Residential Buildings. *International Journal of Energy Engineering 137(2): 76-87*

[29]. **Nassif, N**. (2010). Performance Analysis of Supply and Return Fans for HVAC Systems under Different Operating Strategies of Economizer Dampers. Elsevier, International Journal of Energy and Buildings 42: 1026–1037

[30]. **Nassif, N**. and S. Moujaes (2009). Measurement Techniques for Estimating Local and Total Duct Leakages in Residential Buildings. *ASCE, International Journal of Energy Engineering 134 (1): 3-11*

[31]. **Nassif, N**. and S. Moujaes (2008). A Cost-Effective Operating Strategy to Reduce Energy Consumption in a HVAC system. Wiley, *International Journal of Energy Research* 32 (6): 543 - 558

[32]. **Nassif, N**. and S. Moujaes (2008). A New Operating Strategy for Economizer Dampers of VAV System. Elsevier, International Journal of Energy and Buildings 40 (3): 289-299

[33]. **Nassif, N**., S. Moujaes, and M. Zaheeruddin (2008). Self-Tuning Dynamic Models of HVAC System Components. *Energy and Buildings 40 (2008):* 1709–1720

[34]. **Nassif, N**. and S. Moujaes (2008). Developing and validation of a new measurement technique for estimating the local and total leakage in typical residential buildings. *ASCE, International Journal of Energy Engineering 134(3): 87-94*

[35]. **Nassif, N.** and M. Zaheeruddin (2007). Simulated Performance Analysis of a Multi-Zone VAV System under Different Ventilation Control Strategies. ASHRAE Transactions 113 (1): 617-629.

[36]. **Nassif, N.,** Kajl, S., Sabourin, R. (2005) Ventilation Control Strategy Using Supply CO_2 Concentration Set Point. ASHRAE, *International Journal of HVAC&R Research* 11 (2): 239-262.

[37]. **Nassif**, N., S. Kajl, and R. Sabourin. (2005) Optimization of HVAC Control System Strategy Using Two-objective Genetic Algorithm. ASHRAE, *International journal of HVAC&R Research* 11 (3): 459-486.

[38]. **Nassif, N.**, S. Kajl, and R. Sabourin. (2004) Two-Objective On-Line Optimization of Supervisory Control Strategy. *International Journal of Building Services Engineering Research and Technology* 25(3): 241-251.

Proceedings

[1]. R. Tesiero, N. Nassif, B. Gokaraju. (2017). Intelligent Approaches for Modeling and Optimizing HVAC Systems' Energy Use ASME 2017 11th International Conference on Energy Sustainability ES2017 June 26-30, 2017, Charlotte, North Carolina, USA

[2]. Ours, A. **Nassif**, N, D. Long. (2016). Forecasting Savings of Building Energy Systems using Artificial Neural Networks. FTC 2016 - Future Technologies Conference 6-7 December 2016 | San Francisco, United States

[3]. Long, D., **Nassif**, N, A. Ours. (2016). Prediction of Energy Consumption in Buildings by System Identification. FTC 2016 - Future Technologies Conference 6-7 December 2016 | San Francisco, United States

[4]. **Nassif**, N. (2015). Building Energy Modeling Using Non-Linear Auto Regression Neural Networks. Submitted to The 2015 International Conference on Artificial Intelligence, July 27-30, 2015, Las Vegas, USA

[5]. **Nassif, N.**, and Al Raees, (2013) The Impact of CO2-Based Demand-Controlled Ventilation on Energy Consumptions for Air Source Heat Pumps in Schools. The 13th annual International Conference for Enhanced Building Operations (ICEBO), 8 – 11th October- 2013 Montréal, Canada

[6]. **Nassif, N.,** C. Halls, and D., Freeland. (2013) Optimization of Ice Thermal Storage System Design for HVAC systems. The 13th annual International Conference for Enhanced Building Operations (ICEBO), 8 – 11th October- 2013 Montréal, Canada

[7]. Nguyen, T., and **Nassif, N**. (2013) Optimization of HVAC System Using Genetic Algorithm. National Conference on Advances in Environmental Science & Technology, 12-13 September, Greensboro, NC., USA.

