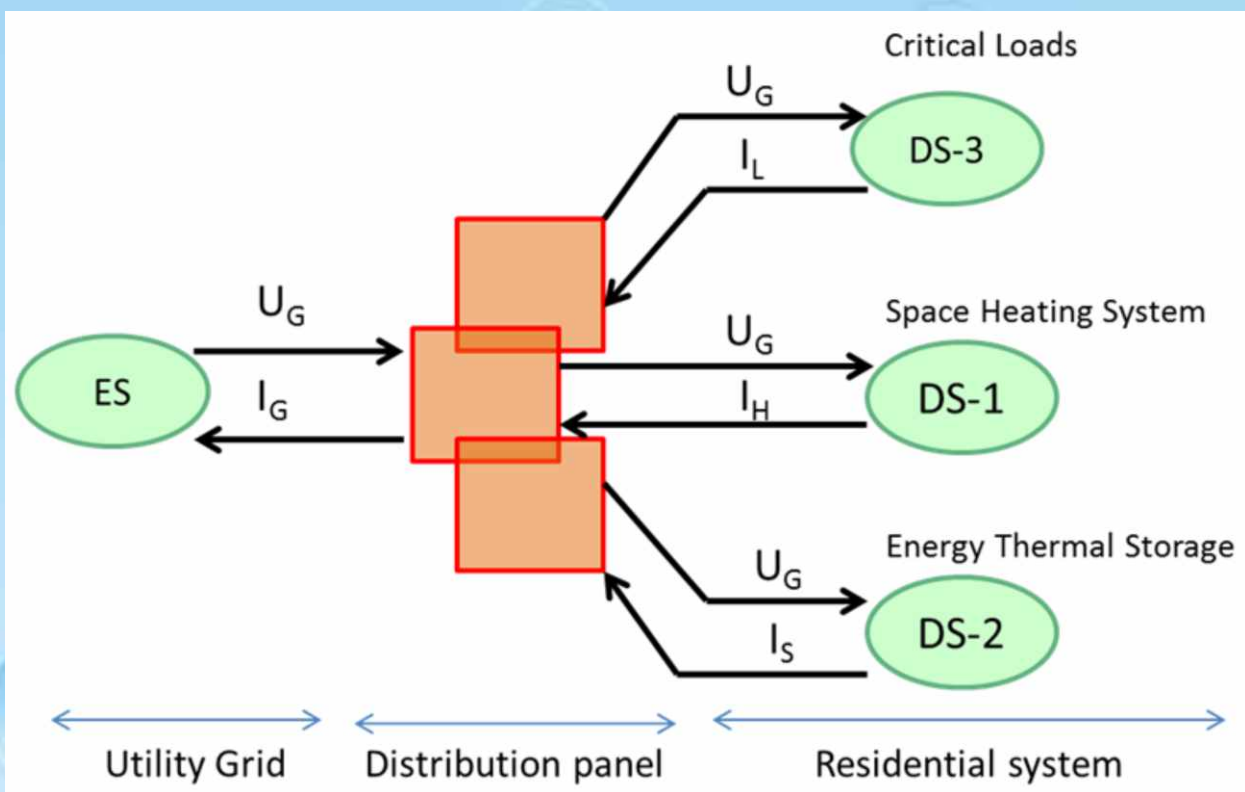


# Energy and Power Engineering



# Journal Editorial Board

ISSN: 1949-243X (Print) ISSN: 1947-3818 (Online)

<http://www.scirp.org/journal/epe>

---

## Editor-in-Chief

**Dr. Fermin Mallor**

Public University of Navarre, Spain

## Associate Editor-in-Chief

**Prof. Giulio Lorenzini**

University of Parma, Italy

## Editorial Advisory Board

**Prof. Ching-Chuen Chan**

The University of Hong Kong, China

**Prof. Ryuichi Yokoyama**

Tokyo Metropolitan University, Japan

**Prof. Xiaoxin Zhou**

Chinese Society of Electrical Engineering, China

## Editorial Board

**Dr. Kerim Allakhverdiev**

National Aviation Academy of Azerbaijan, Azerbaijan

**Dr. Fabio Bisegna**

Sapienza University of Rome, Italy

**Dr. Jesús M. Blanco**

University of the Basque Country, Spain

**Prof. Ho Chang**

National Taipei University of Technology, Chinese Taipei

**Prof. Jiangping Chen**

Shanghai Jiao Tong University, China

**Prof. Young Nam Chun**

Chosun University, South Korea

**Prof. Guoliang Ding**

Shanghai Jiao Tong University, China

**Prof. Zhen Fang**

Chinese Academy of Sciences, China

**Dr. Herbert H. C. Iu**

The University of Western Australia, Australia

**Prof. Ruomei Li**

Chinese Society for Electrical Engineering, China

**Prof. Zhengqi Li**

Harbin Institute of Technology, China

**Dr. Lin Ma**

University of Leeds, UK

**Prof. Adnan Midilli**

Recep Tayyip Erdogan University, Turkey

**Dr. Jingchun Min**

Tsinghua University, China

**Dr. Meng Ni**

The Hong Kong Polytechnic University, China

**Prof. Ping-Feng Pai**

National Chi Nan University, Chinese Taipei

**Prof. Pucheng Pei**

Tsinghua University, China

**Prof. Marc A. Rosen**

University of Ontario Institute of Technology, Canada

**Dr. Federico Scarpa**

University of Genoa, Italy

**Dr. Pierluigi Siano**

University of Salerno, Italy

**Dr. Siu-Chung Wong**

The Hong Kong Polytechnic University, China

**Prof. Changhui Ye**

Chinese Academy of Sciences, China

**Prof. Bo Yu**

China University of Petroleum, China

---

## Guest Reviewers

Paritala Chandrasekhar

Yogesh Kumar

Zhonghao Rao

Ahad Esmaeilian

Yinshi Li

Subith S. Vasu

Yang Han

Yang Liu

# Table of Contents

Volume 7    Number 4

April 2015

## The World Energy Challenge and Global Warming

A. Nduka.....105

## Energy-Saving and Control of General Indoor Lighting Elements Fed from a Micro-Controlled Hybrid Power Generation System

