Guide to the Student Poster Show
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High Performance Buildings

1. Dynamic Modeling, Control, and Optimization of Micro-CHP Systems
   PhD Student: Trevor Bird, Professor Neera Jain

2. Impact of Occupants' Behavior on Office Energy Use
   PhD Student: Zhipeng Deng, Professor Qingyan Chen

3. Load-Based Testing to Characterize the Performance of Variable Speed Equipment
   PhD Student: Parveen Dhillon, Professor James Braun

4. Eco-Feedback and Incentive Mechanism Design for Multi-Residential Building
   PhD Student: Huijeong Kim, Professor Panagiota Karava

5. Demonstration of a Self-Tuned HVAC System
   PhD Student: Seungjae Lee, Professor Thanos Tzempelikos

6. Detecting the Identifiable Characteristics of the Buildings for Automated Post-Event Reconnaissance
   PhD Student: Ali Lenjani, Professor Shirley J. Dyke

7. Automated Image Localization for Post-Event Building Assessment
   PhD Student: Xiaoyu Liu, Professor Shirley J. Dyke

8. The DC Micro-Grid House
   PhD Student: Jonathan Ore, Professor Eckhard A. Groll

9. Identifying Peer Groups in a Multifamily Residential Building for Eco-Feedback Design
   PhD Student: Sang woo Ham, Professor Panagiota Karava

10. Investigating How Energy Use Patterns Shape Indoor Nanoaerosol Dynamics in a Net-Zero Energy House
    MS Student: Jinglin Jiang, Professor Brandon Boor

11. Innovative Design of Kitchen Range Hood
    PhD Student: Zechao Lu, Professor Jun Chen, Qingyan Chen
12. Urban Atmospheric Aerosol Size Distributions: A Global Perspective
PhD Student: Tianren Wu, Professor Brandon Boor

13. Thermal Comfort in a Room with Displacement Ventilation and Chilled Beams
PhD Student: Zhu Shi, Professor Qingyan Chen

PhD Student: Tianren Wu, Professor Brandon Boor

15. Dynamics of Fine and Ultrafine Particulate Matter in Biomass Burning Kitchens in Western Kenya
PhD Student: Danielle Wagner, Professor Brandon Boor

Heating, Ventilation, Air Conditioning and Refrigeration - HVAC&R

16. Vapor Compression Refrigeration for Cold Storage on Spacecrafts
PhD Student: Leon Brendel, Professor Eckhard A. Groll, James Braun

17. PIV Testing of a Residential Gas Furnace
PhD Student: Puyuan Wu, Professor Jun Chen

18. Cascade Transcritical Carbon Dioxide Refrigeration Cycle Utilizing Two-Phase Ejector
PhD Student: Riley Barta, Professor Eckhard A. Groll

19. The Chemical Looping Heat Pump
PhD Student: Nelson James, Professor James Braun, Eckhard A. Groll

20. CFD Analysis of PD Expanders
PhD Student: Saverio Randi, Professor Eckhard A. Groll

21. Oil Management in Tandem Compressors of Transport Refrigeration
PhD Student: Vatsal Shah, Professor James Braun, Eckhard A. Groll, Wm. Travis Horton
22. Oil Return and Retention in Unitary Split System Gas Lines
   PhD Student: Vatsal Shah, Professor James Braun, Eckhard A. Groll

23. Viper Expander Applied in R410A Residential Heat Pump
   MS Student: Lennart Stania, Professor Eckhard A. Groll

   MS Student: Xueyang Xu, Professor Eckhard A. Groll

25. Chemisorption Heat Pumping for Cold Climate
   PhD Student: Zhiyao Yang, Professor Ming Qu

26. An Experimental and Numerical Study on Dynamic Characteristics of Linear Compressors
   PhD Student: Xinye Zhang, Professor Eckhard A. Groll

27. Development of General Purpose Simulation Tools for Positive Displacement Compressors
   PhD Student: Xinye Zhang, Professor Eckhard A. Groll

28. Gas Pulsation Measurements in Positive Displacement Compressors
   MS Student: Cai Rohleder, Professor Eckhard A. Groll

29. Polymer Components in Hermetic Compressors
   PhD Student: David Halbrooks, Professor Eckhard A. Groll

30. Adhesive Bonding in HVAC&R Applications
   PhD Student: Haotian Liu, Professor Eckhard A. Groll

31. Combined Plant and Control Design for Thermal Management Systems
   PhD Student: Austin Nash, Professor Neera Jain

32. Inverter Drive Control for Fixed Speed Heat Pumps
   PhD Student: Nick Salts, Professor Eckhard A. Groll

33. Framework to Enable Impact-Based Innovation for Smart, Sustainable Buildings
   PhD Student: Domenique Lumpkin, Professor Wm. Travis Horton
Vibrations and Acoustics

34. Sound Quality Evaluation of Residential HVAC&R Equipment
   PhD Student: Weonchan Sung, Professor Patricia Davies

35. Traveling Thermoacoustic Waves in Solids
   PhD Student: Haitian Hao, Professor Fabio Semperlotti

36. Aerodynamic Analysis of a Bladeless Fan
   MS Student: Ang Li, Professor Jun Chen

37. Application of Acoustic Radiation Mode
   PhD Student: Jiawei Liu, Professor J. Stuart Bolton

38. Effects of Time-Varying Wind Conditions on Perception of Wind Noise in Vehicles
   PhD Student: Daniel Carr, Professor Patricia Davies