[8]. Hall, C., D., Freeland, and **Nassif, N**. (2013) Optimization of Ice Thermal Storage System Design and Operation for HVAC Systems. National Conference on Advances in Environmental Science & Technology, 12-13 September, Greensboro, NC., USA.

[9]. AlRaee, N. and **Nassif, N**. (2013) The Effect of Ventilation Control Strategy and Economizer on Energy Consumptions for Air Source Heat Pumps in Schools. National

Conference on Advances in Environmental Science & Technology, 12-13 September, Greensboro, NC., USA.

[10]. Freeland, D., C. Hall, and **Nassif, N**. (2013) Optimizing the Design of Chilled Water Plants in Large Commercial Buildings. National Conference on Advances in Environmental Science & Technology, 12-13 September, Greensboro, NC., USA.

[11]. Tesiero, R., and **Nassif, N**. (2013) Artificial Intelligent Approaches for Modeling and Optimizing HVAC Systems. National Conference on Advances in Environmental Science & Technology, 12-13 September, Greensboro, NC., USA.

[12]. **Nassif, N**. (2012). Modeling and Optimization of Building Energy Systems Using Artificial Intelligence Approaches. 13th Annual Science & Engineering Technology Conference / Defense Tech Exposition, April 17-19, 2012, North Charleston, SC., USA.

[13]. **Nassif, N**. (2011). CO_2-Based Demand-Controlled Ventilation Control Strategies for Multi-Zone HVAC Systems. The 11th International Conference for Enhanced Building Operations, October 18-20, 2011, New York City N.

[14]. **Nassif, N**. (2011). Models for Estimating Monthly Energy Consumptions in Schools. The Second International Conference on Green and Sustainable Technology, Nov. 18-19, 2011, Proximity Hotel, Greensboro, NC

[15]. **Nassif, N**. (2010). Modeling of HVAC system Components Using Artificial Neural Networks. The First International Conference on Green and Sustainable Technology, Nov. 18-19, 2010, Proximity Hotel, Greensboro, NC

[16]. Moujaes, S. and **N. Nassif**. (2009). Field Measurements of a New Duct leakage Method in Residential Homes in Las Vegas. 5th International Workshop on Energy and Environment of Residential Buildings, China.

[17]. **Nassif, N**. and S. Moujaes (2008). Field Testing and Verification of a Technique for Measuring the Local and Total Air Duct Leakage in Residential Buildings. Indoor Air Conference, Copenhagen, paper ID 648, 8 pages.

[18]. **Nassif, N**. and R. Zmeureanu. (2006). Dynamic Data-Driven Gray-Box Models of HVAC System Components. Canadian conference on building energy simulation, eSim2006, Toronto, 118-125.

[19]. **Nassif, N**., S. Kajl, R. Sabourin. (2005). ASHRAE Standard's 62 Multiple Spaces Equation for Design and Control. The 10th International Conference on Indoor Air Quality and Climate, Indoor Air Quality 2005, Beijing.

[20]. **Nassif, N**., S. Kajl, R. Sabourin. (2005). Simplified Model-Based Optimal Control of VAV air-Conditioning System. The Ninth International Building Performance Simulation Association IBPSA, Montréal, 823-830.

[21]. **Nassif, N**., S. Kajl. R. Sabourin. (2005). Optimal Operation of VAV Air-Conditioning System. The XI International Conference of Air Conditioning, air Protection & District Heating. Poland.

[22]. **Nassif, N.**, Kajl, S., Sabourin, R. (2004) Modeling and Validation of Existing VAV System Components. Canadian conference on building energy simulation, eSim2004, Vancouver, 135-141.

[23]. **Nassif, N**., Kajl, S., Sabourin, R. (2004) Evolutionary Algorithms for Multi-Objective Optimization in HVAC System Control Strategy. North American Fuzzy Information Processing Society NAFIPs, Alberta, 51-56.

[24]. **Nassif, N**., S. Kajl, R. Sabourin. (2003) Two-Objective On-Line Optimization of Supervisory Control Strategy. Eight International Building Performance Simulation Association IBPSA, Eindhoven, 927-934.

[25]. Kajl, S. **Nassif, N**, Daigle, M. (2003) Monitoring: un outil d'optimisation de l'opération des systèmes CVCA. 1st International Conference on Sustainable Energy and Green Architecture, Bangkok, GA 65-72.

[26]. **Nassif, N**., S. Kajl, R. Sabourin. (2003) Modélisation des composants d'un système CVCA existant. VI Colloque interuniversitaire franco-québécois, Québec, 5 pages, article 12-01.

Conference and Invited Presentations

[1]. **Nassif, N. (2016).** Energy Efficiency in Buildings. Department of Architectural Engineering, Gashon University, Seoul, Korea, October 2016.

[2]. **Nassif, N. (2015)**. An integrated Approach for Building Energy System using Computational Intelligence. Invited Speaker. ASHRAE North Piedmont Chapter Meeting.

[3]. **Nassif, N. (2015)**. Energy Efficiency in Buildings, Mechanical Systems and Controls Group, Engineering Laboratory, National Institute of Standards and Technology NIST, April 15, 2015, Gaithersburg, MD.

[4]. **Nassif, N. (2015).** Optimization-based retro-commissioning procedure for large commercial buildings. Department of Architectural Engineering, Gashon University, Seoul, Korea, May 2015.

[5]. **Nassif, N**, D., Freeland, C. Halls. (2014). Optimizing the Design of Chilled Water Plants ,2014 Winter ASHRAE Meeting, NY.

[6]. **Nassif, N**, N., Al Raees (2014). Energy Analysis of CO2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools, 2014 Winter ASHRAE Meeting, NY.

[7]. Tesiero, R. **N. Nassif**, H. Singh. (2014). Low-Tech/No-Cost" Control Strategies to Save Energy in K-12 Schools, 2014 Winter ASHRAE Meeting, NY, accepted

[8]. Freeland D., **Nassif, N**, (2013) Optimizing the Design of Chilled Water Plants in Large Commercial Buildings, North Piedmont Local Chapter ASHRAE Meeting, NC

[9]. AlRaees N., **Nassif, N**, (2013) Energy Analysis of CO2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools, North Piedmont Local Chapter ASHRAE Meeting, NC

[10]. **Nassif, N.(** 2013). Energy Efficiency in Buildings: Modeling and Optimization of Building Energy Systems Using Artificial Neural Network and Genetic Algorithm, Invited Speaker, Spring 2013 Graduate Student Seminar, Water Resources and Environmental Engineering program, Department of Civil, Construction, and Environmental Engineering, NCSU. (http://www.ce.ncsu.edu/research/wree/WREEseminars.html)

[11]. **Nassif, N** and R.C. Tesiero. (2013). Impact of Ice Thermal Storage on Cooling Energy Cost for Commercial HVAC Systems. 2013 Winter ASHRAE Meeting, Dallas, TX.

[12]. **Nassif, N** and R.C. Tesiero. (2013). Developing and Validation of HVAC System Fan Model Based on Numerical Analysis. 2013 Winter ASHRAE Meeting, Dallas, TX.

[13]. **Nassif, N**. (2012). Modeling and Optimization of HVAC Systems Using Artificial Intelligence Approaches. 2012 ASHRAE Meeting, San Antonio, TX.

[14]. **Nassif, N**. (2012). Impacts of Air Filters on Energy Consumption in Typical HVAC Systems. 2012 ASHRAE Meeting, San Antonio, TX.

[15]. **Nassif, N**. (2012). Supply Air CO_2-Based Demand-Controlled Ventilation for Multi-Zone HVAC Systems. 2012 ASHRAE Meeting, San Antonio, TX.

[16]. **Nassif, N**. (2012). Regression Models for Estimating Monthly Energy Consumptions in Schools in Hot and Humid Climate. 2012 Winter ASHRAE Meeting, Chicago, IL.

