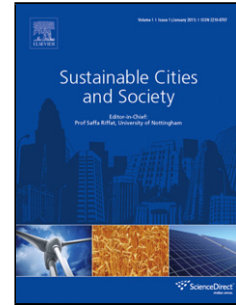


Accepted Manuscript

Title: Practical and low-cost monitoring tool for building energy management systems using virtual instrumentation

Authors: Diego Bonilla, Margarita Gil Samaniego, Rogelio Ramos, Héctor Campbell



PII: S2210-6707(17)30878-8
DOI: <https://doi.org/10.1016/j.scs.2018.02.009>
Reference: SCS 976

To appear in:

Received date: 10-7-2017
Revised date: 7-2-2018
Accepted date: 10-2-2018

Please cite this article as: Bonilla, Diego., Samaniego, Margarita Gil., Ramos, Rogelio., & Campbell, Héctor., Practical and low-cost monitoring tool for building energy management systems using virtual instrumentation. *Sustainable Cities and Society* <https://doi.org/10.1016/j.scs.2018.02.009>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Practical and low-cost monitoring tool for building energy management systems using virtual instrumentation

Note: Changes are marked in grey

Diego Bonilla^a, Margarita Gil Samaniego^{b*}, Rogelio Ramos^a, Héctor Campbell^a

^a Instituto de Ingenieria, Universidad Autonoma de Baja California, Blvd. Benito Juarez y Calle de la Normal, Col Insurgentes Este, Mexicali, Baja California, Mexico. Diego.bonilla@uabc.edu.mx, hcampbellr@uabc.edu.mx

^b Facultad de Ingenieria, Universidad Autonoma de Baja California, Blvd. Benito Juarez y Calle de la Normal, Col Insurgentes Este, Mexicali, Baja California, Mexico, 21280

*Corresponding author: margarita.gil.samaniego.ramos@uabc.edu.mx

Highlights

- A new monitoring tool called Virtual Energy Management System (VMS) was developed for building energy management systems (BEMS).
- VMS is a user-friendly and a low-cost remote monitoring tool developed on the LabVIEW 2013[®] platform.
- VMS displays and records data of electrical parameters, energy demand, electricity costs and carbon footprint. The information can be viewed and collected locally or from any location through the internet.
- VMS was tested at a university building to verify its functionality and accuracy, besides obtaining, economic, environmental, performance and energy indicators.
- Findings show that by using this monitoring tool, the investment cost can be reduced by 40%.

Abstract

Building Energy Management Systems (BEMS) have been acquiring greater importance in the world; nowadays are a novel trend, especially for building performance, electricity cost and carbon footprint. Actually, tools for BEMS present some technical and economical disadvantages for building managers; to overcome these limitations, a practical and cost-effective tool is presented. To achieve this, we propose a

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات