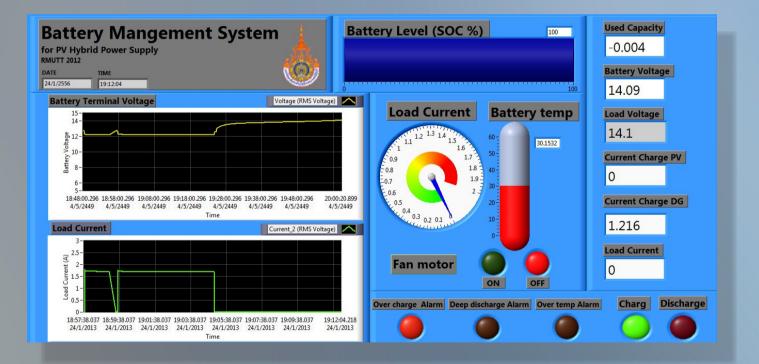
ISSN: 1949-243X Volume 6, Number 7, July 2014



Energy and Power Engineering





www.scirp.org/journal/epe

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

National Aviation Academy of Azerbaijan, Azerbaijan

National Taipei University of Technology, Chinese Taipei

Sapienza University of Rome, Italy

Shanghai Jiao Tong University, China

Shanghai Jiao Tong University, China

Chinese Academy of Sciences, China

Harbin Institute of Technology, China

Recep Tayyip Erdogan University, Turkey

The Hong Kong Polytechnic University, China

The Hong Kong Polytechnic University, China

China University of Petroleum-Beijing, China

Chinese Academy of Sciences, China

University of Ontario Institute of Technology, Canada

National Chi Nan University, Chinese Taipei

The University of Western Australia, Australia

Chinese Society for Electrical Engineering, China

Chosun University, South Korea

Oklahoma State University, USA

Wuhan University, China

Tsinghua University, China

Tsinghua University, China

University of Genoa, Italy

University of Salerno, Italy

University of Leeds, UK

Associate Editor-in-Chief

Prof. Giulio Lorenzini

University of Parma, Italy

Editorial Advisory Board

Prof. Ching-Chuen ChanThe University of Hong Kong, ChinaProf. Ryuichi YokoyamaTokyo Metropolitan University, JapanProf. Xiaoxin ZhouChinese Society of Electrical Engineering, China

Editorial Board

Dr. Kerim Allakhverdiev Dr. Fabio Bisegna **Prof. Ho Chang Prof. Jiangping Chen Prof. Young Nam Chun Prof. Guoliang Ding Prof. Zhen Fang** Prof. Khaled A. M. Gasem Dr. Herbert H. C. Iu Prof. Ruomei Li Prof. Zhengqi Li Prof. Kaipei Liu Dr. Lin Ma Prof. Adnan Midilli Dr. Jingchun Min Dr. Meng Ni **Prof. Ping-Feng Pai Prof. Pucheng Pei** Prof. Marc A. Rosen Dr. Federico Scarpa Prof. Pierluigi Siano **Dr. Siu-Chung Wong** Prof. Changhui Ye Prof. Bo Yu

Guest Reviewers

Paritala Chandrasekhar Ahad Esmaeilian Yang Han Yogesh Kumar Yinshi Li Yang Liu Zhonghao Rao Subith S. Vasu



Table of Contents

Volume 6 Number 7

July 2014

Alternative Approaches for Distinguishing between Faults and Inrush Current in Power Transformers	
A. M. A. Alomar, B. E. M. Shamseldin	143
Identification of Preferable Distributed Generators Locations for Congestion Relief in Multi-Bus Power Network	
B. K. Sarkar, A. Chakrabarti, A. De	161
Thermal Distribution Performance of NPCM: NaCl, NaNO $_3$ and KNO $_3$ in the Thermal Storage System	
P. Tooklang, S. Vaivudh, S. Sukchai, W. Rakwichian	174
Design of Real Time Battery Management Unit for PV-Hybrid System by Application of Coulomb Counting Method	
A. Ausswamaykin, B. Plangklang	186

The figure on the front cover is from the article published in Energy and Power Engineering, 2014, Vol. 6, No. 7, pp. 186-193 by Apiwat Ausswamaykin and Boonyang Plangklang.

Energy and Power Engineering (EPE)

Journal Information

SUBSCRIPTIONS

The *Energy and Power Engineering* (Online at Scientific Research Publishing, <u>www.SciRP.org</u>) 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

SERVICES

Advertisements Advertisement Sales Department, E-mail: <u>service@scirp.org</u>

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: <u>sub@scirp.org</u>

COPYRIGHT

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

Copyright © 2014 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 © 2014 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: <u>epe@scirp.org</u>

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 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

University of Parma, Italy

Associate Editor-in-Chief

Prof. Giulio Lorenzini

Editorial Advisory Board

Prof. Ching-Chuen Chan Prof. Ryuichi Yokoyama Prof. Xiaoxin Zhou

Subject Coverage

The University of Hong Kong, China Tokyo Metropolitan University, Japan Chinese Society of Electrical Engineering, China

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
- \mathbf{O}_2 and Emission Issues
- \mathbf{O}_2^{-} 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
- Praining and Operations of Power Systems
 Power Demand Forecasting and Management,
- Power Demand Forecasting and Ma 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-Mailhttp://www.scirp.org/journal/epeEmail: epe@scirp.org