[17]. **Nassif, N.** and S**.** Moujaes (2007)**.** Duct Leakage Assessment in Residential/Commercial Duct Construction and its Effect on Overall Thermal Performance of the HVAC System. Presented at The 2007 Market Transformation Seminar An NCEMBT Interactive Seminar March 20-21, 2007

[18]. **Nassif, N.** and S**.** Moujaes (2007)**.** Field Measurement and Verification Of Residential Duct Leakage Method for Percent Leak Determination Developed At UNLV**.** Presented at The 2007 Market Transformation Seminar An NCEMBT Interactive Seminar March 20-21, 2007

[19]. **Nassif, N.** and S**.** Moujaes (2007)**.** Developing and validation of a new measurement technique for estimating the local and total air duct leakage in typical residential buildings. Poster presented at The 2007 Inaugural Energy Symposium, University of Nevada Las Vegas UNLV, August 15-17, 2007. (**Best poster**)

[20]. **Nassif, N.** and S**.** Moujaes (2007)**.** A new measurement technique for estimating the local and total air duct leakage in typical residential buildings. Presentation made to Nevada Power and Southwest Gas, Las Vegas, August 7, 2007.

[21]. **Nassif, N.** and M. Zaheeruddin (2007). Simulated Performance Analysis of a Multi-Zone VAV System under Different Ventilation Control Strategies. ASHRAE Meeting, Dallas 2007.

[22]. **Nassif, N.**, S. Kajl, and R. Sabourin. (2006) Optimization of HVAC Control System Strategy Using Two-objective Genetic Algorithm. ASHRAE meeting, Denver 2006

Posters

[1]. Bryant Baugh, Andray Reynolds, **Nassif N** (2017). 2016 ASHRAE Student Design Project Competition: HVAC Design Calculations. 2017 ASHRAE Annual Meeting, Las Vegas. (Third Place)

[2]. Brandy Diggs, Dana Ruth, Phillip Jackson, **Nassif N** (2016). 2015 ASHRAE Student Design Project Competition: HVAC Design Calculations. 2017 ASHRAE Annual Meeting, Orlando. (Rising Start)

[3]. M. Arida, **N. Nassif** (2016). Development and Testing of Building Energy Model Using Non-Linear Auto Regression Neural Networks. 5st Annual COE Graduate Student Research Poster

[4]. R. Talib, **N. Nassif** (2016). Prediction and Optimization of Chilled Water Cooling Coil Performance Using Artificial Neural Network Model. 5st Annual COE Graduate Student Research Poster

[5]. J.Buford, **N. Nassif** (2016). The Dynamic Modeling of a Chilled Water Air Handling Unit using System Identification Methods. 5st Annual COE Graduate Student Research Poster

[6]. J.Buford, **N. Nassif** (2016). The Dynamic Modeling of a Chilled Water Air Handling Unit using System Identification Methods. 5st Annual COE Graduate Student Research Poster

[7]. R. Isiah. **N. Nassif** (2016). Development of a On-Line Self-learning Grey Box-based DX Heat Pump System Model. 5st Annual COE Graduate Student Research Poster

[8]. N. Raees. **N. Nassif** (2016). Design of chilled water central planet for large commercial buildings using multi-objective genetic algorithm. 5st Annual COE Graduate Student Research Poster

[9]. F. Alrifaee. **N. Nassif** (2016). An Integrated Approach Using Computational Intelligence for Ice Thermal Storage. 5st Annual COE Graduate Student Research Poster

[10]. Buford J., J. Gooden, **Nassif N,** and Keith, R. (2014). Development of a MATLAB compatible HPDM & Fan Performance program. Oak Ridge National Laboratory, August 7, 2014. Oak Ridge, TN.

[11]. Buford J., J. Gooden, **Nassif N,** and Keith, R. (2014). Development of a MATLAB compatible HPDM & Fan Performance program. Oak Ridge National Laboratory, August 7, 2014. Oak Ridge, TN.

[12]. Al Raees, N., **N. Nassif** (2013). Energy Analysis of CO2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[13]. Gooden, J. and N., **N. Nassif** (2013). T.E Neal Potential Energy Savings Analysis. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[14]. AlRifaie, F., **N. Nassif** (2013). The effect of Airflow Rate on energy consumption and thermal comfort in Schools. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[15]. P. Guadal, and **N. Nassif** (2013). The effect of SEER on Energy Use in Houses. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[16]. William H. and **N. Nassif** (2013). Energy Analysis for different types of HVAC systems. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[17]. Allen T. and **N. Nassif** (2013). Effect of Day Lighting Control on Annual Energy Consumption for Schools. 2014 Mid-Year Energy Summit. February 25th, Greensboro, NC.

[18]. Al Raees, N., **N. Nassif** (2013). Energy Analysis of CO2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools. 2013 Appalachian Energy Summit. July 17-19th, Boone, NC.

[19]. D. Freeland, **N. Nassif** (2013). Optimizing the Design of Chilled Water Plants. 2st Annual COE Graduate Student Research Poster

[20]. C. Halls, **N. Nassif** (2013). Optimizing Ice Thermal Storage to Reduce Energy Cost. 2st Annual COE Graduate Student Research Poster

[21]. Al Raees, N, N. Nassif (2013). Energy Analysis of CO2-Based Demand Controlled Ventilation and Economizer for Air Source Heat Pump in Schools. 2st Annual COE Graduate Student Research Poster

[22]. R. Tesiero. **N. Nassif** (2012). Applications of Computational Intelligence in HVAC system. 1st Annual COE Graduate Student Research Poster

[23]. T. Nguyen. **N. Nassif** (2012). Optimization of VAV system. 1st Annual COE Graduate Student Research Poster

[24]. N. Al Raees, **N. Nassif** (2012). Development of Ventilation Control Strategy in Schools. 1st Annual COE Graduate Student Research Poster

[25]. R. Tesiero. **N. Nassif** (2012). Applications of Computational Intelligence in HVAC systems. 3st Conference on Green and Sustainable Technology Poster

[26]. F. Al Rifaie. **N. Nassif** (2012). Impacts of Seasonal Energy Efficiency Ratio SEER on Energy Consumption for Typical Heat Pumps. 3st Conference on Green and Sustainable Technology Poster

[27]. D. Freenland, **N. Nassif** (2012). Measurement and Verification in Buildings in Different Locations. 3st Conference on Green and Sustainable Technology Poster

[28]. L. Dubois, W. Brittinie, and **N. Nassif** (2012). Financial Benefits with Utilization of Variable Speed Drives. 3st Conference on Green and Sustainable Technology Poster

[29]. T. Williams, **N. Nassif** (2012). Effects of Air Filter Cleanliness in Typical HVAC Systems. 3st Conference on Green and Sustainable Technology Poster

[30]. T. Allen, **N. Nassif** (2012). Advocating Daylighting Systems Obstacle or Opportunity. 3st Conference on Green and Sustainable Technology Poster

[31]. B. Richard, **N. Nassif** (2012). Energy Consumption Assessment for Schools in the U.S. 3st Conference on Green and Sustainable Technology Poster

[32]. M. Lipscomb, **N. Nassif** (2012). Energy Efficiency Measures and Optimization of Williams Cafeteria at NC A&T SU. 3st Conference on Green and Sustainable Technology Poster

[33]. S. Whiteside, **N. Nassif** (2012). Impact of Ice Thermal Storage on Cooling Energy Cost for Commercial HVAC Systems. 3st Conference on Green and Sustainable Technology Poster

[34]. E. Morales-Pérez, **N. Nassif** (2012). Energy Consumption Due to Variable Air-Flow. 3st Conference on Green and Sustainable Technology Poster

[35]. D Freeland, L. DuBois, B. Williams, **N. Nassif** (2012), Analysis and Development of Energy Saving Techniques in United States Schools. Undergraduate Research Day Poster, Research Week 2012, NCAT

