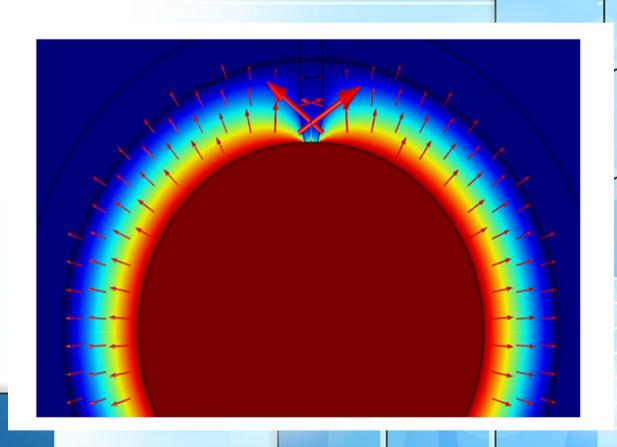




Journal of Power and Energy Engineering





www.scirp.org/journal/jpee

Journal of Power and Energy Engineering

ISSN Print: 2327-588X ISSN Online: 2327-5901

http://www.scirp.org/journal/jpee

Editor-in-Chief

Prof. Elias Stefanakos University of South Florida, USA

Editorial Board

Dr. Roberto Capata University of Roma "Sapienza", Italy

Prof. Wei-Hsin ChenNational Cheng Kung University, Chinese TaipeiDr. Chun-Hu ChengNational Taiwan Normal University, Chinese TaipeiDr. Smith Eiamsa-ardMahanakorn University of Technology, Thailand

Prof. D. Yogi Goswami University of South Florida, USA

Prof. Zhongjie HuanTshwane University of Technology (TUT), South AfricaDr. Freddie Liswaniso InambaoUniversity of KwaZulu-Natal Durban, South Africa

Prof. Ching-Fuh LinNational Taiwan University, Chinese Taipei

Prof. Rodolfo LópezUniversity of Zaragoza, SpainProf. Elham B. MakramClemson University, USA

Prof. George Papadakis Agricultural University of Athens, Greece

Dr. Elias Papanicolaou "Demokritos" National Center for Scientific Research, Attiki, Greece

Dr. Raul RabinoviciBen-Gurion University of The Negev, IsraelProf. M. RamamoortyCentral Power Research Institute (CPRI), India

Dr. Manuel RomeroIMDEA Energy Institute, SpainProf. Vittorio VerdaPolitecnico di Torino, Italy, Italy

Prof. Valery Vodovozov Tallinn University of Technology, Estonia

Prof. Nikolai Voropai Energy Systems Institute of Russian Academy of Sciences, Russia

Prof. Chao Xu North China Electric Power University, China

Dr. Wenxian Yang Newcastle University, UK



Table of Contents

Volume 2 Number 11	November 2014
Overview of Concentrated Photovoltaic (CPV) Cells	
C. Chukwuka, K. A. Folly	1
Capacitance of Water Tree Modeling in Underground Cables	
Q. Chen, K. Burkes, E. Makram, R. Hadidi, X. F. Xu	9
The Performance of Lightning Rod Arrester and Its Effect on to Tower for 500 kV Transmission System	the Top Potential of
J. G. Gong, Z. Y. Lin, Y. Y. Xu, S. Zhao, Q. Zhang	19
Off-Grid Photovoltaic System Design for Haiti School Project	
W. T. Feng, Z. M. Slameh	24
New Concept for Calculating DC Harmonic Voltages and Curr	ents in BTB HVDC Converters
CK. Kim, SD. Lee, SH. Choi, YB. Yoon	33

Journal of Power and Energy Engineering (JPEE)

Journal Information

SUBSCRIPTIONS

The *Journal of Power and Energy Engineering* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

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

E-mail: sub@scirp.org

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: jpee@scirp.org

Call for Papers

Journal of Power and Energy Engineering

ISSN Print: 2327-588X ISSN Online: 2327-5901 http://www.scirp.org/journal/jpee

Journal of Power and Energy Engineering (JPEE) is an international journal dedicated to the latest advancement of power and energy engineering. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of power and energy engineering.

Editor-in-Chief

Prof. Elias Stefanakos

University of South Florida, USA



Editorial Board

Dr. Roberto Capata Prof. Wei-Hsin Chen Dr. Chun-Hu Cheng Dr. Smith Eiamsa-ard Prof. D. Yogi Goswami Prof. Zhongjie Huan

Dr. Freddie Liswaniso Inambao

Prof. Ching-Fuh Lin Prof. Rodolfo López Prof. Elham B. Makram Prof. George Papadakis Dr. Elias Papanicolaou Dr. Raul Rabinovici Prof. M. Ramamoorty Dr. Manuel Romero Prof. Vittorio Verda Prof. Valery Vodovozov Prof. Nikolai Voropai Prof. Chao Xu Dr. Wenxian Yang

Subject Coverage

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

1. Power Generation—Conventional and Renewable

Bio-energy technologies, process and utilization Environmental-friendly technologies for power generation

Geothermal and tidal wave energy

Hydropower technologies and applications

New technologies and design for energy efficiency

New technologies for minimizing CO₂ generation

Photovoltaic for solar power applications

Safe nuclear energy generation and utilization

Thermal power technologies and applications

Waste products as fuel

Wind power generation and utilization

Other sustainable energy

2. Power System Management

Application of wide area measurement system (WAMS) Control strategies for modern power system stability Integrated substation automation technologies

Load modeling, estimation and forecast

Modeling and simulation of large power systems

Online monitoring and fault diagnosis system $\,$

Power system analysis and optimization

Power system management technologies

Power system monitoring and mitigation technologies

Power system planning and operation

3. Power Transmission and Distribution

Advanced distribution and SCADA technologies

Electromagnetic analysis in power systems

Electromagnetic compatibility in power systems

Electromagnetic transient in high voltage power systems

HVDC and flexible AC transmission system (FACTS)

Insulation condition monitoring in power systems

Over-voltage, lightning protection and grounding

Plasma physics and the pulsed power technology

Ultra High Voltage (UHV) technologies

4. Smart Grid Technologies

Agent-based Computational Economics for Grid

Agent-based mechanisms for Grid markets

Agent-based simulation of Grid environments and markets

Automated negotiation for Grid resource allocation

Engineering of Grid markets and Grid architectures

Modeling of Grid environments

Resource allocation in Grid scenarios using agent-based approaches

Technical research on future application domains

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques

Notes for Intending Authors

The submitted manuscript should not have been previously published in any form and must not be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All paper are refereed through a peer process. For more details about the submissions, please access the website.

E-mail: jpee@scirp.org

Website and E-Mail

http://www.scirp.org/journal/jpee