39. Dynamic Design of Bi-stable Oscillators with Synchronized Switching
   PhD Student: Janav Udani, Professor Andres F. Arrieta

40. Dynamics of an Array of Coupled, Mistuned Crystal Resonators
   PhD Student: Conor Pyles, Professor Jeffrey F. Rhoads

41. Diesel Engine Low-Load Fuel-Efficient Emissions Control
   PhD Student: Kalen Vos, Professor Gregory Shaver

42. Sound Source Identification with Compressive Sensing Method
   PhD Student: Tongyang Shi, Professor J. Stuart Bolton

43. Treatment of Enhancement Problem in Active Noise Control
   MS Student: Xuchen Wang, Professor J. Stuart Bolton

44. Four-Microphone Measurement of Transmission Loss of Automotive Door Seals: Improved Correction Factor
   MS Student: Weimin Thor, Professor J. Stuart Bolton

45. Tire Structure-Borne Noise Study using FE Simulation
   PhD Student: Rui Cao, Professor J. Stuart Bolton
46. **Numerical Integration Techniques for Outdoor Sound Prediction**
   PhD Student: Jianxiong Feng, Professor Kai Ming Li

47. **Doppler’s Shift on Aircraft Noise Prediction**
   PhD Student: Yiming Wang, Professor Kai Ming Li

**Robotics and Electromechanical Systems**

48. **Variable Valve Actuation For Improved Diesel Engine System Efficiency**
   PhD Student: Mrunal Joshi, Professor Gregory Shaver

49. **Harnessing Connectivity to Improve Efficiency of Class 8 Trucks**
   MS Student: Ifeoluwa Ibitayo, Professor Gregory Shaver

50. **Control Analysis for High BMEP Gasoline Engines**
   MS Student: Xu Zhang, Professor Gregory M. Shaver

51. **Multiscale Modelling of Triboelectric Energy Harvesters**
   PhD Student: Hongcheng Tao, Professor James Gibert

52. **Automatic Image Segmentation for Deep-Learning**
   PhD Student: Arindam Chowdhury, Professor David J. Cappelleri

53. **Autonomous Aerial Manipulation with UAVs**
   PhD Student: Daniel McArthur, Professor David J. Cappelleri

54. **Oscillator Array Based Sensing**
   PhD Student: Allison Murray, Professor Jeffrey F. Rhoads

55. **Autonomous Image Localization for Visual Assessment**
   PhD Student: Jongseong Choi, Professor Shirley J. Dyke

56. **Reimagining Human-Machine Interactions Through Trust-Based Feedback**
   PhD Student: Kumar Akash, Professor Neera Jain
57. Powering What's Next in Freight Transportation
   PhD Student: Ana Guerrero de la Peña, Professor Neera Jain

58. AgBug: Mobile Robot for Precision Agriculture
   MS Student: Che Kun Law, Professor David J. Cappelleri

59. Iterative Learning Control for Twin Roll Strip Casting
   PhD Student: Florian Browne, Professor Neera Jain

Additive Manufacturing and Smart Materials, Vibrations and Acoustics

60. Switchable Bistability in 3D Printed Shells
   PhD Student: Katie Riley, Professor Andres F. Arrieta

61. Demonstrator for Selectively Compliant Morphing Systems with Multi-Stable Structures
   PhD Student: David Boston, Professor Andres F. Arrieta

62. Additively Manufactured Conductive Polymer Spark Gap Igniters
   MS Student: Miranda McConnell, Professor Jeffrey F. Rhoads

63. Energy Harvesting in Phase Transforming Cellular Materials (PXCM)
   PhD Student: Aman Thakkar, Professor Andres F. Arrieta

64. 3D Printing of Energetic Structural Materials
   PhD Student: Trevor Fleck, Professor Jeffrey F. Rhoads

65. Modeling of Membrane-Based Liquid Desiccant Dehumidifier
   MS Student: Xiaoli Liu, Professor Ming Qu

66. Weight Minimization of Automotive Sound Packages in the Presence of Air Leaks
   PhD Student: Hyunjun Shin, Professor J. Stuart Bolton

67. Fractional Calculus Homogenization Model
   PhD Student: John Hollkamp, Professor Fabio Semperlotti

68. Input-Independent Wave Propagation in Bistable Lattices with Elastic Interactions
   PhD Student: Myungwon Hwang, Professor Andres F. Arrieta
69. Multi-functional Acoustic/Damping Materials
    PhD Student: Yutong Xue, Professor J. Stuart Bolton

70. Mechanically Dissipating Targeted Vibrational Modes within Turbomachinery
    MS Student: Christian Grantz, Professor Andres F. Arrieta

71. Measurement Unit Load Stability Transportation Hazards
    PhD Student: Amin Joodaky, Professor James Gibert

72. Thermomechanical Behavior of Explosives at High Frequency
    PhD Student: Allison Range, Professor Jeffrey F. Rhoads