

# **1 – Residential Buildings: Technologies, Design, Performance Analysis, and Building Industry Trends**

## **The Operation Result of the Demonstration of Energy Networks of Electricity, Heat, and Hydrogen at an Apartment Building in 2007**

Hirohisa Aki, National Institute of Advanced Industrial Science and Technology (AIST)  
Yukinobu Taniguchi, National Institute of Advanced Industrial Science and Technology (AIST)  
Junji Kondoh, National Institute of Advanced Industrial Science and Technology (AIST)  
Itaru Tamura, Osaka Gas Co., Ltd.  
Akeshi Kegasa, Osaka Gas Co., Ltd.  
Yoshiro Ishikawa, KRI Inc.  
Shigeo Yamamoto, KRI Inc.  
Ichiro Sugimoto, KRI Inc.

## **Modeling the Impacts of Performance Components in Super Energy Efficient House Designs in Different Climate Zones**

John Broniek, IBACOS Inc.

## **Demand Response-Enabled Residential Thermostat Controls**

Xue Chen, University of California, Berkeley  
Jaehwi Jang, University of California, Berkeley  
David M. Auslander, University of California, Berkeley  
Therese Peffer, University of California, Berkeley  
Edward Arens, University of California, Berkeley

## **Zero Energy Peak from Zero Energy Homes**

Jeff Christian, Oak Ridge National Laboratory

## **Field Tests of Specially Selected Air Conditioners for Hot Dry Climates**

Abram Conant, Proctor Engineering Group  
John Proctor, Proctor Engineering Group  
Lance Elberling, Pacific Gas & Electric Company

## **Field Monitoring of High Efficiency Residential Heat Pumps**

Bob Davis, Ecotope, Inc.  
David Robison, Stellar Processes

## **Least Cost Path to Achieving 50% Reduction in Residential Energy Use (in Heating Climates)**

Jan Harris, X Prize Foundation  
Michael Blasnik, Blasnik and Associates

## **Can Conventional Cooling Equipment Meet Dehumidification Needs for Houses in Humid Climates?**

Hugh Henderson, CDH Energy Corp.  
Don Shirey, Florida Solar Energy Center  
C. Keith Rice, Oak Ridge National Laboratory

**Integration of Energy Management, Electrical Submetering and Time Sensitive Pricing in a Large Residential Community Utilizing Wireless Communications**

Herbert Hirschfeld, Consultant

**How Energy Efficient Are Modern Dishwashers?**

David Hoak, Florida Solar Energy Center  
Danny Parker, Florida Solar Energy Center  
Andreas H. Hermelink, Florida Solar Energy Center

**Development of an Integrated Residential Humid Climate HVAC System**

Marc Hoeschele, Davis Energy Group, Inc.  
David Springer, Davis Energy Group, Inc.

**Measured Effect of Air Flow and Refrigerant Charge on a High-Performance Heat Pump**

Erin Kruse, Ecotope, Inc.  
Larry Palmiter, Ecotope, Inc.  
Paul Francisco, University of Illinois

**Moving Ducts Inside: Big Builders, Scientists Find Common Ground**

Michael Lubliner, Washington State University  
Ryan Kerr, Consol  
Andrew Gordon, WSU Energy Program  
Chuck Murray, Washington State Department of Trade and Economic Development

**Manufactured Panelized Roof System for Residential Buildings**

Susan Mantell, University of Minnesota  
Jane Davidson, University of Minnesota  
Gur Mittelman, University of Minnesota  
Giovanni Di Muoio, University of Minnesota  
Garrett Mosiman, University of Minnesota  
John C. Carmody, University of Minnesota  
Taichiro Okazaki, University of Minnesota  
Carol K. Shield, University of Minnesota  
B.J. Siljenberg, University of Minnesota  
Dave MacDonald, Mattson MacDonald Young

**Next Generation Roofs and Attics for Homes**

William Miller, Oak Ridge National Laboratory  
Jan Košny, Oak Ridge National Laboratory

**Peak Demand and Energy Savings from Properly Sized and Matched Air Conditioners**

Robert Mowris, Verified, Inc.  
Ean Jones, Verified, Inc.

**NightCool: A Nocturnal Radiation Cooling Concept**

Danny Parker, Florida Solar Energy Center  
John R. Sherwin, Florida Solar Energy Center  
Andreas H. Hermelink, Florida Solar Energy Center

**The Challenge of Vapor-Diaphragm Thermostat Retrofits in Existing Multifamily Buildings**

Jeffrey Romberger, SBW Consulting, Inc.  
Debra Tachibana, Seattle City Light  
Randall Birk, SBW Consulting, Inc.

**Systems Research on Residential Ventilation**

Armin Rudd, Building Science Corporation  
Joseph Lstiburek, Building Science Corporation

**Energy-Related Water Fixture Measurements: Securing the Baseline for Northwest Single Family Homes**

Marc Schuldt, SBW Consulting, Inc.  
Debra Tachibana, Seattle City Light

**HWSIM: Development and Validation of a Residential Hot Water Distribution System Model**

David Springer, Davis Energy Group, Inc.  
Leo Rainer, Davis Energy Group, Inc.  
Marc Hoeschele, Davis Energy Group, Inc.  
Robert Scott, RASENT Solutions

**Too Much Stick? Not Enough Carrot? Testing the Presumption of Non-Compliance**

Eric Swan, RLW Analytics  
Jarred Metoyer, RLW Analytics  
Wim Bos, Sacramento Municipal Utility District

**Effects of Air Conditioner Sizing on Energy Consumption and Peak Demand in a Hot-Dry Climate**

Aaron Townsend, Building Science Corporation  
Kohta Ueno, Building Science Corporation

**Field Monitoring of Wall Vapor Control Strategies in the Pacific Northwest**

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Aaron Townsend, Building Science Corporation  
Michael Lubliner, Washington State University