Y. Oğuz, B. Dursun, H. H. Oğuz.....110

## Theoretical Study of Wind Turbine Model with a New Concept on Swept Area

S. M. Agravat, N. V. S. Manyam, T. Harinarayana.....127

## Modelling the Kinetics of Jatropha Oil Transesterification

A. A. Okullo, A. K. Temu.....135

## Energetic Macroscopic Representation of an Electrically Heated Building with Electric Thermal Storage and Heating Control for Peak Shaving

C. Guzman, K. Agbossou, A. Cardenas.....144

## Experimental Determination of Local Resistance Coefficient of Sudden Expansion Tube

Y. P. Li, C. J. Wang, M. D. Ha.....154

# **Energy and Power Engineering (EPE)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Energy and Power Engineering* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$89 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### **SERVICES**

#### **Advertisements**

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### **Reprints (minimum quantity 100 copies)**

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### **COPYRIGHT**

#### **COPYRIGHT AND REUSE RIGHTS FOR THE FRONT MATTER OF THE JOURNAL:**

Copyright © 2015 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### **COPYRIGHT FOR INDIVIDUAL PAPERS OF THE JOURNAL:**

Copyright © 2015 by author(s) and Scientific Research Publishing Inc.

#### **REUSE RIGHTS FOR INDIVIDUAL PAPERS:**

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

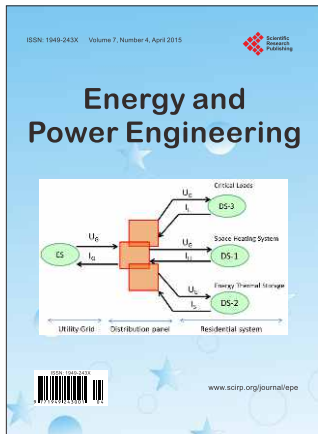
#### **DISCLAIMER OF LIABILITY**

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### **PRODUCTION INFORMATION**

For manuscripts that have been accepted for publication, please contact:

E-mail: [epe@scirp.org](mailto:epe@scirp.org)



## Energy and Power Engineering

ISSN 1949-243X (Print) ISSN 1947-3818 (Online)

<http://www.scirp.org/journal/epe>

*Energy and Power Engineering (EPE)*, a monthly journal, publishes research and review articles in all important aspects of electric power engineering and other professionals involved in the electric power industry. Both experimental and theoretical papers are acceptable provided they report important findings, novel insights, or useful techniques in these areas.

### Editor-in-Chief

**Dr. Fermin Mallor**

Public University of Navarre, Spain

### Associate Editor-in-Chief

**Prof. Giulio Lorenzini**

University of Parma, Italy

### Editorial Advisory Board

**Prof. Ching-Chuen Chan**

The University of Hong Kong, China

**Prof. Ryuichi Yokoyama**

Tokyo Metropolitan University, Japan

**Prof. Xiaoxin Zhou**

Chinese Society of Electrical Engineering, China

### Subject Coverage

EPE aims to strengthen relations between the energy sector, research laboratories, and universities. Additionally, accepted ones will immediately appear online followed by printed in hard copy. The topics to be covered by Energy and Power Engineering include, but are not limited to:

- ◆ Analysis of Hybrid Generation Systems
- ◆ Artificial Intelligence in Complex Power and Energy Systems
- ◆ Bio-Energy
- ◆ Building Energy Use and Energy Conservation
- ◆ CO<sub>2</sub> and Emission Issues
- ◆ CO<sub>2</sub> Capture and Storage
- ◆ Conventional Energy Power Generation
- ◆ Design and Dimensioning of Power Systems
- ◆ Distributed Generation
- ◆ Energy and Exergy Analyses
- ◆ Energy Policies and Strategies
- ◆ Energy Resources
- ◆ Energy Resources Assessment
- ◆ Energy Storage
- ◆ Energy Sustainability
- ◆ Gasification Processes and Technologies
- ◆ Heat Exchanger
- ◆ Hydrogen Energy and Fuel Cells
- ◆ Impact of Climate Changes on Energy Systems
- ◆ Integrating Renewable Energy to the Power Grid
- ◆ International Experiences with Energy Infrastructures
- ◆ Investment Planning for Energy Infrastructures
- ◆ Organic and Inorganic Photovoltaics
- ◆ Petroleum Engineering
- ◆ Planning and Operations of Power Systems
- ◆ Power Demand Forecasting and Management, Power Market
- ◆ Power Electronic Engineering
- ◆ Power Forecasting from Wind, Solar and Other Renewal Sources of Energy
- ◆ Power System Protection
- ◆ Power Transmission and Distribution
- ◆ Reliability Evaluation and Risk Analysis of Power Systems
- ◆ Renewable Energy Power Generation
- ◆ Smart Grid
- ◆ Socio-Economic and Power System Management
- ◆ Solar Energy Engineering
- ◆ Transmission and Capacity Planning
- ◆ Waste Energy Management
- ◆ Wind Energy Engineering

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the EPE.

### Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

### Website and E-Mail

<http://www.scirp.org/journal/epe>

Email: [epe@scirp.org](mailto:epe@scirp.org)