[36]. J. Tunstall, T. Weston, **N. Nassif** (2012), Air Cooled vs. Water Cooled Chillers within the 7 ASHRAE Climate Zones. Undergraduate Research Day Poster, Research Week 2012, NCAT

[37]. T. Williams, R. Bradley, **N. Nassif** (2012), Energy Consumption Analysis of West Wilkes Middle School. Undergraduate Research Day Poster, Research Week 2012, NCAT

Reports

[1]. Sobers A., Cooper, A., H. Williamson, **N. Nassif** (2014) Impact of Supply Airflow Rates on the Performance of a Typical HVAC System, final report submitted to ASHRAE, 2014 Senior Design Project

[2]. T. Williams, E. Morales-Perez, **N. Nassif** (2013) Effects of Air Filter Cleanliness in Typical HVAC Systems, final report submitted to ASHRAE, 2013 Senior Design Project

[3]. **Nassif, N.**, James B. Cummings and Houtan Moaveni (2010). Energy Assessments for the City of Altamonte Springs. Final report. Florida Solar Energy Center.

[4]. **Nassif, N.** (2010). Impacts of varying filter pressure drop on energy consumption in typical AC systems in residential and small commercial buildings: Part-1 high efficiency variable speed system. Final report. Florida Solar Energy Center FSEC-PR-10-071.

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[11]. **Nassif, N**. (2002). Studies on the Performance of Elitist Non-Dominated Sorting Genetic Algorithm. Final Report, SYS-843, École de technologie supérieure, Montréal, Québec, Canada.

Courses taught:

Undergraduate:

HVAC Design and Plumbing System AREN 498
Heating Ventilating and Air Conditioning System MEEN 463
HVAC Principles and Systems, AREN364
HVAC Systems Laboratory AREN363
Numerical Methods and MATLAB CAEE230
Senior Project II Construction Documents AREN 486 (AREN586)
Senior Project I Design Development AREN485
Fundamentals of Illumination and Electrical Power AREN 448
Illuminating Engineering Lab AREN 444,
Engineering Fluids and Hydraulics CAAE 362,

Graduate:

Master Thesis CIEN797
Advanced Energy Conservation System CIEN 739
Advanced HVAC Design, CIEN786
Energy Management Planning CIEN 738
Special Projects, CIEN699

Graduate students advised:

[1]. **Ph.D. Student,** Raymond C. Tesiery, Application of Computational Intelligence to HVAC System, **North Carolina A&T State University**, Fall 2014
[2]. **Ph.D. Student.** Nihal AlRaees, Development of Optimal Design and Operation Tool for Central Plants**, North Carolina A&T State University**, Fall 2016
[3]. **Ph.D. Student.** Foad Al Rifaie**,** An Integrated Approach Using Computational Intelligence to Optimal Design and Operate Ice Thermal Storages for typical HVAC Systems**, North Carolina A&T State University**, Spring 2017
[4]. **Ph.D. Student.** Maya Arida, Optimal Design and Operation Tool for Water Source Heat Pumps, **North Carolina A&T State University,** In progress
[5]. **Ph.D. Student.** Rand Talib, Using Statistical Machine Learning for Fault and Diagnosis in HVAC Systems**, North Carolina A&T State University,** In progress
[6]. **MS Student.** Tony Nguyen, Optimization of HVAC System Using Genetic Algorithm**, North Carolina A&T State University,** Spring 2014
[7]. **MS Student.** Nihal AlRaees, the Effect of Ventilation Control Strategy and Economizer on Energy Consumptions for Air Source Heat Pumps in Schools**, North Carolina A&T State University,** Fall 2013
[8]. **MS Student.** Dante Freeland, Optimizing the Design of Chilled Water Plants in Large Commercial Buildings**, North Carolina A&T State University,** Fall 2013
[9]. **MS Student.** Christopher Hall, Optimization of Ice Thermal Storage System Design for HVAC Systems**, North Carolina A&T State University,** Spring 2014
[10]. **MS Student.** Foad Al Rifaie, Impact of Supply Airflow Rates on the Performance of a Typical HVAC System**, North Carolina A&T State University**, Spring 2014
[11]. **MS Student.** Jordan Gooden, Development and Validation of a New Heat Pump Model Using ANN**, North Carolina A&T State University,** Spring 2015
[12]. **MS Student.** Halley Williamson, Cost Effective Energy Solutions for HVAC systems in schools**, North Carolina A&T State University,** Fall 2015
[13]. **MS Student.** Jasmine Buford, System Identification Based Method for Modelling Chilled Water Cooling Coils**, North Carolina A&T State University,** Spring 2016
[14]. **Master Student.** Maya Arida, Building Energy Modeling Using Artificial Neural Network **, North Carolina A&T State University,** Fall 2016
[15]. **Master Student.** Rand Talib, Development and Validation of a Cooling Coil Model Using Artificial Neural Network**, North Carolina A&T State University,** Fall 2016
[16]. **Master Student.** Jamie Hayes, Energy Analysis of Various Design Elements**, North Carolina A&T State University,** Spring 2017

