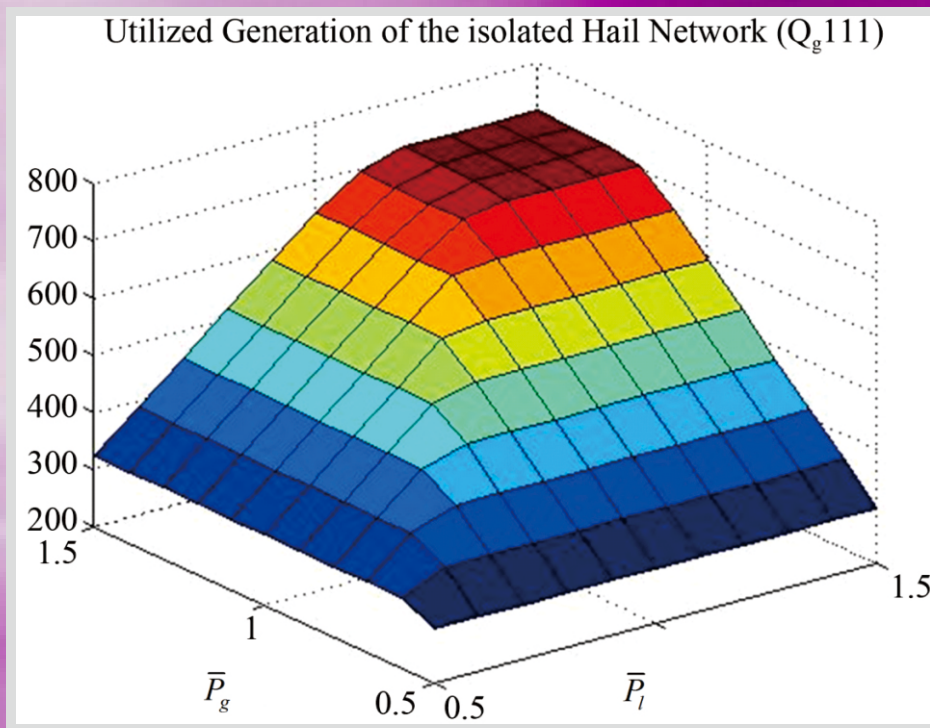


# Energy and Power Engineering



# 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

## 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. Fabio Bisegna**

Sapienza University of Rome, Italy

**Prof. Ho Chang**

National Taipei University of Technology, Chinese Taipei

**Prof. Jiangping Chen**

Shanghai Jiao Tong University, China

**Prof. Young Nam Chun**

Chosun University, Korea (South)

**Dr. Philippe Colombari**

University Pierre & Marie Curie, France

**Prof. Guoliang Ding**

Shanghai Jiao Tong University, China

**Prof. Zhen Fang**

Chinese Academy of Sciences, China

**Prof. Khaled A. M. Gasem**

Oklahoma State University, USA

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

The University of Western Australia, Australia

**Dr. Ruomei Li**

Chinese Society for Electrical Engineering, China

**Prof. Zhengqi Li**

Harbin Institute of Technology, China

**Prof. Kaipei Liu**

Wuhan University, China

**Dr. Dylan Dah-Chuan Lu**

University of Sydney, Australia

**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, Hong Kong (China)

**Prof. Ping-Feng Pai**

National Chi Nan University, Chinese Taipei

**Prof. Wei-Ping Pan**

Western Kentucky University, USA

**Prof. Pucheng Pei**

Tsinghua University, China

**Prof. Constantine D. Rakopoulos**

National Technical University of Athens, Greece

**Prof. Nanqi Ren**

Harbin Institute of Technology, China

**Prof. Marc A. Rosen**

University of Ontario Institute of Technology, Canada

**Dr. Pierluigi Siano**

University of Salerno, Italy

**Prof. Yuanzhang Sun**

Tsinghua University, China

**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-Beijing, China

**Prof. Yong Zhang**

University of Science and Technology Beijing, China

---

## Guest Reviewers

Paritala Chandrasekhar

Yang Han

Ahad Esmaeilian

## TABLE OF CONTENTS

Volume 4 Number 5

September 2012

<b>Design and Analysis of a 24 Vdc to 48 Vdc Bidirectional DC-DC Converter Specifically for a Distributed Energy Application</b>	
A. B. Cultura II, Z. M. Salameh.....	315
<b>Design and Evaluation of Solar Inverter for Different Power Factor Loads</b>	
M. Ahmad, B. H. Khan.....	324
<b>Probabilistic Fuzzy Approach to Assess RDS Vulnerability and Plan Corrective Action Using Feeder Reconfiguration</b>	
M. S. Thomas, R. Ranjan, R. Raina.....	330
<b>Intelligent Load Management Scheme for a Residential Community in Smart Grids Network Using Fair Emergency Demand Response Programs</b>	
M. Ali, Z. A. Zaidi, Q. Zia, K. Haider, A. Ullah, M. Asif.....	339
<b>Investigating the Use of <i>Jatropha</i> Biodiesel in Compression Ignition Engines by Comparing Effects of Storage Time on Its Properties with the Standard Properties of Fossil-Diesel and Properties of Quality Biodiesel</b>	
G. Mwandila.....	349
<b>Numerical Analysis of the Natural Gas Combustion Products</b>	
F. Rueda Martínez, M. Toledo Velázquez, G. Polupan, J. Abugaber Francis, G. Jarquín López, C. Reséndiz Rosas, J. Á. Ortega Herrera.....	353
<b>Energy and Exergy Analysis of a Vegetable Oil Refinery</b>	
M. A. Sulaiman, A. O. Oni, D. A. Fadare.....	358
<b>The Density and Momentum Distributions of 2-Dimensional Transonic Flow in an LP-Steam Turbine</b>	
A. A. Rueda Martínez, F. Rueda Martínez, M. Toledo Velázquez, F. Sánchez Silva, I. Carvajal Mariscal, J. Abugaber Francis.....	365
<b>Probabilistic Assessment of Power System Performance Quality</b>	
B. M. Alshammari, M. A. El-Kady.....	372
<b>Long Term Load Forecasting and Recommendations for China Based on Support Vector Regression</b>	
S. J. Ye, G. F. Zhu, Z. Xiao.....	380

---

The figure on the front cover is from the article published in Energy and Power Engineering, 2012, Vol. 4, No. 5, pp. 372-379 by Badr M. Alshammari and Mohamed A. El-Kady.

# 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 bimonthly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$59 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©2012 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

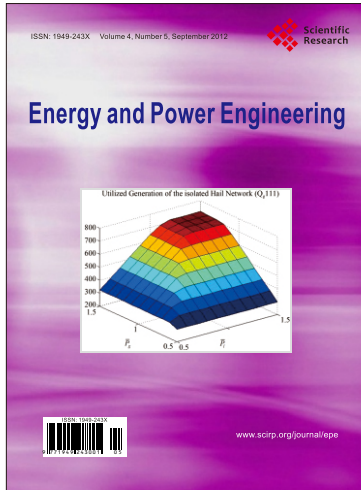
Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any 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)

# Call for Papers



## Energy and Power Engineering

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

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

*Energy and Power Engineering (EPE)*, a bimonthly 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

### 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 Resources
- ◆ Energy Resources Assessment
- ◆ Energy Storage
- ◆ 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
- ◆ 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)