Examination committee and co advisor:

[1]. **Ph.D. Student.** Ahoo Malekafzali Ardakan, Multi-Zone Elechtrochromic Glass Integrated with Light Shelf, College of Design, **NC State University,** (Co Chair)

[2]. **Ph.D. student**, Nooshafarin Mohammadzadeh, Thermal Analysis of Courtyard Buildings (with energy potential of roof system approach), College of design, **NC State University**

[3]. **Ph.D. student**, Yao Yu, Development, Application, and Improvement of the Zonal Modeling Approach POMA, **North Carolina A&T State University**., April, 2014

[4]. **MS Student**, Amadou M Bocoum, Study the High Temperature Performance of Bio Modified Rubber asphalt (BMR), **North Carolina A&T State University**, June 13, 2014

[5]. **MS Student**, Ashraf Fadiel, Use of Crumb Rubber to Improve Thermal Efficiency of Construction Materials, **North Carolina A&T State University**, April, 2013

[6]. **MS Student**, Satya Kiran, A Numerical Prediction of Thermal Environment in a Room Heated with a Hydronic Heater, University of Nevada Las Vegas UNLV, August 3, 2007

[7]. **MS Student**, Dhandapani Selvaraj, Local leakage Measurement and CFD Analysis of Deformed Ducts in Residential HVAC Ducts, **University of Nevada Las Vegas UNLV**, July 27, 2007

[8]. **MS Student**, Radhika Gundavelli, Local leakage Estimation and CFD Prediction of k-Factors of Leaks in Residential HVAC Ducts, **University of Nevada Las Vegas UNLV**, May 04 2007

Professional Societies and Services

- ASHRAE Student Branch Advisor
- Engineers Without Borders Advisor (2015-2016)
- Member, NCAT Energy Management and Sustainability Committee
- Member, Energy Advisory Committee, Guilford County Schools, North Carolina
- Faculty member, Center for Energy Research and Technology CERT, North Carolina A&T State University.
- Member, HVAC System and Lighting Committee, Department of Civil, Architectural, and Environmental Engineering, North Carolina A&T State University
- Member, Research Computing Committee, College of Engineering, North Carolina A&T State University.
- Member, Organizing Committee, The Second International Conference on Green and Sustainable Technology, Nov. 18-19, 2011, Proximity Hotel, Greensboro, NC and the First International Conference on Green and Sustainable Technology, 2010
- Member, ASHRAE, TG1.Optimization
- Reviewing many papers for several International Journals, e.g. HVAC&R research (ASHRAE), Energy Engineering ASCE (American Society of Civil Engineering), Energy and Buildings (Elsevier) and Building and Environment (Elsevier)
- Associate Member, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).
- Member, International Building Performance Simulation Association, Canadian branch, (IBPSA-Canada)
- Professional Engineer (Mechanical), California, USA, License # 35181
- Member, Graduate student committee, University of Nevada Las Vegas UNLV, 2007-2009